

Strictly Confidential (FR)
Class I - FOMC

A Modern History of FOMC Communication: 1975–2002

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June 24, 2003

The views expressed herein are solely those of the author and are not necessarily shared by the Federal Open Market Committee, the Board of Governors of the Federal Reserve System, or other members of the staff of either organization.

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Dedicated to my mother, Elizabeth Smith Lindsey

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CONTENTS

Executive Summary	vii
The Structure of Policy Implementation and the Type of Operating Target	vii
The Setting of the Operating Target	x
The Disclosure of Detailed Deliberations	xi
The Principles of Policy Design	xi
Prologue: An Exchange of Letters	xiii
I. The Second Half of the 1970s: Rising Inflation and Operating on the Funds Rate ...	1
Discontinuing the Memoranda of Discussion	3
Releasing the Directive with a Delay and Altering Its Content	14
Complying with New Legislative Goals and Reporting Requirements	24
II. October 1979 to September 1982: Controlling M1 and Operating on Nonborrowed Reserves	39
Adopting New Monetary Control Procedures	41
Adapting the Content of the Directive	44
Complying with the Legislative Initiative for Monetary Targeting	47
III. October 1982 to November 1989: Disinflation and Operating on Borrowed Reserves	67
Altering Operating Procedures	69
Adjusting the Content of the Directive	71
Defending the Need for Releasing the Directive with a Delay	78
Complying with Legislative Requirements in Conducting Policy	87
IV. The 1990s: Further Disinflation and Operating on the Federal Funds Rate	103
Responding to Representative Gonzalez on Minutes and Transcripts	105
Complying with Existing Legislative Goals and Reporting Requirements	130
Refining the Content of the Directive and the Immediate Announcement	155
V. 2000 to 2002: The Current Era	183
Implementing Reforms to the Immediate Announcement	185
Reassessing and Retaining Disclosure Methods	194
Complying with Legislative Goals and Changing Reporting Requirements	195
VI. 1969–2003:Q1: Evolving Design of Monetary Policy	201
Designing Monetary Policy	203
Summary of Evolving Policy Design	237
VII. Conclusion	243

A MODERN HISTORY OF FOMC COMMUNICATION: 1975–2002

EXECUTIVE SUMMARY

This paper chronicles the evolution of the Federal Open Market Committee's policy for communicating with the public during the last quarter century. The stages of this process are summarized by the titles of the first five chapters, which are repeated in the general headings of the table below. The chapters are organized according to the operating target used by the FOMC during the particular era. Within each chapter, the paper examines the communication of four aspects of monetary policymaking:

1. the structure of policy implementation, including the type of operating target
2. the specific setting of that operating target at each time and, in some eras, indications about possible future action
3. the details of the deliberative process behind the FOMC's decisions
4. the principles behind the policy design that the FOMC implicitly used to determine its policy stance.

The evolution of the last aspect of policymaking is only touched upon in the first five chapters but is analyzed in more detail in the sixth chapter.

The sixth chapter presents estimates of the FOMC's "reaction function" in an attempt to assess whether differences in communication strategy were associated with statistically significant differences in the way the policy instrument was determined. This chapter, which is written at a more technical level than the rest of the paper, interprets such FOMC reaction functions as only implicit because correlation cannot reveal conscious FOMC intent. Instead, the FOMC in each stage is presumed to have acted "as if" it were implementing the specified reaction function. Also, distinct demarcations between periods with differing policy designs cannot always be determined with precision.

A chronology of the key milestones in FOMC communication emerges as a byproduct of this examination (see the table below). A brief conclusion in the seventh chapter finishes the text.

A prologue sets the stage for the treatment of the last half of the 1970s. It consists of an exchange of letters in 1975 between Chairman Arthur Burns and Representative Wright Patman (Democrat from Texas and chairman of the House Subcommittee on Domestic Monetary Policy).

The Structure of Policy Implementation and the Type of Operating Target

The FOMC of the 1970s transmitted fairly clearly the structure of its operations through the policy record, congressional testimonies, speeches, and staff papers. In that decade, the FOMC solidified the role of the federal funds rate as its operating instrument. It confined movements of the funds rate within narrow limits around its expected value, although it allowed the Manager for Domestic Operations in consultation with the Chairman to make small intermeeting adjustments in response to the behavior of money and bank credit.

Key Events in the Modern History of FOMC Communication, 1975–2002

Date	Event
Rising inflation and operating on the funds rate	
1975: March 18	Shortening the delay in the release of the policy record
March 24	Adapting to the congressional resolution on reporting 12-month-ahead ranges
1976: February 17	Forming the Subcommittee on the memorandum of discussion
March 15	Supporting the memorandum of discussion
March 29	Reversing field on the memorandum of discussion
May 18	Discontinuing the memorandum of discussion
May 18	Shortening further the delay in the release of the policy record
June 30	Testifying before the Joint Economic Committee
1977: February 15	Introducing monetary tolerance ranges in the operational paragraph
February 15	Noting the inapplicability of the Government in the Sunshine Act
November 16	Receiving multiple objectives in the Federal Reserve Reform Act of 1977
December 14	Assessing the impact of immediate release on the Directive
1978: January 13	Asking for legislative relief
October 27	Accepting the Humphrey-Hawkins Act
1979: February 6	Picking the first calendar-year money and credit ranges
June 28	Winning the Merrill case
July 11	Compiling the first semiannual macroeconomic forecasts
Controlling M1 and operating on nonborrowed reserves	
1979: October 6	Replacing the funds rate with nonborrowed reserves
October 6	Alluding to reserve aggregates and widening the funds rate band
1980: January 9	Reintroducing quantitative short-run monetary ranges
February 4	Redefining the monetary aggregates
March 14	Implementing credit controls
July 9	Resisting setting annual ranges for the next year
December 18	Introducing a violation of the funds rate band as a signal for consultation
1981: February 2	Accounting for nationwide NOWs with shift adjustment
February	Evaluating the new monetary control procedures
1982: June 30	Aiming at the upper bound of a constant annual M1 range
July 1	Perceiving the need for more flexibility in policy design
Disinflation and operating on borrowed reserves	
1982: Fall	Replacing nonborrowed with borrowed reserves
October 5	Abandoning M1 temporarily
November 16	Considering the pros and cons of immediate release
1983: February 8	Adjusting the annual M2 range for MMDAs and demoting the M1 range
February 9	Converting to restraint on reserve positions
March 29	Converting the internal Red Book to the public Beige Book
November 15	Introducing the tilt
1984: January 31	Introducing the degree of pressure on reserve positions
June 26	Replying to Peter Flanigan of Dillon, Read & Co.
Summer	Tightening while not tightening: The Continental Illinois episode
August 24	Writing to Representative Fautroy
1985: March 26	Introducing the ranking of policy factors
July 18	Responding to Senator Mattingly
1986: January	Eliciting a critique of the defense of delay in the Merrill case
1987: February 10	Dropping the annual M1 range
November 3	Targeting reserve pressure flexibly
1989: November 22	Eating humble pie along with the Thanksgiving turkey

Key Events in the Modern History of FOMC Communication, 1975–2002—CONTINUED

Date	Event
Further disinflation and operating on the federal funds rate	
1990: November 13	Deleting the range for the federal funds rate
1991: August 20	Considering more automaticity in the funds rate
December 17	Amending the ranking of policy factors
1992: July 21	Tracking M2 while being overtaken by the Four Horsemen
October 8	Receiving disclosure questions from Representative Gonzalez
1993: February 2	Discussing the timing and extent of disclosure
February 2	Downgrading broad money to information-variable status
February 3	Removing a quantitative short-run M2 range from the operational paragraph
March 23	Creating the minutes of the FOMC meeting
May 18	Leaking the asymmetric tilt
July 6	Receiving Representative Gonzalez's reaction
July 20	Sticking to their guns
October 5	Preparing to testify before the House banking committee
October 15	Preparing further to testify before the House banking committee
October 19	Testifying before the House banking committee
October 22	Leaking makes the transcripts an issue
November 16	Deciding on the disposition of past transcripts
December 21	Letting Representative Gonzalez's staff listen to the October 15 tape
1994: February 3	Rejecting a more-distant horizon for the macroeconomic forecasts
February 4	Introducing the immediate announcement
July 5	Rejecting an even-more-distant horizon for the macroeconomic forecasts
July 5	Relegating the broad monetary ranges to benchmark status
1995: February 1	Rejecting multiyear inflation targets
February 2	Deciding on the disposition of future transcripts
February 2	Formalizing rules for immediate announcements
July 6	Giving the funds rate target in the immediate announcement
1996: July 2	Considering the working definition of, and approach to, price stability
1997: February 4	Accelerating release of the directive by one day
July 1	Considering the working definition of, and approach to, price stability
August 19	Giving the funds rate target in the operational paragraph
1998: December 22	Amending the tilt wording and deleting the qualitative money sentence
December 22	Announcing major shifts of view without a policy change infrequently
1999: May 18	Announcing a change in the tilt immediately
December 21	Agreeing on the balance of risks and shortening the directive
The current era	
2000: January 19	Making an immediate announcement after each meeting
January 19	Announcing the balance of risks
December 27	Replacing the expired reporting requirements of the Humphrey-Hawkins Act
2002: March 19	Announcing the FOMC vote immediately
March 19	Continuing the rules and understandings for the blackout period and speeches
March 19	Continuing the schedule for the minutes

Unfortunately, the FOMC at that time found that moving the overnight funds rate by enough to control money was not easy with its operating approach of directly deciding the setting of that rate itself. The results for inflation in the 1970s suggested that the FOMC had acted “too little—too late;” so as the decade came to an end, the FOMC in a dramatic step replaced the funds rate with nonborrowed reserves as its operating instrument, in part to prove its heightened resolve to control monetary expansion. The Committee laid out for the public the basic principles of the new operating procedures in some detail. Although the FOMC used this instrument to slow the trend growth of M1 over the next three years and inflation responded, in the end the vagaries of M1 demand proved to be the undoing of operating on nonborrowed reserves.

The Committee replaced nonborrowed reserves with borrowed reserves in its operations at some point in the fall of 1982, after it had effectively abandoned targeting slow M1 growth as its policy design principle at midyear. In contrast to the October 1979 step, the switch in operating procedures was not immediately described publicly—indeed, it was not described until April 1984. The Committee’s downplaying of M1 targeting in the second half of 1982 and its subsequent dropping of nonborrowed reserves could have been defended with solid analytic reasons, and Chairman Volcker did explain part of the case for the discontinuation of M1 targeting. However, had the revised operating procedures and their rationale been fully laid out at the time, they might well have been interpreted on superficial examination as representing a wholesale reversion to the failed approach of the 1970s. These points are offered not to excuse the FOMC’s lack of transparency at the time but rather to warn about the problems that even a justified reform can pose for public relations if an opposing point of view has a significant following.

The FOMC was more forthcoming in later years about switching its operating target from borrowed reserves to the federal funds rate—temporarily after the stock market crash in October 1987 and permanently after Thanksgiving 1989. Even so, for a few years some FOMC statements were elliptic in describing the funds rate target. The obscurity evidently did no harm because the intended funds rate became clear, generally in a day or two, from the operations of the Trading Desk.

The Setting of the Operating Target

In terms of transmitting to the public the specific setting of the operating target, in the 1970s the FOMC similarly relied on the signals imparted by Trading Desk operations, which sent a fairly transparent message. By contrast, the specific operating targets were not so apparent to outside observers in the regimes of both nonborrowed reserves in the early 1980s and borrowed reserves in the rest of the 1980s. The Desk’s signals about the intended funds rate again became easy to read in the first four years of the 1990s. The Committee moved to an immediate announcement of changes in its policy stance in early 1994.

In May 1999, the FOMC started to disclose immediately its “tilt,” or “bias,” which indicated its predisposition regarding possible future action. After experiencing some difficulty, the Committee replaced its tilt in early 2000 with the “balance-of-risks” statement, which encapsulated its judgment about the key probabilities in the macroeconomic outlook relative to its dual objectives. At the same time, an immediate announcement came to be issued after every

meeting whether or not the Committee had voted to make any changes; this overall announcement occasionally contained hints about the likelihood of possible future policy action.

The Disclosure of Detailed Deliberations

The Committee's disclosure practices regarding the details of its deliberations also have evolved over the years. In response to court decisions arising from the Merrill Freedom of Information Act suit in 1975, the FOMC decided that it would no longer communicate to the public a detailed accounting of its deliberative process. It discontinued the heavily edited but thorough "memoranda of discussion" of its meetings as of late March 1976; these memoranda had been released after five years. At the same time, it expanded the policy record and reduced the delay of the release to shortly after the subsequent meeting.

In 1993, Representative Henry B. Gonzalez (Democrat from Texas and chairman of the House Banking Committee) mounted an assault on the FOMC's disclosure policy regarding the detailed coverage of its meetings. The Federal Reserve instituted the current minutes of FOMC meetings. Then it acknowledged the existence of unedited transcripts going back in time, and subsequently it decided to release those transcripts, after light editing, with a five-year lag. Ultimately, the gap resulting from the discontinuation of the memoranda of discussion as of late March 1976 will be completely bridged by the release of these transcripts. Transcripts of subsequent meetings have also been released after the passage of five years.

The Principles of Policy Design

During the 1970s, the FOMC increased its emphasis on money, setting targets for monetary growth, with mixed results. Also, it evidently wished to act preemptively, though cautiously, to keep inflation contained while maintaining relatively full employment. That is, it evidently consulted forecasts of inflation and resource use in calibrating its policy stance, while adjusting that stance gradually. This approach foundered when the macroeconomic forecasts proved to be unreliable, the estimates of the NAIRU turned out to be much too low, and the Committee's policy responses remained behind the curve. Inflation gathered momentum, reaching a torrid pace by the end of the decade. Even then, the Committee did not take responsibility for the trend of inflation but rather pointed to the multiplicity of other influences on price behavior. Given this performance, Federal Reserve critics increasingly climbed aboard the monetarist bandwagon.

In October 1979, the FOMC in effect assumed responsibility for attaining long-run price stability by elevating monetary targeting; in so doing, it implicitly embraced Milton Friedman's aphorism that sustained "inflation is always and everywhere a monetary phenomenon." The FOMC attempted to control money growth in the intermediate term to attain a slow targeted trend rate consistent with much-reduced price increases, while downgrading gradual policy adjustment. This new approach slowed inflation to a jog, but in the context of a serious recession and unstable money demand. Nonetheless, many observers came to accept the Federal Reserve's assurance that, with a restrained trend of money growth, the average rate of inflation ultimately would fall appreciably.

While controlling money offered certain advantages for public relations, the monetarist promise proved to be elusive. In the event, Federal Reserve policymakers themselves doubted that steady M1 growth would produce short-term stability in the economy, in part because of the sizable unforeseen shifts in transactions demands for money. By mid-1982, the FOMC recognized that more policy flexibility than M1 targeting had afforded was required to counter depressed spending and its repercussions. The Federal Reserve realized not only that it could not live up to monetarist dogma but also that it would be better to stop trying. The FOMC previously might or might not have been a true believer; but in October 1982, it overtly started attending a different church.

Although at that time the FOMC publicly de-emphasized targeting M1 and the other aggregates in favor of a more eclectic approach, it evidently continued to design its policy stance in response to demand-side determinants of monetary expansion—inflation and real output growth. It apparently avoided committing the mistakes made in the 1970s of reliance on misleading forecasts, on optimistic NAIRU assessments, and on too cautious an adjustment of the funds rate. The FOMC's public statements continued to stress its anti-inflationary posture. Indeed, as the 1980s progressed, its policies restrained inflation to a walk, while supporting economic recovery. But to deflect criticism and associated political pressure to re-inflate, the FOMC was somewhat vague over most of the 1980s about the nature of its policy design as well as the structure of its policy implementation.

As political sentiment became more supportive of the ideas of price stability and central bank independence, the FOMC emerged from its shell. It became more and more transparent about how its policy was designed as well as implemented, in the process gaining additional public exposure. The FOMC through the early 1990s devoted some attention to M2 growth. But apparently starting in the late 1980s, it put renewed weight on likely resource use and the outlook for inflation relative to an implicit low objective while restoring a gradual adjustment of the funds rate target. The FOMC seemed to pursue this approach as the 1990s progressed. After the early years of the decade, official statements began to characterize policy design as mainly preemptive. In other words, the FOMC indicated that it attempted to counter potentially adverse future developments by moving its current funds rate target. By the middle of the decade, its policies had slowed inflation to a stroll.

As the second half of the 1990s passed, the uncertainties surrounding a step-up in productivity growth as well as a sequence of crises seemed to make the future somewhat harder to foretell. Because the Committee perforce had to focus a bit more on the present circumstances and peer a little less intently into the dimmer future, official statements put somewhat less emphasis on the outlook and relatively more on discerning the current situation. Accordingly, in recent years the Committee has left the public impression that in designing policy it has significantly weighed both estimated actualities and the macroeconomic outlook. Whatever its exact approach, the FOMC managed to bring inflation to a crawl, considering the residual upward measurement bias of price indexes and the desirability of having some “cushion” to protect against the zero bound on nominal interest rates.

PROLOGUE: AN EXCHANGE OF LETTERS

April 1, 1975

Honorable Arthur F. Burns
Chairman
Federal Reserve Board
Federal Reserve System
Washington, D.C. 20551

Dear Dr. Burns:

In the exercise of its constitutional mandate to oversee the formation and implementation of monetary policy, the Subcommittee on Domestic Monetary Policy requests the below-mentioned material.

Two items would be most helpful to the Subcommittee in this regard:

1. Unedited copies of the Minutes of the 1971, 1972, 1973, and 1974 meetings of the FOMC; and,
2. Uncensored copies of the original transcripts from which these Minutes were prepared.

Sincerely yours,
Wright Patman
Chairman

April 9, 1975

The Honorable Wright Patman, Chairman
Subcommittee on Domestic Monetary Policy
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are copies of minutes of actions of the Federal Open Market Committee for the years of 1971, 1972, 1973, and 1974.

These minutes are being supplied in response to your request of April 1, 1975.

Sincerely yours,
Arthur F. Burns

April 11, 1975

The Honorable Arthur F. Burns

...

Dear Dr. Burns:

This will acknowledge receipt of your reply to the request of the Subcommittee on Domestic Monetary Policy of April 1, 1975, for the following:

1. Unedited copies of the Minutes of the 1971, 1972, 1973 and 1974 Meetings of the FOMC; and,
2. Uncensored copies of the original transcripts from which these Minutes were prepared.

While I cannot believe you were not aware that this request was for something other than material already published in the Federal Reserve Bulletin, I would have thought the second item requested would have removed any ambiguity in the request.

To avoid any further misinterpretation, the request has been rephrased in what I trust is the technically correct and clearest possible language:

1. The Memoranda of Discussion of the 1971, 1972, 1973, and 1974 meetings of the FOMC; and,
2. The unedited materials from which these Memoranda were prepared.

What is requested, in other words, is material not scheduled for public release until 1976, 1977, 1978 and 1979, respectively, as well as the notes or transcripts from which these Memoranda are prepared.

Further, I would also appreciate receiving a detailed explanation of the procedures, if any, for precisely recording what transpires at the meetings of the FOMC. It is my understanding that three or four persons are present to take notes at these meetings and “try to get down the gist of what is said” as well as they can.

Is there any reason why a stenotypist or tape recorder is not employed so that a verbatim transcript can conveniently be made of the proceedings which is similar to those prepared for Congressional hearings?

Your gracious attention to this matter is appreciated.

Sincerely yours,
Wright Patman

◆◆◆◆◆

April 18, 1975

The Honorable Wright Patman

...

Dear Mr. Chairman:

I have your letter of April 11, 1975, requesting certain materials of the Federal Open Market Committee.

Your request for the memoranda of discussion for FOMC meetings in the years 1971-74, inclusive, will be considered by the Committee at its next meeting, to be held on May 20, 1975. I will inform you of the response of the Committee shortly after that meeting.

You refer to the "unedited materials from which these memoranda were prepared." These materials cannot be supplied because they are routinely disposed of after the Committee has formally accepted the memorandum of discussion for the meeting in question.

Over the years we have experimented with various means of recording the proceedings at meetings of the FOMC, including note-taking, stenotyping, and tape recording. Currently, we are employing a combination of note-taking and tape recording. In any event, the materials are disposed of when they have served their purpose, as noted above.

Sincerely yours,
Arthur F. Burns

June 3, 1975

The Honorable Wright Patman

...

Dear Mr. Chairman:

Your request for the memoranda of discussion for meetings of the Federal Open Market Committee ("FOMC") in the years 1971-74, inclusive, has been considered carefully by the Committee. In this connection, the FOMC has given full and deliberate consideration to the oversight responsibility that the Congress in general and your Subcommittee in particular have with respect to its functions and operations.

I might note at the outset that, apart from the memoranda which you request, there are three regularly available sources of information about the operations of the FOMC. One consists of weekly statistical releases published by the Board, which promptly and fully disclose the results of the Committee's open market operations. The most important of such weekly releases are the Federal Reserve Statement (H.4.1), the Weekly Summary of Banking and Credit Measures (H.9), and Money Stock Measures (H.6).

A second source is the record of policy actions, which is prepared pursuant to a requirement of the Federal Reserve Act. These policy records disclose the Committee's intentions with respect to open market policy, as reflected in the actions reported. They include all votes, by name, cast by members of the Committee in connection with the determination of open market policies; the reasons underlying the policy actions, including descriptions of then-current and prospective economic developments and of conditions in domestic and international financial markets; and statements of the reasons for any dissenting votes.

A third source, the minutes of actions indicates all votes taken by the FOMC--including those relating to procedural matters as well as those relating to policy questions. The minute entries for policy actions are made available for public inspection on the same schedule as the policy records; the minute entries for most other actions are made available promptly after the meeting.

To this copious body of information concerning the operations of the FOMC, the memoranda of discussion add essentially one further type of material: reports of the deliberations through which the Committee reaches its decisions on policy and procedural matters. As you are aware, there is no legal requirement that such memoranda of FOMC meetings be prepared. However, they have proved valuable to the FOMC and its staff in connection with the ongoing work of the Committee, and we believe they constitute a useful historical record. For these reasons, they are maintained by the Committee and made available to the public after a time lag determined by the FOMC.

The memoranda of discussion reflect the unfettered, spontaneous expressions of FOMC member views and opinions. Some of these expressions may be put forth primarily to elicit discussion and clarification of issues rather than as statements of firmly held views. Some may turn out to be inconclusive with respect to the FOMC's ultimate decisions, and others at odds with those decisions. All such expressions do, however, contribute to the decisional process.

The informal "give and take" debate at FOMC meetings, as substantially reflected in the memoranda of discussion, involves the decision-making process utilized by the legislative, executive, and judicial branches of our Government since the founding of the Republic. Each branch of Government daily encounters the situation where individual opinions and advice, expressed and conveyed in the decision-making process, are re-thought, altered, or reversed on the hearing of opinions and views of other participants. Premature public exposure of such deliberations, whether involving legislative, executive, judicial, or administrative bodies, preceding as they do the official decision and actions of such bodies, would quickly and certainly make such decisional process sterile. If the FOMC memoranda of discussion were to be released prematurely, the Committee would be faced with the choice of permitting a destructive diminution of candor in its deliberations or of preserving the members' ability to speak their minds freely and fully by terminating the preparation of such memoranda. Neither alternative would be in the public interest.

In addition, the matters commonly discussed at FOMC meetings include ongoing or prospective transactions in foreign exchange markets, the premature disclosure of which could

have both immediate and longer-term adverse impact on international flows of funds. Moreover, references are frequently made to highly sensitive matters involving, or statements by or about, foreign central banks and governments. Clearly continued FOMC access to such important and relevant communications must not be jeopardized by even a suggestion of untimely dissemination.

In view of these considerations, the Committee has concluded that it must respectfully decline to comply with your request for the 1971-74 memoranda of discussion.

The Committee's decision, premised in major part on its need to preserve the practice of free and uninhibited member contribution to discussions, reflects a legal position the concept of which was reaffirmed by the United States Supreme Court as recently as one month ago in the case of NLRB v. Sears, Roebuck, & Co., 95 S. Ct. 1504, 1516 (1975). Justice White, speaking for the Court with respect to the need to protect the decision-making processes of government agencies, cited the Court's earlier position that ". . . experience teaches that those who expect public dissemination of their remarks may well temper candor with a concern for appearances. . . . to the detriment of the decision-making process."

As Chairman of the Federal Open Market Committee I endorse whole-heartedly the foregoing principle.

Sincerely yours,
Arthur F. Burns

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I. THE SECOND HALF OF THE 1970s: RISING INFLATION AND OPERATING ON THE FUNDS RATE

Discontinuing the Memoranda of Discussion	3
Forming the subcommittee on the memorandum of discussion, February 17, 1976	4
Supporting the memorandum of discussion, March 15, 1976	5
Reversing field on the memorandum of discussion, March 29, 1976	6
Discontinuing the memorandum of discussion, May 18, 1976	7
Testifying before the Joint Economic Committee, June 30, 1976	8
Encouraging congressional efforts to protect memoranda of discussion, 1976–84	11
Communicating can't be in the ear of the listener, 1976–93	12
Releasing the Directive with a Delay and Altering its Content	14
Shortening the delay in the release of the policy record, March 18, 1975	14
Shortening further the delay in the release of the policy record, May 18, 1976	16
Introducing two-month monetary tolerance ranges and a permissible funds rate band in the operational paragraph, February 15, 1977	17
Noting the inapplicability of the Government in the Sunshine Act, February 15, 1977	18
Assessing the impact of immediate release on the directive, December 14, 1977	18
Asking for legislative relief, January 13, 1978	22
Winning the Merrill case, June 28, 1979	23
Complying with New Legislative Goals and Reporting Requirements	24
Adapting to the congressional resolution on reporting 12-month-ahead ranges, March 24, 1975 ...	24
Receiving multiple objectives in the Federal Reserve Reform Act of 1977, November 16, 1977 ...	27
Accepting the Humphrey-Hawkins Act, October 27, 1978	29
Picking the first calendar-year money and credit ranges, February 6, 1979	32
Compiling the first semiannual macroeconomic forecasts, July 11, 1979	32
Implementing monetary policy, 1969–79	33
Communicating monetary policy, 1969–79	38

I. THE SECOND HALF OF THE 1970s: RISING INFLATION AND OPERATING ON THE FUNDS RATE

As the decade of the 1970s wore on, the Federal Open Market Committee placed increasing emphasis in its operations on restraining monetary expansion. Although the closing part of the Domestic Policy Directive (directive) began to include tolerance ranges for growth of the aggregates that allowed such growth to affect the setting of the federal funds rate operating target, these procedures did not succeed in holding down money growth, given the Committee's specified limits on funds rate variation. The actual growth of either M1 or M2 breached the upper bound of the announced range in each of the last four years of the decade. At the same time, and seemingly not coincidentally, inflation continued to rise, to truly dizzying heights by the end of the decade.

This chapter recounts the evolution of the Committee's communication practices during this period. First to be examined is the FOMC's decision at its May 1976 meeting to stop preparing "memoranda of discussion" for disclosure after five years. Next to be covered is the FOMC's practice of releasing the Record of Policy Actions (policy record), which includes the directive, only after a delay. Then the focus turns to the implications for the FOMC of the congressional deliberations leading up to, and the final passage of, the Humphrey-Hawkins Act. The chapter finishes by reviewing the implementation and communication of monetary policy over the 1970s. Because changing personalities in leadership roles at the Federal Reserve and in the Congress have parts to play in our story, the chairmen of the FOMC and of the relevant congressional committees during the years covered in this paper are identified for easy reference in table 1.

Discontinuing the Memoranda of Discussion

At its meeting of May 18, 1976, the FOMC decided to discontinue the preparation of the memorandum of discussion (MOD) after its March 15–16, 1976, meeting. The MODs were a heavily edited but virtually complete narrative in the third person of each point made by each named speaker in the meetings of the FOMC. Since 1970 they had been released to the public after five years. The substance, though not the name, of MODs dated back to 1936.¹

1. The Banking Act of 1935 created essentially the current makeup of the Federal Open Market Committee. The act required the FOMC, as Allan H. Meltzer wrote, "... to keep a complete record of all action taken, the reasons for the action, and the votes. The record had to be published annually in the Board's report." Allan H. Meltzer, *A History of the Federal Reserve: Volume 1, 1913–1951*, University of Chicago Press: Chicago, 2003, p. 486, footnote 150. To comply with the act, the Board published the record of policy actions in the *Annual Report*. Starting with its first meeting on March 18, 1936, the FOMC also produced "minutes" that included initially in very summary form the comments of individual members. In contrast to the policy record, these minutes were kept entirely internal until 1964 (see footnote 104). They became increasingly detailed over the years, notably during the 1960s. With the passage of the Freedom of Information legislation in 1967, the FOMC decided to prepare a separate document, called "minutes of actions," which could be released to the public in response to FOIA requests and were, in any case, available to visitors in the Board's FOIA office. The FOMC's intent evidently was to avoid making the expansive version of the minutes publicly available before five years (with appropriate redactions even then). The minutes of actions were, of course, a new document, but the old expansive minutes continued to be produced, and despite the new name ("memorandum of discussion") in mid-1967, the document was identical in content to the

Forming the Subcommittee on the Memorandum of Discussion February 17, 1976

The FOMC's consideration of these issues had begun earlier. Indeed, the decision to discontinue the MODs was a ramification of a Freedom of Information Act (FOIA) request to the Board that was received on March 7, 1975, and brought by David R. Merrill, a student at Georgetown University Law Center. Merrill had argued that the policy records and all parts of the MODs for January and February 1975 had to be disclosed upon request.

When the Board turned down the request, Merrill went to court. After the District Court argument on January 29, 1976, Judge Joseph Waddy went part of the way toward Merrill's position regarding MODs, indicating that they were not entirely deliberative, as the FOMC had argued, and therefore not fully exempt from prompt disclosure under FOIA. Instead, reasonably segregable nondeliberative facts had to be disclosed upon request.² Though he issued the formal ruling on March 9, 1976, his decision had already been clear at the hearing in late January. The FOMC formed a subcommittee in February to consider an appropriate response:

At an FOMC meeting on February 17, 1976, during a discussion of possible implications of a present suit against the FOMC under the Freedom of Information Act, it was noted that the Committee might be ordered (in connection with this or subsequent suits) to make public parts or all of its memoranda of discussion promptly after the meetings to which they related. This Subcommittee was appointed to make recommendations regarding the course that should be followed with respect to the memoranda of discussion in light of that possibility.³

previous "minutes." Although MODs were fairly thorough, they were heavily edited. Critics on the outside suspected that some material was excluded, even beyond the redaction of sensitive information. Apparently, the drafters did take advantage at times of the available scope for selectivity. This possibility would explain the interest expressed by Representative Patman for any underlying transcripts (see the Prologue). The MODs continued to be released after five years until they were discontinued after the March 15–16, 1976, meeting. Thus, the memoranda of discussion and their identical predecessor document were produced for a period of forty years. The transcript successor will reach that age milestone in March 2016!

Apparently the issue of retaining files of stenographic transcriptions of FOMC meetings was raised at the beginning, in the autumn of 1935, before the first FOMC meeting in March of 1936. See Walker F. Todd, "Summary of findings from visits to Gerald R. Ford Presidential Library, Ann Arbor, Michigan," memorandum to persons interested in FOMC transcripts, July 1, 1994, p. 1; he cites a statement made by Professor Richard Shiming, Mankato State University, on July 1, 1994, about this issue. Todd also cites a telephone conversation with former Governor Robert Holland in June 1976 indicating that the Board's taping system was installed in 1966 at Arthur Broida's suggestion to William McChesney Martin, who was then Chairman (p. 3). However, that taping system was not used at FOMC meetings until much later. Normand Bernard recalls that the taping and transcribing of FOMC meetings did not begin until the latter part of 1973 or early 1974.

2. Stephen L. Siciliano, "Merrill v. Federal Open Market Committee, 443 U.S. 340 (1979), on remand 516 F. Supp. 1028 (D.D.C. 1981)," memorandum to Normand Bernard, October 27, 1992. As the next section will discuss, Judge Waddy also ruled against the FOMC on the issue of whether the Committee must publish the domestic policy directive immediately after the meeting at which it is adopted. However, unlike the first part of the case, which it accepted, the FOMC appealed this second decision.

3. Subcommittee on the Memorandum of Discussion (Messrs. Coldwell, Mayo, Partee, and Winn), memorandum to Federal Open Market Committee, March 15, 1976, p. 1.

Table 1
Chairmen of the FOMC and of the House and Senate Banking Committees, 1970-2003

Year and Congress	FOMC	House banking committee ¹	Senate Committee on Banking, Housing, and Urban Affairs
1970 (91st)	Arthur Burns	Wright Patman (D, Tex.)	John Sparkman (D, Ala.)
1975 (94th)	"	Henry Reuss (D, Wis.)	William Proxmire (D, Wis.)
1978 (95th)	William Miller	"	"
1979 (96th)	Paul Volcker	"	"
1981 (97th)	"	Fernand St Germain (D, R.I.)	Jake Garn (R, Utah)
1987 (100th)	Alan Greenspan	"	William Proxmire (D, Wis.)
1989 (101st)	"	Henry Gonzalez (D, Tex.)	Donald Riegle (D, Mich.)
1995 (104th)	"	James Leach (R, Iowa)	Alfonse D'Amato (R, N.Y.)
1999 (106th)	"	"	Phil Gramm (R, Tex.)
2001 (107th)	"	Michael Oxley (R, Ohio)	Paul Sarbanes (D, Md.) ² Phil Gramm (R, Tex.) Paul Sarbanes (D, Md.)
2003 (108th)	"	"	Richard Shelby (R, Ala.)

NOTE. Entries appear for each year in which the chairmanship of any of the three panels changed.

1. In the 107th Congress, the name of the House banking committee became the Committee on Financial Services; the earlier names of the committee, beginning with the 91st Congress, are as follows:

- 91st-93rd: Banking and Currency
- 94th: Banking, Currency and Housing
- 95th-103rd: Banking, Finance and Urban Affairs
- 104th-106th: Banking and Financial Services.

2. At the convening of the 107th Congress, on January 3, 2001, the membership of the Senate was evenly divided by party, but the Democrats controlled the Senate because the Democratic President and Vice President were still in office (and the latter, as President of the Senate, was able to break tie votes in that chamber); at that time the Democrats named Paul Sarbanes to head the banking committee. On January 20, 2001, when the Republican President and Vice President were sworn in, control of the Senate shifted to the Republicans, who named Phil Gramm to head the committee. On June 6, 2001, Senator James Jeffords, of Vermont, changed his affiliation from Republican to Independent and voted with the Democratic Caucus; the Democrats thus regained the majority in the Senate and again named Senator Sarbanes to head the committee.

Supporting the Memorandum of Discussion March 15, 1976

The Subcommittee on the Memorandum of Discussion finished its report just before the March 15-16 FOMC meeting. Out of concern about a possible requirement for prompt release of some or all of the MODs, the subcommittee recommended two changes: (1) cutting back substantially on detail about the projections and other assessments by the staff, and (2) providing each

member with the chance to edit the transcript of his or her remarks in the “go-around.” The subcommittee decided against proposing several other changes. Among other things, the subcommittee thought eliminating the MODs and expanding the record of policy actions by two or three paragraphs to better capture members’ views would be “undesirable, both because the memorandum is a useful document and because so sharp a change from current practice would probably lead to charges of ‘coverup,’ ” in a topical phrase (p. 3). During the FOMC discussion on March 15, “the sentiment of the Committee clearly was that with certain kind[s] of modifications that recommendations of their [subcommittee] be adopted.”⁴ The FOMC deferred a decision until the next meeting to allow time for further thought.

Reversing Field on the Memorandum of Discussion

March 29, 1976

So why did the FOMC reverse field quickly thereafter and discontinue the MODs? The answer is related to the increasing perception of a possible threat from, as well as the effort required by, Judge Waddy’s ruling in the Merrill Freedom of Information Act lawsuit against the FOMC. The Committee discussed these matters at a special meeting on March 29, in which Chairman Burns said he was giving serious thought to discontinuing the MODs.⁵ He was concerned about the chance of premature disclosure of at least some parts of future MODs. He must have thought that future FOIA requests could be common and that deciding on what were “segregable facts” could be burdensome and, in light of the inevitable follow-up questions, potentially embarrassing.⁶ In contrast, Governor Phillip Coldwell wondered whether separating segregable facts of requested MODs would really turn out to be all that time consuming; whether appreciably increasing the length of the policy record wouldn’t augment staff time and member debate; whether ending MODs wasn’t “overreacting to a potential mischief which might be down the road;” and whether it might be better to “wait until the mischief shows up” (pp. 19–20).

The day before the regularly scheduled April 20 meeting, Chairman Burns circulated a memorandum recommending that the MODs be dropped.⁷ He expressed concern about adverse implications for the work of the FOMC of premature disclosure even of only “segregable facts.”

4. Chairman Burns summarized the March 15–16 FOMC conversation with these words on March 29, 1976, according to the unedited transcript of the executive session of the March 29, 1976, “Special Meeting” of the FOMC, tape 1, p. 13. Also see the memorandum of discussion for the March 15–16 meeting of the FOMC, pp. 1–11.

5. It is fair to say that the FOMC was circumspect in its public acknowledgment of its consideration of the discontinuation of MODs. The March 15 memorandum from the subcommittee to the FOMC had a cover note requesting that the memorandum be returned to the secretary after the executive session on March 15 ended. The agenda for the March 29 meeting mentions as the first item only “Executive Session. Report on status of Freedom of Information suit.” The *Annual Report* contains no policy record for that meeting because no vote was taken, whereas the policy record for the regularly scheduled March 15–16, 1976, meeting briefly mentions the March 29 meeting only in connection with a separate issue (p. 205 of the 63rd *Annual Report* for 1976).

6. Unedited transcript of the executive session of the March 29, 1976, “Special Meeting” of the FOMC, tape 1, p. 15.

7. Chairman Burns, “The FOMC memorandum of discussion and policy record,” memorandum to Federal Open Market Committee, April 19, 1976.

He viewed adverse consequences as especially worrisome given the potential for a future court to second-guess the FOMC's selection of excluded material. Furthermore, complying with the recent court order had taken "a tremendous amount of time by our senior staff and a considerable amount of my own time" (p. 1). He went on to agree with a staff proposal to beef up the policy record so that the public would be "better informed" than under then-current procedures (p. 2). He also suggested shortening the delay in the release of the policy record from forty-five days to thirty days (p. 2).

The FOMC discussed these matters the next day, and Chairman Burns reiterated these reasons for discontinuing the MODs. Governor Coldwell again resisted, arguing for delay of the decision until the Merrill case was resolved. He also thought the MODs had been "marginally . . . helpful as a track record of the Committee."⁸ Nonetheless, the voting members of the FOMC reached a consensus in principle to discontinue the MODs and expand and accelerate release of the policy record.

Discontinuing the Memorandum of Discussion May 18, 1976

The Committee arrived at its official decision to drop the MOD in favor of an enhanced policy record at its next meeting, on May 18, 1976, with Governor Coldwell, the chairman of the subcommittee, casting a lone dissenting vote. He abstained from the vote to release the policy record on the Friday after the next Tuesday FOMC meeting.

On May 24, Chairman Burns held a press conference and announced the discontinuation of the MODs, saying they had proved to be of little use, as the press or students of economics had not consulted them with any frequency. The Committee's policy record for the May 1977 meeting stated the following:

This action was taken against the background of the Committee's decision to speed up publication of the records of policy actions, and of its understanding that the policy records would be expanded to include more information concerning members' views on longer-run and current policy. . . .

The decision to discontinue these memoranda reflected the Committee's judgment that the benefits derived from them did not justify their relatively high costs, particularly in light of the changes made in the policy record.

This was the stated reason for its vote. In the years that followed, others have offered alternative reasons:

But "that [stated reason] was a public position that obscured the real reason," recalled Washington banking lobbyist Kenneth A. Guenther, a special assistant to Burns at the time.

8. Unedited transcript of the April 20, 1976, executive session II of FOMC meeting, tape 9, p. 1.

The real reason? “We did it for the fear that Congress [and others] would request access” quite promptly, recalled Robert P. Black, a former president of the Richmond Reserve Bank who served on the FOMC from 1973-92. And that, Black said, raised the threat of legislative efforts to overturn FOMC decisions.⁹

Whatever the reason, the decision roused the ire of several important critics of the Federal Reserve System.

**Testifying before the Joint Economic Committee
June 30, 1976**

At a Joint Economic Committee hearing on June 30, 1976, Senator William Proxmire and Representative Henry Reuss, chairmen of the respective congressional banking committees, strenuously objected to eliminating the MODs.

Chairman Burns argued that the Memoranda of Discussion were hardly being used and the policy record was being followed very closely, and the FOMC had decided to put more effort into the monthly policy report.

Reuss said that the policy record was sanitized, bland and uninformative, and complained that no names were mentioned[, w]hereas he and Sen. Proxmire found the Memoranda of Discussion “invaluable.” He felt that the FOMC had taken a great step backward and he repeated his request that the FOMC reconsider its actions.¹⁰

During the June 30 JEC hearing, the following exchange occurred:

Representative Reuss. Let me ask you, under the decision of May 18, to discontinue the “Memoranda of Discussion,” does that mean that the Open Market Committee is discontinuing its practice of keeping a record of discussion which, as I understand it, is done both by a stenographic reporter and by electronic methods? Is there any change in that?

Dr. Burns. I should know the answer to that. At the moment I am simply not sure.

9. Paul Starobin, “The Fed Tapes,” *National Journal*, LEGI-SLATE Report for the 103rd Congress, December 17, 1993, p. 4; the bracketed words in the first paragraph are mine, but those in the second paragraph are in the original.

10. From Don Winn, draft memorandum on “a history of the Congressional consideration of the release of detailed minutes of the FOMC after a lag of three or more years,” October 5, 199[3], p. 1 of attachment. The FOMC did revisit the issue at its July 19–20, 1976, meeting but reaffirmed its previous decision with an identical vote.

Representative Reuss. Would you be good enough to supply that for the record?

Dr. Burns. I will.

The following information was furnished for the record by Chairman Burns:

The discussions at meetings of the Federal Open Market Committee are recorded electronically. No stenographic reporter is present. A few members of the staff take some long-hand notes during the meeting, primarily to help the typists who transcribe the tapes to identify those speakers whose names are not called before they speak.

These procedures were not changed at the time the Committee decided to discontinue the memorandum of discussion.

The transcriptions are used by the Secretariat in drafting records of the meetings, and are routinely disposed of after they have served their purpose. The tapes are reused in recording subsequent meetings.

This is a passage that bears parsing. The words of the next-to-last sentence in the quotation echo Chairman Burns's April 18, 1975, reply to Representative Patman quoted in the Prologue—"routinely disposed of" in the letter's third paragraph and "they have served their purpose" in the letter's fourth paragraph. Of course, no longer could Chairman Burns mention MODs explicitly since the FOMC had just discontinued them. But he probably hoped that congressional efforts to craft statutes to protect MODs or lightly edited transcripts from premature disclosure would bear fruit. In fact, the Congress did attempt over the next seven years to protect such information from premature disclosure. Had the Congress been successful, Chairman Burns would have known that unedited transcripts would be invaluable in preparing either alternative, and until the Congress could craft such statutes, the transcripts would not "have served their purpose." Chairman Burns's use of the word "are" in "are routinely disposed of" in his response to Representative Reuss is harder to understand because, as we now know, the transcripts were preserved. Possibly he assumed when he sent the response that Arthur Broida (the secretary of the FOMC) would continue to destroy the transcripts after the policy records had been published (they had by then been published for the April and May meetings of 1976). If so, he and the drafter of the response would have assumed that such a procedure was taking place, without checking with Broida to learn that these transcripts in fact had not been (and never were) discarded. Or perhaps Broida, if indeed he was asked, responded that he just had not gotten around to disposing of the two transcripts but intended to do so soon enough. Only later, on either alternative interpretation, would Chairman Burns and Broida have decided to keep them. In any event, Chairman Burns decided to retain them.

[T]he current record-keeper, Normand R.V. Bernard, who was assistant to Arthur L. Broida in 1976, said Broida told him that "Burns made that decision" to keep the transcripts. "It was a more important decision than a

staffer would undertake to make,” Bernard said. “Burns knew,” [Murray] Altmann [Deputy Secretary of the FOMC] seconded.¹¹

According to [Joseph] Coyne and Stephen H. Axilrod, an FOMC economist in 1976 who shortly thereafter became its staff director, transcripts were kept because of the possibility that Congress would order revival of the memorandum of discussion with an explicit FOIA exemption.¹²

Why didn't Chairman Burns subsequently take the initiative to state publicly that the transcripts existed? The answer probably was that he soon forgot about the issue. But he may have realized that, if the existence of the growing store of unedited transcripts in the Secretariat's files had been publicly appreciated before passage of protective legislation, then they would have been subject to FOIA requests. Similar FOIA requests had eaten up time in the Merrill case, even though in that instance the FOMC had had to release only “segregable facts.” Still, fulfilling the request had been time-consuming, and no one could be sure that, without such a statutory safeguard, another court in the future would not require immediate full disclosure. Alternatively, a Congress that knew of the transcripts' existence could demand or, with more certainty that they would have to be relinquished, subpoena them.

The Congress did show considerable interest in preserving detailed minutes. Representative Stephen Neal (Democrat from North Carolina) had been chairman of the House Subcommittee on Domestic Monetary Policy in 1976 and

had initiated a survey on September 17, 1976, of 122 persons including former Fed Governors, Reserve Bank Presidents, Class C Directors, and prominent business and academic economists.

Neal reported that “We received 81 responses, of which the vast majority were opposed to the discontinuation of the FOMC's detailed minutes.[”] (The final tabulation was 55 opposed, 15 in favor, 2 undecided and 9 no comment.)

According to Neal, among the 55 individuals who opposed the FOMC's decision were six former top level Federal Reserve officials--Governors Maisel, Daane, Bucher and Robertson, and two former Presidents of the New York Federal Reserve Bank, Sproul and Hayes.

“Through reading their letters,” said Neal, “as well as the thoughtfully considered responses of the other respondents, it became clear to me that we should reinstate the practice of keeping detailed minutes of FOMC meetings and publish them after a lag of no more than three years.”

11. Paul Starobin, “The Fed Tapes,” p. 3.

12. Paul Starobin, “The Fed Tapes,” p. 5.

Neal's statement . . . is filled with quotes from responses to the survey addressing such issues as the timing of disclosure; whether verbatim minutes are needed or will detailed memoranda serve; the pros and cons of attributing individual remarks; the importance of detailed minutes for research, and their importance to Congressional oversight.

(With respect to Verbatim transcripts or Memoranda of Discussion, "Overwhelmingly, they favored reinstating the Memoranda of Discussion (38 for Memoranda, 9 for Verbatim minutes, 8 ambivalent between the two).")

(With respect to the appropriate time lag before release: "Of those who commented on this question, 19 preferred 5 years or more, 5 preferred 3 to 5 years, 2 preferred 2 to 3 years, 4 preferred 2 years, 2 preferred 1 to 2 years and 12 preferred one year or less." So a majority preferred 3 or more years.)¹³

Encouraging Congressional Efforts to Protect Memoranda of Discussion 1976–84

The Congress also took several actions from 1976 into 1984 to try to legislate adequate protection against the premature release of mandatory detailed minutes in the form of either MODs or lightly edited transcripts. Indeed, the House Domestic Monetary Policy Subcommittee held hearings and acted on bills on four different occasions: 1979, 1980, 1981, and 1983 extending into 1984. The House Banking Committee approved the legislation in 1979 and 1983–84. Such legislation passed the House of Representatives in 1979, when it also was approved by the Senate Banking Committee, but it did not pass the Senate.

In testimony on several occasions, Board members supported or at least did not oppose these bills, with Chairman Volcker offering the last statement on October 18, 1983:

In our judgment, the detailed minutes in question would not add substantively to the information now being made available to the public about the nature of our policy decisions, but the Board understands the desire to establish a more detailed record that might be of future interest to historians, economists, and other close students of monetary policy. Accordingly, the Board has no objection to the preparation and eventual release of such minutes provided a suitable period of time has elapsed.¹⁴

But the legislative efforts ceased after no bill made it through the Ninety-eighth Congress. In the end, no legislation was passed.

13. Don Winn, draft memorandum, October 5, 199[3]; the underlining is in the original.

14. Paul A. Volcker, "Statement," before the Subcommittee on Domestic Monetary Policy of the Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, October 18, 1983, *Federal Reserve Bulletin*, November 1983, p. 841.

Communicating Can't Be in the Ear of the Listener 1976–93

The existence of the unedited transcripts going back to late March 1976 was revealed in testimony by Chairman Greenspan in October 1993. In the event, members of the Congress and academics were especially troubled. Representative Stephen Neal, for example, was

widely regarded as one of the Fed's best friends on Capitol Hill.

But when asked about the Fed's failure to disclose that transcripts of the meetings were being kept, he said: "They should have told me. We should expect people to tell us the truth. . . . I don't appreciate it."

Neal joins a growing crowd of people who say that revelation of the transcripts' existence raises questions about the Fed's integrity. . .

"What the Fed has always had, even in the minds of its harshest critics, is a sense of integrity about how it goes about its business," said Donald F. Kettl, author of *Leadership at the Fed* (Yale University Press, 1986). Disclosure of the transcripts' existence "tarnishes some of the special images that the Fed has spent 80 years trying to create," he said.

Kettl's book, which was based on extensive interviews with Fed officials, asserted that the FOMC had "ended its transcripts" when it stopped preparing the memorandum of discussion. Now, the historian has harsh words for the Fed. "If they didn't lie to me, they clearly allowed me to proceed on the false assumptions that they planted themselves," he said. . . .

In an interview, [Chairman G. William] Miller said he was aware the Fed kept FOMC transcripts but never gave the matter much thought.

"I didn't start the policy," he said, and thus if historians, economists and others now feel misled, "they weren't misled by me. . . . It sounds to me like academicians who are outraged because they weren't let in on the inside." . . .

But [Joseph] Coyne said there was "no conspiracy" to keep the transcripts secret. Their existence was unknown only because "nobody asked for them," he said, adding that they would probably put readers to sleep. . . .¹⁵

A former aide to the House Banking Subcommittee on Domestic Monetary Policy added: "We never asked the question, 'Do you make a written copy of the tape?' so nobody ever lied to us."¹⁶

15. Paul Starobin, "The Fed Tapes," pp. 1–6. I have reordered some of the paragraphs.

16. Paul Starobin, "The Fed Tapes," p. 6.

Chairman Burns, whose term expired in 1978, gave his papers covering his years at the Federal Reserve Board to the Gerald R. Ford Library on October 30, 1981, with the following agreement:

Materials which have been placed under seal as herein provided shall be reviewed by the Archivist from time to time and the seal removed from any papers which, because of the passage of time or other circumstances, no longer require such restrictions. The confidential materials of the Federal Open Market Committee of the Federal Reserve System shall not be made available for research until January 1, 2000 unless permission is granted by the Donor or, in his absence, by Arthur L. Broida. . . .¹⁷

In the course of research on his 1986 book, Donald R. Kettl studied the publicly available Burns papers at the Ford Library, according to the book's preface (pp. x–xi). Presumably after his visit there, and perhaps stimulated by that visit, a summary description was “completed and placed in [the Ford Library's] research room” in September 1985 and revised in July 1987, “as the first portions of the collection were released to the public. . . .”¹⁸ The series description read in part:

G-I Federal Open Market Committee Files (3 series). 1971-78. (23 linear feet)

Minutes of actions, memoranda of discussion, transcripts of meetings, and background material compiled for FOMC meetings. Unprocessed and closed.¹⁹

This description implies the existence of two years of transcripts of FOMC meetings—from late March 1976 through March 1978, the end of Chairman Burns's collection. (Chairman Burns's store of transcripts could not have started before late March 1976 because, under the previous policy, the transcript was destroyed once an MOD had been prepared.) Even though this information was in the public domain, no one connected the dots. Meanwhile, the transcripts gathered dust—until January 14, 1994, that is, when the boxes were opened at the discretion of the archivist of the Ford Library six years before they were due to be opened. Chairman Burns and Arthur Broida had died, and so the archivist apparently decided to accede to the request of the House Banking Committee staff, even though the premature opening was at odds with the intent of the written agreement with Chairman Burns, the donor. The staff of the House Banking Committee thus gained access to transcripts.²⁰

17. “Gift of Papers and Other Historical Materials of Arthur F. Burns to the Gerald R. Ford Library,” p. 1.

18. David A. Horrocks, Supervisory Archivist, Gerald R. Ford Library, letter to Gary P. Gillum, January 28, 1994.

19. “Summary Description,” prepared by Sandra Rauf Mitchell, September 1985, and revised by Karen Rohrer, July 1987, p. [5].

20. Walker F. Todd, “Summary of findings from visits to Gerald R. Ford Presidential Library, Ann Arbor, Michigan,” memorandum to persons interested in FOMC transcripts, July 1, 1994, p. 3.

Two questions remain unanswered: Why did Chairman Burns take photocopies of unedited transcripts with him when he left the Board, an action that was contrary to FOMC regulations? And why did he donate them in 1981 to the Ford Library along with his other papers? The grave has closed the possibility of learning the answers.

Releasing the Directive with a Delay and Altering Its Content

The other issue that the Committee confronted was whether it would be able to release its directive, along with the entire policy record, with a substantial delay.

Shortening the Delay in the Release of the Policy Record

March 18, 1975

The January 20–21, 1975, policy record that Merrill requested, along with the one for February, ended with the following two paragraphs, in which the FOMC added the new reference to “developments in domestic and international financial markets”:

In light of the foregoing developments, it is the policy of the Federal Open Market Committee, while resisting inflationary pressures and working toward equilibrium in the country’s balance of payments, to foster financial conditions conducive to cushioning recessionary tendencies and stimulating economic recovery.

To implement this policy, while taking account of the forthcoming Treasury financing, developments in domestic and international financial markets, and the Board’s action on reserve requirements, the Committee seeks to achieve bank reserve and money market conditions consistent with more rapid growth in monetary aggregates over the months ahead than has occurred in recent months.

When Merrill made his FOIA request for the January and February 1975 policy records and MODs, which was received at the Board on March 7, 1975, the FOMC’s practice was to wait ninety days to release the abbreviated policy record, which included the directive. A letter from Chairman Burns to Senator Proxmire on August 17, 1972, had introduced the reasons for the delay with the following words:

The decision to release the record approximately 90 days after each FOMC meeting was made in 1967, and was thoroughly reviewed in February of 1971. The reasons for deferred publication set forth in the FOMC’s rules regarding availability of information are that earlier disclosure might--

Before quoting from the FOMC rules to give the reasons, as this letter from Chairman Burns to Senator Proxmire proceeded to do, it is worth noting the last word— “might”—in the preceding quotation from the letter. Just below is the exact quotation from the FOMC’s rules regarding

information, with the introductory sentence as it actually appeared, ending in the word “would”.²¹

(B) Reasons for deferment of availability—Publication of, or access to, certain information of the Committee may be deferred because earlier disclosure of such information would--

- (1) interfere with the orderly execution of policies adopted by the Committee in the performance of its statutory functions;
- (2) permit speculators and others to gain unfair profits or to obtain unfair advantages by speculative trading in securities, foreign exchange, or otherwise;
- (3) result in unnecessary or unwarranted disturbances in the securities market;
- (4) make open market operations more costly;

21. Karl Brunner advanced an analysis from the empiricist perspective originally propounded by the philosopher Karl Popper of the Federal Reserve’s proclivity to use “weasel words” like “might” that render theories so stated impossible to disconfirm. In his review of Lyle E. Gramley and Samuel B. Chase, “Time Deposits in Monetary Analysis,” *Federal Reserve Bulletin*, October 1965, Brunner wrote in “Monetary Analysis and Federal Reserve Policy,” in Karl Brunner, ed., *Targets and Indicators of Monetary Policy*, 1969, Chandler Publishing Co: San Francisco, pp. 271–72:

Most of the propositions stated by the authors use qualifying modality terms such as “maybe,” “it is possible that,” or “possibly.” The judicious use of these terms conveys a sense of balanced realism. The truth is that possibility or maybe statements possess little information value from a logical and nonpragmatic point of view. Frequently, the application of possible or maybe to a given sentence S or its denial -S yields equally valid sentences in all cases where S is an empirical sentence. The pragmatic situation differs radically, however. The way a modality term is used by an author exerts a strong suggestive force on the reader. For instance, most readers would feel that “maybe S” assigns more relevance to S than to its denial, -S. It conveys a suggestive force of meaningfulness and empirical content where none exists. The judicious exploitation of modalities thus enables a writer to formulate sentences that cannot be falsified, but induce a response in the reader that attributes content to the particular application of the modality term.

Our critical examination of the authors’ arguments, developed earlier, proceeds on the assumption that the application of the qualifier “maybe” reflects an attitude assigning significance to the sentence selected. Of course, the writers have an opportunity to retreat on the purely logical status of modality and argue that the criticism is really beside the point; they did not actually assert the proposition--they only indicated a possibility. The reader will note that all statements we quoted, with one exception, are “maybe” sentences. And of course, maybe it is so, but of course again, maybe it is not so. On logical grounds the authors can plead complete safety from our criticisms. But if this is their plea, then they should pay the associated price, namely to have said nothing.

(5) interfere with the orderly execution of the objectives or policies of other Government agencies concerned with domestic or foreign economic or fiscal matters; or

(6) interfere with, or impair the effectiveness of, financial transactions with foreign banks, bankers, or countries that may influence the flow of gold and of dollar balances to or from foreign countries.²²

Chairman Burns's August 12, 1972, letter did raise the possibility of a shorter delay in release of the policy record, including the directive (p. 2):

The FOMC might at some point decide that a lag somewhat shorter than 90 days would be serviceable as a regular matter; but I believe that release within a few hours or a few days after each meeting would seriously hinder the Federal Reserve in carrying out its policies.

On March 11, 1975, four days after Merrill's request arrived, the staff sent a memorandum to the FOMC for its March 18 meeting, recommending a reduction in the lag for publishing the policy record from ninety days to about forty-five days.²³ At its meeting, the Committee then agreed with this recommendation, and on March 24, 1975, it announced the shortening of the lag to forty-five days.²⁴

In the second of the two-pronged decision in District Court on March 9, 1976, Judge Waddy agreed with Merrill and mandated a release of the domestic monetary policy directive immediately after the FOMC meeting. The FOMC appealed this part of the ruling.

Shortening Further the Delay in the Release of the Policy Record

May 18, 1976

When the FOMC discontinued the MODs, it also altered the timing and content of the policy record.

The changes in the policy record approved at the meeting involved shortening the publication lag from 45 days to "shortly after the next regularly scheduled meeting." In 1976 the Committee was meeting on a monthly schedule and the

22. Rules Regarding Availability of Information (12 CFR 271), Section 271.5--Deferment of Availability of Certain Information, as amended effective March 24, 1975, p. 6. In a couple of historical ironies, the words surrounding the double dash punctuation ("--") will reappear in our story in Chairman Greenspan's hearing before Representative Gonzalez on October 19, 1993, as will the distinction between "would" and "might" in the "tilt" wording of the directive from November 15, 1983, to December 22, 1998.

23. The [Federal Reserve Board] Staff, "Proposed reduction in lag for FOMC policy records," memorandum to Federal Open Market Committee, March 11, 1975.

24. According to the *Federal Reserve Bulletin*, April 1975, p. 261, the announcement noted: A delay of approximately 90 days had been in effect since mid-1967 when the rules were changed to comply with the Freedom of Information Act. Prior to 1967, the records of policy actions were published only in the Board's Annual Reports to Congress.

new rule had the effect of shortening the publication lag to about 30 days or occasionally to around 35 days, depending on whether this intermeeting interval was 4 weeks or 5 weeks. At this meeting, the FOMC also decided that “policy records would be expanded to include more information concerning members’ views on longer-run and current policy.” As a result, the length of the typical policy record was more than doubled.²⁵

Introducing Two-Month Monetary Tolerance Ranges and a Permissible Funds Rate Band in the Operational Paragraph

February 15, 1977

Although the FOMC had specified in the policy record two-month ranges for growth of money and, for a time, the bank credit proxy, throughout much of the 1970s these items were omitted from the directive. The FOMC made a major change in the wording of the last part of the directive in mid-February 1977.

Beginning with the February 1977 meeting, the Committee modified the operating instructions to the Manager in the directive to include specific two-month growth rates for M1 and M2 consistent with the annual growth ranges reported to Congress. The directive also stated the permissible range . . . and the conditions that would give rise to changes in the federal funds rate.²⁶

This directive ended with the following language:

The Committee seeks to encourage near-term rates of growth in M1 and M2 on a path believed to be reasonably consistent with the longer-run ranges for monetary aggregates cited in the preceding paragraph. Specifically, at present, it expects the annual growth rates over the February-March period to be within the ranges of 3 to 7 percent for M1 and 6½ to 10½ percent for M2. In the judgment of the Committee such growth rates are likely to be associated with a weekly average federal funds rate of about 4⅝ to 4¾ percent. If, giving approximately equal weight to M1 and M2, it appears that growth rates over the 2-month period will deviate significantly from the midpoints of the indicated ranges, the operational objective for the federal funds rate shall be modified in an orderly fashion within a range of 4¼ to 5 percent.

If it appears during the period before the next meeting that the operating constraints specified above are proving to be significantly inconsistent, the Manager is promptly to notify the Chairman who will then decide whether the situation calls for supplementary instructions from the Committee.

25. Normand Bernard, “Reasons for Discontinuing Memorandum of Discussion in 1976 and Later Congressional Efforts to Reinstating It,” memorandum to Federal Open Market Committee, October 28, 1992, p. 2.

26. Bonnie Garrett, “The FOMC Directive as a Guide to Intermeeting Adjustments to the Operations of the Account Manager,” memorandum to Governor Ferguson, September 28, 1999, p. 4.

The sense of these last two paragraphs, and even many of the words themselves, stayed the same until the meeting of October 6, 1979, and the width of the specified funds rate range varied between 1/4 percentage point and 1 percentage point during that time.

Noting the Inapplicability of the Government in the Sunshine Act February 15, 1977

Following an extended debate, the Government in the Sunshine Act was enacted into law on September 13, 1976. The policy record for the February 15, 1977, FOMC meeting also contained the following exemplar of belated understatement:

From time to time at recent meetings the Committee had discussed the applicability of the Government in the Sunshine Act to its meetings. At this meeting the Committee concurred in an opinion of counsel that the act would not apply because the Committee did not come within the definition of “agency” contained in the act. The Committee further agreed that its present procedures and disclosure policy were already conducted in accordance with the intent and spirit of the act and that its current practices in that regard would be continued.

One such previous discussion had taken place at the May 18, 1976, meeting of the FOMC. The unedited transcript, despite its rough edges, makes abundantly clear the reason for not publicly mentioning this act until it had become law (see exhibit 1, the reproduced transcript, on pp. 20–21).²⁷

Assessing the Impact of Immediate Release on the Directive December 14, 1977

On November 10, 1977, the Court of Appeals for the District of Columbia ruled in Merrill’s favor, mandating immediate release of the directive. Then in mid-December 1977, the Subcommittee on the Directive sent a memorandum to the FOMC considering “what changes, if any, should be made in the FOMC’s directive in the event that the Court’s order requiring immediate publication becomes effective.”²⁸ The memorandum gave the pros and cons of nine alternatives, but in the end it recommended (pp. 1–2) that if the directive had to be released right away, then the Committee should retain

27. Unedited transcript of the executive session of the May 18, 1976, FOMC meeting, tape 1, pp. 4–5. (CB is Chairman Burns, MacLaury is President Bruce MacLaury of the Federal Reserve Bank of Minneapolis and TJOC is Thomas J. O’Connell, General Counsel of the FOMC.) This meeting is the first not to have a memorandum of discussion prepared. Therefore, the unedited transcript presumably has been available to the public in its current unedited state since January 14, 1994, at the Ford Library, as discussed above. The lightly edited version will be released by the Board to the public when the process of light editing going back in time is completed. As of May 2003, lightly edited transcripts back to 1981 have been released to the public.

28. Subcommittee on the Directive (Messrs. Eastburn, Gardner, Partee [Chairman], and Volcker), “Implications for Directive of Immediate Publication on Adoption,” memorandum to Federal Open Market Committee, December 14, 1977.

the present procedure for the time being. The subcommittee recommends, however, that an instruction to take account of financial market conditions be added to the penultimate paragraph of the directive to provide the flexibility the Manager may need in the new environment created by immediate publication. Also, the subcommittee suggests that, at least initially, the width of the funds rate range ordinarily be held to about ½ of a percentage point, recognizing this could increase the likelihood of inter-meeting telephone or telegraphic modification. (The funds rate range has in practice been ½ percentage point wide in recent directives.)

To avoid publication of the long-run ranges before the Chairman's semiannual testimony should the directive be immediately released, the subcommittee (pp. 13–15) advocated that the Committee delay the final decision on them until a conference call just before the Chairman's testimony.

Finally (p. 15),

[t]he subcommittee considered the procedure that might be follow[ed] for revealing votes of individual Committee members if prompt publication of the directive is mandated. Counsel for the Committee has advised that an affirmative response would be required for any request for identification of individual votes on the directive properly submitted under the Freedom of Information Act (Section 552 (a) (5)). While the FOIA grants a maximum period of 10 days within which to respond to a request for agency records, there would appear to be no logical reason to defer for 10 days the identification of votes on the Committee's directive when the directive itself was released on the day of its adoption. There is little doubt that there would be immediate requests for the votes.

At the Committee meeting of December 19–20, 1977, a couple of members took in stride the prospect of immediate disclosure of the policy record.

Mr. Eastburn. . . I happen to feel that we not only can live with the kind of solution that this report recommends but we may actually improve the functioning in the open market operations. . . .²⁹

Mr. Volcker [then president of the Federal Reserve Bank of New York]. . . . [P]resumably the . . . decision [to make public the federal funds rate] would come at a time when we would have otherwise changed the federal funds rate anyway and they would have seen it in the market, now they will see it out of

29. Unedited transcript of the executive session of the December 19–20, 1977, FOMC meeting, tape 1, p. 25.

20

A Modern History of FOMC Communication: 1975--2002

5/18/76 Exec. Ses. Exhibit 1
 Tape 1 -4-

 questions
to address specific/~~that~~ members of the Committee may have. The questions may be directed to Mr. Broida, to Mr. O'Connell, or to me. Is there any questions?

CB Yes, Mr. MacLaury.

MacLaury ~~Thank you Mr. Chairman.~~ Thank you Mr. Chairman. I've been thinking about Sunshine in Government today and in that context my wonder is that were the bill pass as it presently is being proposed, am I correct in thinking that we would be required to keep a verbatim transcript and if so, wouldn't that make ^{moot} ~~sure~~ this question of whether we drop the memorandum of discussion? That's my question.

CB I'm going to turn this over to Mr. O'Connell.

TJOC Mr. Chairman, in the present wording of the bill, we hope to be able by liberal interpretation of that language, if it isn't changed from present wording of both Senate and House version of the Sunshine Bill, President MacLaury, to assert that the Sunshine legislation is not applicable to the FOMC.

CB Let me just interrupt. I think this is a statement that literally should be kept to ourselves. We should not--no member of the Committee should discuss that ~~+~~ with any of his aids or anyone else at any time because we run the risk of amendment that might make life a good deal more difficult for us.

TJOC Yes sir. At this time it has not been discussed by anyone.

I. The Second Half of the 1970s

21

5/18/76 Exec. Ses. Exhibit 1 continued
 Tape 1 -5-

There had been many ~~xx~~ allusions, I think perhaps loosely used, Mr. MacLaury to applicable to the FOMC. Some in defense of our position that it should not be covered. We haven't asserted applicability to the FOMC. Our position has always been the/trouble with this bill. Others have converted that to use ~~xx~~ of the term FOMC. Assume for a moment thought, that it is held to be applicably either by an amendment in the language if that occurs or by Court decision, and ~~xxxxxxxxxx~~ if thus this Committee is subjected to the provisions of the FOMC Sunshine Bill ~~xx~~ has finally passed, if it is in any form paralleling that of its present language, meetings the Committee would be subject to the transcript requirements of verbatim transcript with the requirement that the portion that is not exempt ~~from~~ under one of the ten exemptions now in the bill, if they follow through, be made immediately available to the public. The balance, if it fits any of the exemptions can be deleted and withheld by the Committee, but the verbatim transcript would be required.

Broida May I add. The memorandum of discussion, of course, is a rather different document ~~xxxx~~ from a verbatim transcript that's condensed and written in the third person and presumably a more efficient record of/meeting. But, and also the verbatim transcript under the bill as I understand it, the parts that are not made public need be held only for 2 years and need never be made public. Whereas,

our mouths as well as in the market which changes it somewhat, but I don't think it changes it from night to day.³⁰

...
Mr. Roos. . . . What is the dangerous consequence of having a free movement of interest rates[?]. . .

One salutary effect of this Merrill decision . . . is . . . forcing us to actually consider some fundamental policy questions such as the relative weight that we place on targeting . . . interest rates, vis `a vis the weight that we give to achieving the ranges of aggregate growth.³¹

The consensus of the Committee, though, was that gradual interest rate moves, which would result from central bank probing in financial markets, were preferable to abrupt changes. The Committee thought that this outcome would be more likely with a delayed release of the directive.

Asking for Legislative Relief

January 13, 1978

After the decision of the Court of Appeals on November 10, 1977, and the discussion at the FOMC meeting on December 19, Chairman Burns asked Senator Proxmire for legislative relief from the requirement for immediate disclosure of the directive. A letter dated January 13, 1978, said (p. 3):

Specifically, the FOMC respectfully requests that there be introduced in Congress a bill that would require deferral of any public release of the FOMC's Domestic Policy Directive including its tolerance ranges, until approximately one month after adoption--that is, until shortly after the next regular meeting of the FOMC.

We would suggest the following language:

Section 10, paragraph 10 of the Federal Reserve Act (12 U.S.C. 247a) is amended by inserting at the end of the first sentence the following: Provided, however, that the Domestic Policy Directive issued by the Committee for the guidance of System open market operations, and amendments thereto, shall be withheld by the Board, the Committee and the Federal Reserve Banks from disclosure to the public until three days after the next regular meeting of the Committee.

30. Unedited transcript of the executive session of the December 19–20, 1977, FOMC meeting, tape 2, pp. 5–6.

31. Unedited transcript of the executive session of the December 19–20, 1977, FOMC meeting, tape 2, pp. 15, 16–17.

Upon enactment of such legislation, the FOMC would be in a position to rely upon exemption (3) of the Freedom of Information Act, 5 U.S.C. 552(b) (3), which provides that an agency may withhold from public disclosure matters that are “specifically exempted from disclosure by statute . . . provided that such statute (A) requires that the matters be withheld from the public in such a manner as to leave no discretion on the issue, or (B) establishes particular criteria for withholding or refers to particular types of matters to be withheld.”³²

The letter also enclosed a memorandum defending the request. It contended:

Implementation of the court’s order would have two seriously adverse consequences: it would create frequent opportunities for large speculative profits by sophisticated market operators, and it would often impair the ability of the Federal Reserve to carry out the monetary policy it deems to be necessary in the national interest.³³

Winning the Merrill Case

June 28, 1979

The issue of the timing of the directive release was resolved in the Committee’s favor after a decision by the Supreme Court on June 28, 1979, and consideration of the facts by the District Court on remand on June 9, 1981.

The Supreme Court held that the Committee may continue to enforce its policy of deferring release of the domestic policy directive until the meeting next succeeding the one at which the directive was adopted--provided the Committee could establish that some harm would result from immediate disclosure. This harm could consist of either (1) an impairment to the monetary policy process; or (2) financial costs to the Government. On remand, Judge Oliver Gasch ruled in the Committee’s favor.³⁴

Although the FOMC received a favorable majority ruling in the Supreme Court, a dissent by Justice Stevens, with whom Justice Stewart joined, is of interest:³⁵

On the practical level, it seems to me that the operation of an “open” market committee should be open to all--not just to a selected few.

32. The letter to Senator Proxmire was also sent to the FOMC with a cover note, dated January 16, 1978, from Arthur L. Broida.

33. “Memorandum concerning Federal Reserve open market operations and recent court decision,” enclosure to letter from Chairman Burns to Senator Proxmire, January 13, 1978.

34. Stephen L. Siciliano, “Merrill v. Federal Open Market Committee, 443 U.S. 340 (1979), on remand 516 F. Supp. 1028 (D.D.C. 1981),” memorandum to Normand Bernard, October 27, 1992, p. 1.

35. Syllabus, 443 U.S., *Federal Open Market Committee of the Federal Reserve System v. Merrill, Stevens J.*, dissenting, p. 365.

A footnote to this sentence reads:

As Professor Milton Friedman of the University of Chicago stated: “May I say that I have long been in favor of the immediate release of the records of policy actions of the FOMC. . . .”

Two years after the Supreme Court ruling, the FOMC no doubt was pleased to hear of Judge Gasch’s decision:

Admittedly, in reaching this conclusion, the FOMC was required to choose between competing economic theories and competing economic policies. While Congress has entrusted the FOMC with making such determination, it is at once apparent that this Court is an inappropriate forum for weighing the wisdom of the FOMC’s choice. . . . This is particularly true in the context of this FOIA case.³⁶

Complying with New Legislative Goals and Reporting Requirements

Congressional activity focused on the Federal Reserve’s communication policy especially intently in the mid-1970s, starting with House Concurrent Resolution 133 in 1975, which set down reporting requirements for money and credit ranges. The Congress next passed the Federal Reserve Reform Act of 1977, which specified legislative goals. In 1978, it enacted the Humphrey-Hawkins Act, which refined monetary reporting requirements and established numerical economic objectives for the nation. After reviewing these congressional initiatives, this section concludes by characterizing the implementation and communication of monetary policy in the 1970s.

Adapting to the Congressional Resolution on Reporting 12-Month-Ahead Ranges March 24, 1975

A memorandum from Diane Werneke, a staff member in the Federal Reserve Board’s Congressional Liaison Office, covered the relevant congressional developments:

Until the mid-1970s, there were only limited attempts by Congress to legislate monetary policy actions or to provide general guidance to the Federal Reserve on what should be its economic goals. In the mid-1960s, Representative Patman introduced a series of bills to direct interest rate policy, but these efforts did not galvanize attention as economic policy was largely perceived to be in the domain of fiscal actions.

36. Stephen L. Siciliano, “Merrill v. F.O.M.C., D.D.C. No. 75-0736,” July 19, 1981, p. 8 of the attached opinion by Judge Gasch.

Several developments seem to explain why the focus of Congressional interest grew to encompass monetary policy: the secular rise in inflation beginning in the late 1960s, the advent of monetarism with its emphasis on the direct linkage between monetary policy and inflation, and more generally, the economic turbulence of the late 1960s and 1970s, characterized by a major recession, oil shocks, and accelerating inflation.

The first systematic Congressional oversight of the Federal Reserve's monetary policy activities began in 1975 with the passage of House Concurrent Resolution 133 on March 24, 1975. The Resolution was the direct precursor of the subsequent Federal Reserve Reform Act of 1977 and the Humphrey-Hawkins Act of 1978. The Resolution stated:

“That it is the sense of the Congress that the Board of Governors of the Federal Reserve System and the Federal Open Market Committee--

- (1) pursue policies in the first half of 1975 so as to encourage lower long-term interest rates and expansion in the monetary and credit aggregates appropriate to facilitating prompt economic recovery; and
- (2) maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”

Further, the resolution called for the Board to consult with Congress at semiannual hearings before the House and Senate Banking Committees about monetary policy plans and objectives regarding “the ranges of growth or diminution of monetary and credit aggregates in the upcoming twelve months.” Recognizing that economic conditions could change, the resolution stated that “nothing in this resolution shall be interpreted to require that such ranges of growth or diminution be achieved if the Board of Governors and the Federal Open Market Committee determine that they cannot or should not be achieved because of changing conditions.” The reasons for such a determination were to be explained to Congress during the subsequent semiannual hearing.

H. Con. Res. 133 was introduced Feb. 20, 1975, by Democratic House Banking Committee Chairman Henry Reuss. Senate Banking Committee Chairman William Proxmire, a Democrat, had introduced a similar resolution, S. Con. Res. 18, earlier in that month and the House-Senate conference report was agreed to a month later. The conference report was signed by both House and Senate Democrats and Republicans. That report emphasized the necessity

of lower long-term interest rates. However, it added that “the choice of policies pursued to encourage lower long-term rates is an administrative matter more properly left to the Board of Governors of the Federal Reserve System and the Federal Open Market Committee,” thereby establishing a model for congressional oversight: a general directive for monetary policy--maximum employment, stable prices, and moderate rates to be brought about by Federal Reserve policies to expand or decrease the monetary and credit aggregates--leaving flexibility for the Federal Reserve to adjust policies to changes in economic conditions. As the Conference Report stated, “the conferees agreed on the need for a provision . . . to assure the Federal Reserve flexibility in adapting to changing conditions.”

The resolution passed amid an economic environment of high interest rates, inflation, and unemployment . . . and reflected a growing sentiment in Congress to reaffirm its Constitutional authority over the Federal Reserve: “by enactment of House Concurrent Resolution 133, the Congress will be discharging its duty under the Constitution which directs Congress to ‘*** coin money and determine the value thereof’. This will be accomplished by directing the Federal Reserve, as a creature and agent of Congress, to direct monetary policy so as to reduce long-term interest rates--the rates most important as far as capital investment, housing, and other large, long-term investments are concerned.” (House Report No. 94-20 accompanying H. Con. Res. 133).³⁷

In May 1975, Chairman Burns testified before the House and Senate Banking Committees. For the first time, he presented and discussed ranges of growth in the monetary and credit aggregates selected by the FOMC for March 1975 to March 1976. Senator Proxmire commended Chairman Burns for being responsive to the resolution’s request for consultation with the Congress about the System’s objectives and plans for money and credit. In July, Chairman Burns presented ranges from June 1975 to June 1976, but for his next appearance, the FOMC had switched to a four-quarter growth rate from 1975:Q2 to 1976:Q2. Thereafter, the FOMC presented moving four-quarter growth rates to the Congress in complying with the resolution.

Chairman Burns similarly testified on four occasions in both 1976 and 1977. Before the early February 1976 hearing, Representative Reuss wrote a letter asking for the Federal Reserve’s estimates of GNP, unemployment, inflation, and interest rates that would likely accompany the specified money ranges. Chairman Burns responded at the hearing.

Dr. Burns. . . . There is no way of my giving you numerical projections by Board or committee members, other than my own, because they are not known to me.

37. Diane Werneke, “H. Con. Res. 133 and Monetary Policy and Subsequent Congressional Actions,” memorandum to Don Winn, September 1, 2000, pp. 1–2.

I could, of course, make available the projections by our staff. But there are several reasons--and to my mind, they are decisive--why I don't think this would be a wise thing to do.

In the first place, there would be a confusion in the public's mind between the projections by our staff and the projections of the Board or the committee; that is, these would be taken by very many people, in spite of all of the interpretation that I might supply, as being projections or forecasts which were made by the Board or by the Federal Open Market Committee. That is one difficulty.

Second, our staff follows a procedure that I believe is unique. They revise their projections every month--sometimes the revisions are very large--and they discipline themselves by making available to the Board once a month not only their projections as of that date, but their earlier projections, going back a year or a year and a half. That is a wonderful exercise in humility. It serves to remind everyone of how fallible these projections are.

Any projections by our staff that I might give you today might no longer be relevant, because they were now developing another one. And that would create a lot of confusion.

There is still a third difficulty. I am a little afraid--I have discussed this with members of my staff, and it is their opinion as well as mine--that if their projections were made public, they would be less prone, less willing, less inclined to revise the projections drastically from month to month, as they do at times. Therefore, the guidance and the assistance that we get from the staff would no longer express, to the same degree, their uninhibited, purely professional judgment.³⁸

Receiving Multiple Objectives in the Federal Reserve Reform Act of 1977 November 16, 1977

The Federal Reserve Reform Act of 1977 became law on November 16. It amended section 2A of the Federal Reserve Act by codifying the language of House Concurrent Resolution 133, which did not have the force of law. The act established in law the multiple objectives that remain in force to this day: "maximum employment, stable prices, and moderate long-term interest rates." Furthermore, it added

for the purposes of semiannual reports to Congress, which heretofore only required reports on the objectives and plans with respect [to] the monetary

38. Hearings before the Committee on Banking, Currency and Housing, House of Representatives, February 2-3, 1976, p. 74.

aggregates, the phrase “taking account of past and prospective developments in production, employment, and prices.”³⁹

A new section, “Congressional Review,” was inserted immediately after section 2 in the law:

SEC. 2A. The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy’s long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates. The Board of Governors shall consult with Congress at semiannual hearings before the Committee on Banking, Housing and Urban Affairs of the Senate and the Committee on Banking, Finance and Urban Affairs of the House of Representatives about the Board of Governors’ and the Federal Open Market Committee’s objectives and plans with respect to the ranges of growth or diminution of monetary and credit aggregates for the upcoming twelve months, taking account of past and prospective developments in production, employment, and prices. Nothing in this Act shall be interpreted to require that such ranges of growth or diminution be achieved if the Board of Governors and the Federal Open Market Committee determine that they cannot or should not be achieved because of changing conditions.

Chairman G. William Miller testified several times in 1978. In March, Representative Reuss asked him about base drift and the relationship of previous monetary control misses to upcoming ranges for monetary growth. In April, he asked about the positions of individual members of the FOMC at the March meeting. Their exchange is instructive:

Mr. Miller. . . . I understand the procedure has been such that, in order to provide full freedom for discussion and to avoid the possibility of inhibition of expression of viewpoints, the names of members who express those viewpoints are generally not made available. They were made available in the fuller records that were released many years later.

Those memorandum [sic] of discussion, of course, have been suspended recently; I hope that they will be reinstated so that there will be a historical base for analyzing decisions.

The Chairman [Reuss]. . . . I do not see why a board, five members of which are not even democratically selected, should have the cloak of anonymity thrown over it until we are all dead. So, I want to record myself as completely out of sympathy with the secrecy cloak of the Fed.

39. Diane Werneke, “H. Con. Res. 133 and Monetary Policy and Subsequent Congressional Actions,” memorandum to Don Winn, September 1, 2000, p. 5.

Accepting the Humphrey-Hawkins Act**October 27, 1978**

The Full Employment and Balanced Growth Act of 1978—or the Humphrey-Hawkins Act for short—became law on October 27. The relevant section of the act, which further amended section 2A of the Federal Reserve Act, follows:

1. General Policy: Congressional Review

The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain long run growth of the monetary and credit aggregates commensurate with the economy's long run potential to increase production, so as to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates. In furtherance of the purposes of the Full Employment and Balanced Growth Act of 1978, the Board of Governors of the Federal Reserve System shall transmit to the Congress, not later than February 20 and July 20 of each year, independent written reports setting forth (1) a review and analysis of recent developments affecting economic trends in the Nation; (2) the objectives and plans of the Board of Governors and the Federal Open Market Committee with respect to the ranges of growth or diminution of the monetary and credit aggregates for the calendar year during which the report is transmitted, taking account of past and prospective developments in employment, unemployment, production, investment, real income, productivity, international trade and payments, and prices; and (3) the relationship of the aforesaid objectives and plans to the short-term goals set forth in the most recent Economic Report of the President pursuant to section 3(a)(2)(A) of the Employment Act of 1946 and to any short-term goals approved by the Congress. In addition, as a part of its report on July 20 of each year, the Board of Governors shall include a statement of its objectives and plans with respect to the ranges of growth or diminution of the monetary and credit aggregates for the calendar year following the year in which the report is submitted. The reports required under the two preceding sentences shall be transmitted to the Congress and shall be referred in the Senate to the Committee on Banking, Housing and Urban Affairs, and in the House of Representatives to the Committee on Banking, Finance and Urban Affairs. The Board shall consult with each such Committee on the reports and thereafter, each such Committee shall submit to its respective body a report containing its views and recommendations with respect to the Federal Reserve's intended policies. Nothing in this Act shall be interpreted to require that the objectives and plans with respect to the ranges of growth or diminution of the monetary and credit aggregates disclosed in the reports submitted under this section be achieved if the Board of Governors and the Federal Open Market Committee determine that they cannot or should not be achieved because of changing conditions: Provided, that in the subsequent consultations with, and reports to, the aforesaid

Committees of the Congress pursuant to this section, the Board of Governors shall include an explanation of the reasons for any revisions to or deviations from such objectives and plans.

Like the Federal Reserve Reform Act of 1977, the Humphrey-Hawkins Act directed the FOMC to establish ranges for money and credit. In a new twist, it also required the Federal Reserve to show the relationship of FOMC objectives to the short-run projections of the Administration. The macroeconomic goals in the act, however, were not directly applicable to the Federal Reserve.

The Act did specify interim goals of 4 percent unemployment and 3 percent inflation that were to be achieved by the end of 1983. It also specified ultimate goals of full employment (undefined), a balanced federal budget, and 0 percent inflation, with the inflation goal to be achieved by 1988. The Act required a five-year path in the Economic Report of the President, starting in 1979, of expected progress toward the goals. The five-year paths were to be divided into short-term goals for the next two years and medium-term goals for three years after that.

The Act did require the Federal Reserve to set growth ranges for money and credit aggregates, taking account of past and prospective developments in key macroeconomic variables. In addition, the central bank had to show the relationship of its objectives to the President's short-term goals. The Act did not commit the Federal Reserve to achieving the President's short-term or medium-term goals, nor to achieving the interim or ultimate goals specified in the Act. The legislative history suggests that the Congress did not want the Federal Reserve and the President to pull strongly in opposite directions, but there was never any requirement that their objectives should match.

Over time, the nature of the Administration's short-term projections changed from being a path toward the numerical goals specified by the Act to being just a forecast for the economy. The Federal Reserve still follows the letter of the Act and includes in each Monetary Policy Report to the Congress a table and brief discussion comparing FOMC forecasts for key macroeconomic variables with those of the Administration [when available].⁴⁰

Before the Humphrey-Hawkins Act, the FOMC reported to the Congress moving twelve-month or four-quarter growth ranges for money and bank credit (see table 2). The Humphrey-Hawkins Act addressed the problem of intra-yearly base drift by requiring growth ranges for money and credit over calendar years, rather than over the next twelve months.

40. Dennis Farley, "Numerical Goals under the Humphrey-Hawkins Act," memorandum to Governor Meyer, April 11, 2000, pp. 1–2. The bracketed phrase is mine.

Table 2
 Money and Bank Credit:
 Growth Ranges Adopted by the FOMC Pursuant to
 House Concurrent Resolution 133 and the Federal Reserve Reform Act of 1977, 1975–78
 (Percent)

Date of FOMC meeting	Interval covered	M1	M2	M3	Bank credit ¹
1975					
Apr. 14-15	Mar. 1975 to Mar. 1976	5 to 7½	8½ to 10½	10 to 12	6½ to 9½
June 16-17	June 1975 to June 1976	5 to 7½	8½ to 10½	10 to 12	6½ to 9½
July 15	1975:Q2 to 1976:Q2	5 to 7½	8½ to 10½	10 to 12	6½ to 9½
Oct. 21	1975:Q3 to 1976:Q3	5 to 7½	7½ to 10½	9 to 12	6 to 9
1976					
Jan. 20	1975:Q4 to 1976:Q4	4½ to 7½	7½ to 10½	9 to 12	6 to 9
Apr. 20	1976:Q1 to 1977:Q1	4½ to 7	7½ to 10	9 to 12	6 to 9
July 19-20	1976:Q2 to 1977:Q2	4½ to 7	7½ to 9½	9 to 11	5 to 8
Nov. 8	1976:Q3 to 1977:Q3	4½ to 6½	7½ to 10	9 to 11½	5 to 8
1977					
Jan. 17-18	1976:Q4 to 1977:Q4	4½ to 6½	7 to 10	8½ to 11½	7 to 10
Apr. 19	1977:Q1 to 1978:Q1	4½ to 6½	7 to 9½	8½ to 11	7 to 10
July 19	1977:Q2 to 1978:Q2	4 to 6½	7 to 9½	8½ to 11	7 to 10
Oct. 17-18	1977:Q3 to 1978:Q3	4 to 6½	6½ to 9	8½ to 10½	7 to 10
1978					
Feb. 28	1977:Q4 to 1978:Q4	4 to 6½	6½ to 9	7½ to 10	7 to 10
Apr. 18	1978:Q1 to 1979:Q1	4 to 6½	6½ to 9	7½ to 10	7½ to 10½
July 18	1978:Q2 to 1979:Q2	4 to 6½	6½ to 9	7½ to 10	8½ to 11½
Oct. 17	1978:Q3 to 1979:Q3	2 to 6	6½ to 9	7½ to 10	8½ to 11½

1. Through the meeting of April 19, 1977, bank credit was represented by the bank credit proxy—a measure of the funds that member banks had available for lending.

Picking the First Calendar-Year Money and Credit Ranges**February 6, 1979**

In light of the calendar-year focus of the new Humphrey-Hawkins Act, the FOMC at its February 1979 meeting selected money and credit ranges from the fourth quarter of the base year to the fourth quarter of the next year. The Committee picked growth rate ranges over 1979 of 1½ to 4½ percent for M1, 5 to 8 percent for M2, 6 to 9 percent for M3, and 7½ to 10½ percent for bank credit. It reaffirmed these ranges in July as well. However, over much of the second half of 1979, the FOMC internally used a higher, 3 to 6 percent range for M1 that year, owing to a smaller-than-expected drag from recently authorized accounts outside that aggregate. The Committee did not yet collect macroeconomic forecasts from Board members or Reserve Bank presidents.

Chairman Miller's testimony in February 1979 indicated that the money and credit ranges for the current year called for a marked slowing from the paces of recent years. The report of the House Banking Committee on monetary policy proposed greater discipline by suggesting a 1 percentage point deceleration in the annual growth rate of M1 each year until 1982.

In additional views, printed separately in the Committee's report, Representative Gonzalez went further in critiquing the Fed's report. He believed that its report should explain "in plain terms what the policy it endorses will do to interest rates . . . [and] the rate of employment, and how it will affect overall economic performance, including the rate of inflation. . . ."⁴¹

Compiling the First Semiannual Macroeconomic Forecasts**July 11, 1979**

At its July meeting, the Committee reaffirmed for 1979 the money and bank credit ranges adopted in February and established "tentative" ranges for 1980 that were the same as those set for 1979. The Federal Reserve's July 1979 Humphrey-Hawkins report took a crucial step in fuller communication. It did so by providing for the first time the ranges of the projections by individual members of the FOMC of four-quarter growth for nominal and real GNP and for the rate of GNP inflation, as well as the fourth-quarter unemployment rate, for 1979 and 1980. Only the Board members contributed projections, and no central tendencies of the projections were supplied. The full ranges of the projections for 1979 specifically were 8 to 10 percent for nominal GNP, -2 to -½ percent for real GNP, 9½ to 11 percent for the implicit deflator, and 6¼ to 7 percent for the civilian unemployment rate. For 1980, the ranges of projections were 8½ to 11½ percent for nominal GNP, -½ to 2 percent for real GNP, 8½ to 10½ percent for the implicit deflator, and 6¾ to 8½ percent for the unemployment rate. Nonetheless, in the context of ever-mounting inflationary pressures, the House Banking Committee's report on monetary policy admonished the FOMC for its stop-and-go policies and for not fostering sufficiently steady M1 growth.

41. Diane Werneke, "H. Con. Res. 133 and Monetary Policy and Subsequent Congressional Actions," memorandum to Don Winn, September 1, 2000, p. [12].

Implementing Monetary Policy**1969–79**

To understand fully how monetary policy was implemented from the mid-1970s on, it is necessary to go back even further in time and describe the procedures in the late 1960s and their subsequent evolution. In 1969, the Committee had for four years been directing the Manager to seek specified money market conditions, with the explicit proviso in the directive for some modification if bank credit deviated significantly from recent or anticipated behavior. According to Governor Wallich and Peter Keir:

For the four years that the Federal Open Market Committee qualified its operating directive with proviso clauses, the operations of the Manager were actually modified in accordance with such clauses on only a few occasions-- and then only slightly. Thus, . . . money market conditions continued to be dominant operating targets for open market policy during those years, and there was no explicit linkage of the proviso clause to any view of a desired longer-run trend in the aggregates.⁴²

At its January 15, 1970, meeting, the Committee added “money” to “bank credit” and, at its February 10, 1970, meeting, importantly switched its main focus from money market conditions to the expansion of the aggregates, as Wallich and Keir write (p. 685):

At the beginning of 1970 the Federal Open Market Committee began to change its emphasis. During the succeeding two to two and one-half years, operating directives usually stressed bank credit and money as primary targets, subordinating money market conditions to a proviso. Average growth ranges were specified for both the bank credit proxy and the money supply. The time span chosen for this specification became the two-month period encompassing the current and succeeding meetings. These target growth ranges were to be achieved provided that in the process key money market rates, chiefly the federal funds rate, did not move outside their own stated ranges. Even with this general emphasis on money and credit as primary targets, actual growth in these measures often continued to deviate significantly from the Committee’s specified ranges. Since the Committee remained reluctant to authorize wide ranges for possible change in money market rates, the Manager was constrained in moving to counter deviations in money growth rates; moreover, as noted earlier, the aggregates responded to his actions with a lag.

Despite imposing its own limitations on funds rate variation, the FOMC was somewhat dissatisfied with the effectiveness of monetary control yielded by these procedures; so as the 1970s progressed well into the second half, the FOMC sponsored some abortive shadow

42. Henry C. Wallich and Peter M. Keir, “The Role of Operating Guides in U.S. Monetary Policy: A Historical Review,” *Federal Reserve Bulletin*, September 1979, p. 685.

experiments with reserve targeting, as recommended by the Subcommittee on the Directive. Because these efforts revealed that as targets the reserve measures chosen had certain flaws, the FOMC “soon concluded that money market conditions were preferable as its immediate operating target” (p. 685).⁴³

The ranges for the monetary and credit aggregates were chosen with an eye toward restraining inflation while sustaining expansion. The Federal Reserve reported on these ranges, and on monetary policy and the economy more generally, to the Congress first at quarterly and then, starting in 1979, at semiannual intervals, as the evolving legislation called for. Governor Wallich and Peter Keir (p. 686) described the operating procedures used to attain these ranges that by September 1979 had been extant for some time:

At each of its monthly meetings the Federal Open Market Committee sets two-month ranges of tolerance for growth in M-1 and M-2. These shorter-run ranges are intended to be broadly consistent with the calendar-year targets reported semiannually to the Congress; . . . but they are not completely constrained by those targets and may exceed or fall short of them. Since the Committee can change its calendar-year ranges in light of the economic outlook, it retains considerable discretion to adjust the two-month ranges at its monthly meetings. . . . Actions linked to these short-run ranges thus continue to be the focus of open market policy.

When the performance of the money supply appears to be deviating from the Committee’s stated two-month ranges, the Manager of the System Account is still constrained in his efforts to offset these deviations by a federal funds rate proviso. He can initiate countering open market purchases or sales only so long as these operations, or other market factors, do not push the weekly average federal funds rate outside its specified range, generally 50 to 100 basis points wide. If growth rates for M-1 and M-2 (occasionally weighted unequally to minimize the impact of known distortions in the series) appear to be remaining outside the Committee’s desired ranges, and the Manager’s actions to counter this deviation have moved the funds rate to the upper or lower limit of its range, he must request new instructions from the Committee.

So long as the funds rate remains within its specified range, the Manager has leeway to respond to evidence that weighted growth rates for M-1 and M-2 are approaching or moving outside the limits of their ranges. The FOMC may instruct him to begin offsetting market action when the aggregates move

43. This conclusion seems to have been something of a non sequitur in light of subsequent experience with targeting the perfectly adequate concept of nonborrowed reserves, which naturally needed “multiplier adjustments” to offset unpredicted movements in currency, government demand deposits, and time and savings deposits. A total reserves concept, like reserves against private nonbank deposits (RPDs), whose targeting necessitates offsetting unexpected variations in borrowed reserves, is, of course, an entirely different story. After some unsatisfactory simulated results with RPDs, the Committee settled on nonborrowed reserves for its shadow experiments.

substantially into the upper or lower halves of their ranges. Alternatively, the Committee may instruct him to take action only when growth rates for M-1 and M-2 are already close to or exceeding the limits of the ranges. In either case, these operating procedures encourage the Manager to respond more sensitively to deviations in growth of the aggregates from desired rates than was the case in the late 1960s and early 1970s. Of course, the full effect on M-1 and M-2 of a change in the funds rate occurs, not within the one-month intermeeting period, but cumulatively over a period of roughly six months.

A description, written in the mid-1980s, of how those procedures were supposed to work is pertinent:

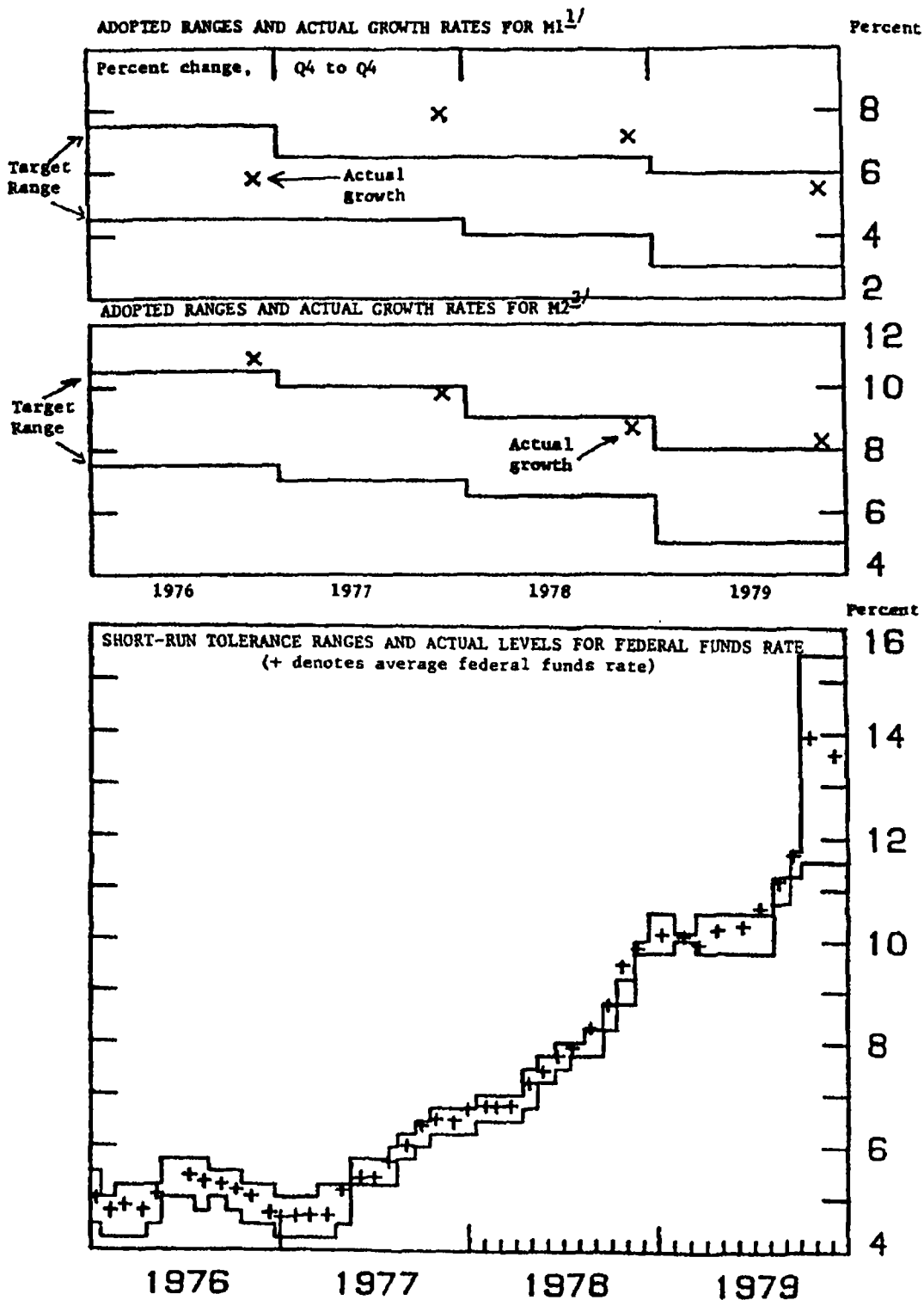
Through these procedures the Federal Reserve sought to influence directly the quantity of money demanded by the public. It tried to select a level of the funds rate that would make the public want to hold an amount of money equal to the targeted value. When the Trading Desk raised the funds rate, other short-term interest rates tended to rise in sympathy. The public then found market instruments more attractive relative to money balances, which were subject to interest rate ceilings or outright prohibitions on the payment of interest. The resulting transfer of funds from monetary to other financial assets was reflected in a reduced stock of money. Over time, as well, the higher interest rates and accompanying tighter credit conditions tended to damp spending and hence transactions demands for money. In practice, when money demand strengthened, the Committee did not always alter the funds rate promptly enough or sufficiently to keep monetary aggregates consistently within their ranges, even over the longer run. . . .

The Federal Reserve's record in attaining the announced annual ranges for M1 and M2 from 1976 to 1979 was somewhat mixed. [Along with the monthly average federal funds rate, t]he ranges for the calendar year also are shown by the lines in [exhibit 2] and the actual growth rates of M1 and M2 are shown by Xs, using the definitions of these aggregates in force during these years. Over each of these calendar years, only one of the aggregates grew within its range, while the other expanded faster than its upper bound.⁴⁴

Governor Wallich and Peter Keir did not see these procedures as representing an optimum that would forever stay frozen in place. Even so, they did not predict the character of the very next step. I cannot resist quoting the last paragraph, especially the last sentence, of their article published in the September 1979 issue of the *Federal Reserve Bulletin* (p. 690); it is an example of the perils of prognostication even of near-term developments:

44. David E. Lindsey, "The Monetary Regime of the Federal Reserve System," in Colin D. Campbell and William R. Dugan, ed., *Alternative Monetary Regimes*, Johns Hopkins University Press, 1985, pp. 176 and 180. Paper delivered at a conference at Dartmouth College on August 22-24, 1984.

Exhibit 2



1. M1 defined as currency and demand deposits.
 2. M2 defined as M1 plus savings and small time deposits at commercial banks.

The many practical difficulties of selecting a monetary target with predictable links to GNP reinforces a persisting strand of Federal Reserve thought: that no single formula or operating target can be relied on to work effectively in all circumstances. For this reason the Federal Reserve has typically hedged its commitment to any given operating target, constantly checking performance of the target and other relevant economic variables to determine whether the presumed linkage between them is working as expected. The future of Federal Reserve monetary policy techniques is unforeseeable, depending as it does in large measure upon developments in the economy, especially the degree to which inflation can be overcome. But the deeply rooted practice of eclectic choice among operating techniques and policy targets, rather than exclusive commitment to one, is likely to continue.

One month later the FOMC switched to a virtually exclusive focus on controlling M1 through essentially single-minded reliance on a nonborrowed reserves operating target. Over the longer run, though, Wallich and Keir seem a bit more prescient.⁴⁵

The foregoing represents a description of the implementation of monetary policy by the FOMC from 1969 through the summer of 1979. As for policy design, the details will be examined in chapter VI, which shows that the FOMC seemed to rely heavily on macroeconomic forecasts in setting the funds rate while exercising caution in adjusting that rate. The Committee appeared to focus on the likely pressures on inflation and labor resources. Unfortunately, as the 1970s drew to a close, the forecasts of economic weakness proved to be overdone, the implicit estimate of the NAIRU proved to be much too low, and the movements in the policy stance proved to be “too little—too late.”

Some of the impetus to inflation also came from the misleading signals imparted by the slowdown in M1 growth around mid-decade, given the downward shift in its demand function relative to nominal income and short-term rates. (To be sure, reverse causation was at work as well. Had the Federal Reserve acted to prevent the inflation that raised the opportunity costs of transaction balances, then much less incentive to economize on M1 through unusual innovations would have emerged, and the demand function for M1 would have remained much more stable.) In addition, two separate shocks to the price of oil had adverse effects both before the middle of and again late in the decade. The exchange value of the dollar showed sporadic weakness.

45. I am hardly in a position to make fun of people's inability to realize that the passage of one month would refute their judgment about a historical inevitability. I suffered the ignominy of an even shorter delay. In the highlight of my career, I saw myself as a mover and shaker behind the Board's adoption of contemporaneous reserve requirements (CRR) in place of lagged reserve requirements (LRR) to slightly improve control of M1 under a nonborrowed reserves operating target. The Board approved CRR on September 29, 1982, and announced the approval on October 5, 1982, with an implementation date of February 2, 1984. The FOMC then proceeded to abandon its virtually exclusive focus on controlling M1 at its October 5, 1982, meeting—the very same day CRR was announced—and shortly thereafter to drop the nonborrowed reserves operating target in favor of borrowed reserves. The two FOMC actions rendered CRR useless for monetary control relative to LRR and vindicated Wallich and Keir's last paragraph after all. (The Board finally readopted lagged reserve requirements on March 24, 1998, announcing the decision on March 26, 1998, for implementation on July 30, 1998.)

(Some portion of these last two influences likely was exogenous.) Whatever the reasons, inflation expectations were picking up as well over those years.⁴⁶ And some observers have further asserted that Chairman Burns's political moves at least upon occasion produced an easier monetary policy than otherwise.⁴⁷ Still, the most crucial source of the overly expansionary monetary policy in the 1970s seems to have been the underestimate of the economy's natural rate of unemployment.

Communicating Monetary Policy 1969–79

The Committee in the 1970s, of course, did not dress its policy setting in the modern cloth of a forward-looking Taylor rule with an implicit target for the inflation rate and an implicit, if considerably underestimated, estimate of the natural rate of unemployment. Instead, the common thread running through many of the relevant FOMC communications of the period was that the Federal Reserve was not ultimately to blame for the too-rapid secular rise in prices because of the critical influence of other factors.

Excessive fiscal policy stimulus was a commonly referenced contributing source. The cost-push effects of union power through wage negotiations also was regarded as playing an important role, as was corporate discretion over administered product prices. Both perspectives had been consistent with the experiment with wage and price controls earlier in the decade, the lifting of which also boosted the measured inflation rate. After mid-decade, attention shifted to OPEC: This cartel of oil producers was thought to have a permanent influence not just on relative prices but also on overall trend inflation. By the 1970s, the economics profession had advanced sufficiently so that most FOMC members had accepted a vertical long-run Philips curve, in which the equilibrium unemployment rate was independent of the inflation rate. Rather, despite rousing anti-inflationary speeches and testimony, the Federal Reserve had not really taken to heart that the long-run inflation rate was the responsibility solely of the central bank, along with its other responsibility for promoting sustainable real growth in the intermediate run. Thus, the central bank alone has the long-run duty of ensuring stable prices.

46. This paragraph so far draws on Stephen H. Axilrod, "U.S. Monetary Policy in Recent Years: An Overview," *Federal Reserve Bulletin*, January 1985, pp. 14–16.

47. See William Greider, *Secrets of the Temple: How the Federal Reserve Runs the Country*, Simon and Schuster, 1987, p. 67.

II. OCTOBER 1979 TO SEPTEMBER 1982: CONTROLLING M1 AND OPERATING ON NONBORROWED RESERVES

Adopting New Monetary Control Procedures	41
Replacing the funds rate with nonborrowed reserves, October 6, 1979	41
Adapting the Content of the Directive	44
Alluding to reserve aggregates and widening the funds rate band, October 6, 1979	45
Reintroducing quantitative short-run monetary ranges, January 8–9, 1980	45
Introducing a violation of the funds rate band as a signal for consultation, December 18–19, 1980	46
Complying with the Legislative Initiative for Monetary Targeting	47
Redefining the monetary aggregates, February 4–5, 1980	55
Implementing credit controls, March 14, 1980	55
Resisting setting annual ranges for the next year, July 9, 1980	56
Accounting for nationwide NOWs with shift adjustment, February 2–3, 1981	57
Evaluating the new monetary control procedures, February 1981	57
Aiming at the upper bound of a constant annual M1 range, June 30–July 1, 1982	58
Perceiving the need for more flexibility in policy design, July 1, 1982	60
Implementing monetary policy, 1980–82	62
Communicating monetary policy, 1980–82	62

II. OCTOBER 1979 TO SEPTEMBER 1982: CONTROLLING M1 AND OPERATING ON NONBORROWED RESERVES

Adopting New Monetary Control Procedures

On Saturday October 6, 1979, the FOMC held a special meeting in Washington and switched its operating target from the federal funds rate to nonborrowed reserves. It was dissatisfied with the old operating procedures, which had not kept the monetary aggregates under adequate control. It also faced inflationary developments in domestic and international markets. The FOMC in effect took responsibility for long-run inflation with this action. That evening, the Federal Reserve announced that it had switched operating procedures “to support the objective of containing growth in the monetary aggregates . . . [by] placing greater emphasis on the supply of bank reserves and less emphasis on confining short-term fluctuations in the Federal funds rate.” It also announced the Board’s reinforcing adjustments to the discount rate and reserve requirements.

Chairman Volcker had returned early from an IMF conference in Belgrade, arriving in Washington on Tuesday, October 2, with his ears still resonating with strongly stated European recommendations for stern action. The view on Wall Street was that the new procedures were prompted by these criticisms. In fact, the die had already been cast, as Chairman Volcker had lined up support among the other Board members for a conversion to a reserve-based technique even before he had left for Europe on the previous Saturday.⁴⁸

This chapter first describes this procedural change and addresses the rewording of the directive implied by its implementation. Next, the chapter covers the way the FOMC overcame various practical obstacles that emerged in the process of monetary targeting. The text then turns to the daily implementation of monetary targeting. Finally, it discusses the contradictions that were surfacing in the communication of policy to the public.

Replacing the Funds Rate with Nonborrowed Reserves October 6, 1979

The developments in 1979 leading up to the new operating procedures have been described in a paper by Athanasios Orphanides in a section entitled “What happened in 1979?”⁴⁹ In short, throughout the first half of 1979, the FOMC was deterred from tightening on balance because it was concerned about the prospect of recession; as noted in chapter I, the first semiannual economic forecasts of Board members presented that July projected a decline in the level of real GNP over 1979 and a sharp rise in the unemployment rate by the fourth quarter. In the event, growth in the first half turned out to be positive in each quarter. As spring turned into summer and temperatures rose, inflation also was heating up, leading the FOMC to undertake several policy firmings before the fall began. As September drew to a close, the need for a new technique for monetary operations had become compelling.

48. William Greider, *Secrets of the Temple*, pp. 105–18.

49. Athanasios Orphanides, “Monetary Policy Rules, Macroeconomic Stability and Inflation: A View from the Trenches,” *Journal of Money, Credit and Banking*, forthcoming.

Accordingly, a special meeting was scheduled for October 6 in Washington. Stephen Axilrod, Economist for the FOMC, and Peter Sternlight, Manager for Domestic Operations, System Open Market Account, coauthored a background memorandum outlining the general contours of the proposed new approach. It was sent electronically to the FOMC members on October 4. It envisaged that the FOMC would choose a desired short-run growth trajectory for M1 and other aggregates and that the staff would determine the associated path for total reserves. The memorandum also suggested another point at which an FOMC decision could fit into newly structured operations:

A method for setting the level of nonborrowed reserves would be to take the average level of borrowing in recent weeks and subtract them from total reserves. Or the Committee could take a different level of borrowing--either higher or lower--depending in part on whether it wishes to tilt money market conditions toward tightness or ease in the period ahead. Whether money market interest rates would tend to rise, or rise more than they otherwise would, then depends on whether the demand for the total monetary base or total reserves were strong relative to the FOMC's path. If strong, the funds rate and the level of member bank borrowing would tend to rise as the Desk adhered to the initial path level [for] nonborrowed reserves. Conversely, if demands were weak, the funds rate, and the level of member bank borrowing, would tend to decline.⁵⁰

The FOMC had a last-minute information-sharing conference call on October 5.

Chairman Volcker. . . . You will have very shortly, if you don't already, a memorandum that Steve Axilrod and Peter Sternlight prepared describing a possible approach that involves leaning more heavily on the aggregates in the period immediately ahead. And the complement of that is leaning less heavily on the federal funds rate in terms of immediate policy objectives. We have had considerable discussion of that over the past couple of weeks here and that memorandum attempts to distill some of the thinking. I want to discuss tomorrow whether we want to adopt that approach, not as a permanent [decision] at this stage, but as an approach for between now and the end of the year, roughly, in any event. . . .⁵¹

At its October 6 meeting, dubbed the "Saturday Night Special" on Wall Street, the Committee took the decisive step:

50. Messrs. Axilrod and Sternlight, "Proposal for reserve aggregates as [a] guide to open market operations," memorandum to Federal Open Market Committee, October 4, 1979, p. 7.

51. Unedited transcript of the October 5, 1979, FOMC conference call, p. 1.

Chairman Volcker. . . . I certainly conclude from all of this that we can't walk away today without a program that is strong in fact and perceived as strong in terms of dealing with the situation. . . .

[W]e are not dealing with a stable psychological or stable expectational situation by any means. And on the inflation front we're probably losing ground. In an expectational sense, I think we certainly are, and that is being reflected in extremely volatile financial markets.⁵²

Indicating the considerable extent to which he had thought through the theory of the reforms, Chairman Volcker in the meeting made clear that the choice of the initial borrowings assumption in principle should be based on the same predicted level of the federal funds rate (converted to a spread over a discount rate) that was associated with the projection of near-term M1 growth that matched the FOMC's targeted growth path for that aggregate:

Chairman Volcker. . . . Suppose we happen to put a lot of weight on the current projection of the money supply and pick figures that would closely coincide with that. We would then provide, making some assumption on the level of borrowing that seemed to be consistent with the level of interest rates that presumably laid behind the projection of the money supply in the first place--we can't avoid interest rates assumptions the way these things are done--nonborrowed reserves along that path.⁵³

But Chairman Volcker's attention never seemed to stray for long from the fundamental task of restoring price stability. He made the case first at press conferences on October 6 and in late November 1979 and then to the Congress in February 1980. Orphanides (p. 21) quotes Chairman Volcker's first Humphrey-Hawkins testimony (February 19, 1980):

In the past, at critical junctures for economic stabilization policy, we have usually been more preoccupied with the possibility of near-term weakness in economic activity or other objectives than with the implications of our actions for future inflation. To some degree, that has been true even during the long period of expansion since 1975. As a consequence, fiscal and monetary policies alike too often have been prematurely or excessively stimulative, or insufficiently restrictive. The result has been our now chronic inflationary problem, with a growing conviction on the part of many that this process is likely to continue. . . .

52. Unedited transcript of the October 6, 1979, FOMC meeting, p. 6. When Normand Bernard was cleaning out his basement several years ago, he stumbled upon an old reel-to-reel tape. It turned out to be the recording of the October 6, 1979, FOMC meeting, which he subsequently had transferred to three cassettes for easy listening.

53. Unedited transcript of the October 6, 1979, FOMC meeting, p. 28. In the event, the initial borrowings assumptions were not published until the year was over. They were included in the Manager's annual report on open market operations, which was published by the Federal Reserve Bank of New York, typically in April of the next year.

The broad objective of policy must be to break that ominous pattern. That is why dealing with inflation has properly been elevated to a position of high national priority. Success will require that policy be consistently and persistently oriented to that end. Vacillation and procrastination, out of fears of recession or otherwise, would run grave risks. Amid the present uncertainties, stimulative policies could well be misdirected in the short run; more importantly, far from assuring more growth over time, by aggravating the inflationary process and psychology they would threaten more instability and unemployment.

The Congress reacted favorably to the FOMC's strengthened anti-inflationary resolve as signaled by the new operating procedures.

In April of 1980, the House Banking Committee, under Democratic Chairman Henry Reuss, was supportive of announced Federal Reserve monetary policy and was inclined to be patient in waiting for results on inflation. Republicans did not dissent from the Committee's views. Following are excerpts from that report:

"Bringing rapid inflation to tolerable levels without precipitating a serious recession requires a cautious moderation of monetary growth in 1980 and into the future for years to come. The Committee and the Federal Reserve are agreed on this objective." . . .

The report also specifically endorsed the Federal Reserve's October 1979 change in operating procedures as "a change we applaud." The Committee also recommended that the Fed move away from its then-current system of lagged reserve requirements toward contemporaneous reserve requirements.⁵⁴

Adapting the Content of the Directive

The Committee's change in operating procedures was reflected in the operational paragraphs of the directive. Although in practice the Desk's "intervention points" around the intended funds rate at any given time were even smaller than the band in the policy record, the September 18, 1979, policy record had focused on attaining a weekly average funds rate within a band of ½ percentage point depending on tolerance ranges for M1 and M2 growth:

In the short run, the Committee seeks to achieve bank reserve and money market conditions that are broadly consistent with the longer-run ranges for monetary aggregates cited above, while giving due regard to developing

54. Winthrop Hambley, "Information for Governor Meyer," September 8, 2000, pp. [1–2], with a cover note from Don Winn, "Background Materials on Congress and Monetary Policy," September 25, 2000.

conditions in foreign exchange and domestic financial markets. Early in the period before the next regular meeting, System open market operations are to be directed at attaining a weekly average federal funds rate slightly above the current level. Subsequently, operations shall be directed at maintaining the weekly average federal funds rate within the range of $11\frac{1}{4}$ to $11\frac{3}{4}$ percent. In deciding on the specific objective for the federal funds rate the Manager for Domestic Operations shall be guided mainly by the relationship between the latest estimates of annual rates of growth in the September-October period of M-1 and M-2 and the following ranges of tolerance: 3 to 8 percent for M-1 and $6\frac{1}{2}$ to $10\frac{1}{2}$ percent for M-2. If rates of growth of M-1 and M-2, given approximately equal weight, appear to be close to or beyond the upper or lower limits of the indicated ranges, the objective for the funds rate is to be raised or lowered in an orderly fashion within its range.

If the rates of growth in the aggregates appear to be beyond the upper or lower limits of the indicated ranges at a time when the objective for the funds rate has already been moved to the corresponding limit of its range, the Manager shall promptly notify the Chairman, who will then decide whether the situation calls for supplementary instructions from the Committee.

Alluding to Reserve Aggregates and Widening the Funds Rate Band October 6, 1979

In sharp contrast, the operational paragraph of the October 6, 1979, meeting mentioned right away the Committee's desire for expansion of reserve aggregates consistent with four-quarter growth of the monetary aggregates in accord with their annual ranges. The band for permissible funds rate variation was widened to 4 percentage points.

In the short run, the Committee seeks to restrain expansion of reserve aggregates to a pace consistent with deceleration in growth of M-1, M-2, and M-3 in the fourth quarter of 1979 to rates that would hold growth of these monetary aggregates over the whole period from the fourth quarter of 1978 to the fourth quarter of 1979 within the Committee's longer-run ranges, provided that in the period before the next regular meeting the weekly average federal funds rate remains within a range of $11\frac{1}{2}$ to $15\frac{1}{2}$ percent. The Committee will consider the need for supplementary instructions if it appears that operations to restrain expansion of reserve aggregates would maintain the federal funds rate near the upper limit of its range.

Reintroducing Quantitative Short-Run Monetary Ranges January 8-9, 1980

Language similar to that initiated on October 6, 1979, to confine implicit near-term growth of the monetary aggregates enough to be compatible with their announced annual ranges for the year, was retained in operational paragraphs until the January 1980 meeting. At that time, the FOMC specified explicit growth rates of M1 and M2 over the first quarter of 1980, that is, over the December-to-March interval:

In the short run the Committee seeks expansion of reserve aggregates consistent with growth over the first quarter of 1980 at an annual rate between 4 and 5 percent for M-1 and on the order of 7 percent for M-2, provided that in the period before the next regular meeting the weekly average federal funds rate remains within a range of 11½ to 15½ percent.

If it appears during the period before the next meeting that the constraint on the federal funds rate is inconsistent with the objective for the expansion of reserves, the Manager for Domestic Operations is promptly to notify the Chairman who then will decide whether the situation calls for supplementary instructions from the Committee.

The reference to an M1-type measure in the operational paragraphs subsequently would come and go, as we shall see. Nonetheless, the Committee would retain a short-run specification for growth of the broader aggregates throughout the 1980s. Indeed, it would keep this specification for broad money until February 1993, implying a thirteen-year reign for the approach.

Introducing a Violation of the Funds Rate Band as a Signal for Consultation December 18–19, 1980

At its last meeting in 1980, the Committee changed the formal statement to liberalize the meaning of the permissible band for the funds rate. Previously, it had been worded more as a binding constraint, as in the operational paragraphs for the November 18, 1980, meeting:

In the short run, the Committee seeks behavior of reserve aggregates consistent with growth of M-1A, M-1B, and M-2 over the period from September to December at annual rates of about 2½ percent, 5 percent, and 7¾ percent respectively, or somewhat less, provided that in the period before the next regular meeting the weekly average federal funds rate remains within a range of 13 to 17 percent.

If it appears during the period before the next meeting that the constraint on the federal funds rate is inconsistent with the objective for the expansion of reserves, the Manager for Domestic Operations is promptly to notify the Chairman, who will then decide whether the situation calls for supplementary instructions from the Committee.

At its December 18–19, 1980, meeting, the Committee chose an operational paragraph making clearer the point that funds persistently tending to trade outside the specified band would be permissible but would trigger notification of the Chairman, who could obtain amended instructions:

If it appears during the period before the next meeting that fluctuations in the federal funds rate, taken over a period of time, within a range of 15 to 20 percent are likely to be inconsistent with the monetary and related reserve paths, the Manager for Domestic Operations is promptly to notify the

Chairman, who will then decide whether the situation calls for supplementary instructions from the Committee.

The innovation of making explicit the possibility of temporary funds trading outside the band would last almost ten years; this wording was not dropped until November 1990.

Complying with the Legislative Initiative for Monetary Targeting

The following extended quotation lays out an analytic framework that can inform judgments about the experience under the new operating procedures. It is taken from one of several nontechnical explications of the principles underlying the new operating procedures that were written while they were still being used.⁵⁵

Having established annual ranges for monetary aggregates, the . . . FOMC selects at each meeting interim money growth targets over the next several months typically designed to return money to the longer-run objective over time. For the upcoming intermeeting period, [the] FOMC also specifies a relatively wide federal funds rate band that serves as a trigger for consultations, and may also choose an initial discount borrowing assumption used for constructing the nonborrowed reserves path. The Board staff then derives intermeeting-period target paths for nonborrowed and total reserves that are consistent with the Committee's decisions. . . .

During intermeeting periods, the [T]rading [D]esk at the Federal Reserve Bank of New York engages in open market operations designed to attain the nonborrowed reserve target, as adjusted for incoming information. These technical adjustments to the nonborrowed (and total) reserve targets are made when new data indicate that certain variables are diverging from path levels in a way that disturbs the multiplier relationship between total reserves and money. Simply put, these technical adjustments are designed in principle so that a divergence of the money stock from its intermeeting target gives rise, essentially automatically, to proportional dollar changes in the gap between total reserves demanded and nonborrowed reserves supplied; however, other unexpected shocks altering the multiplier relationship between total reserves and money do not affect this gap. Specifically, over the intermeeting period, the induced movement of borrowings away from their initially assumed level equals the assumed average required reserve ratio [o]n transactions deposits at

55. Alternatively, see Board of Governors of the Federal Reserve System, "The New Federal Reserve Technical Procedures for Controlling Money," January 30, 1980, which also appeared as "Appendix B: Description of the New Procedures for Controlling Money," appended to "Monetary Policy Report to the Congress Pursuant to the Full Employment and Balanced Growth Act of 1978, February 19, 1980; Stephen H. Axilrod and David E. Lindsey, "Federal Reserve System Implementation of Monetary Policy: Analytical Foundations of the New Approach," *American Economic Review, Papers and Proceedings*, May 1981, paper delivered at the American Economic Association meetings, September 6, 1980.

member banks times the divergence of the money stock from its intermeeting target path (but with the deposit components lagged two weeks in reflection of lagged reserve requirements).

Thus, in principle, these operating procedures involving nonborrowed reserve targeting automatically permit deviations of money from intermeeting targets to produce proportional movements of discount window borrowings. An overshoot of money, for example, will cause borrowings to rise. Given the discount window rate structure and administrative procedures, the rise in borrowings will tend to be associated with an increase in the federal funds rate spread over the discount rate. This increase occurs because institutions must be induced to overcome their heightened reluctance to borrow in response to the stronger administrative pressure accompanying enlarged adjustment borrowings. The higher federal funds rate, in turn, sets in motion balance sheet adjustments on the part of the depository institutions and the public that will tend both to raise other short-term interest rates and to reverse over time the initial overshoot in money from the interim target.

If the money stock deviation from the intermeeting target stems from a “permanent” movement in the money demand schedule, perhaps owing to a strengthening of aggregate spending, then these automatic forces would not be sufficient to reverse fully the emerging overshoot in money. This would certainly be true within the same intermeeting period, given the distributed lag of effects to interest rates on the quantity of money demanded. (Even over the long run, money would not fully return to path in this case if, hypothetically speaking, the nonborrowed reserve target were left unchanged, because the implied money supply schedule is not vertical with respect to the short-term interest rates, but has a positive slope owing primarily to the interest elasticity of borrowings.)

Thus, to reduce the extent of the deviations of money from target, both in the current intermeeting period and prospectively, additional options are available between FOMC meetings under the operating procedures. A discretionary policy adjustment to the nonborrowed reserve path relative to the total reserve path—as opposed to the technical adjustments described earlier—can be made in the direction opposite to the money stock overshoot. Or the discount rate can be raised. Exercising the first option would raise discount borrowings for a given discount rate and tend to raise the federal funds rate above where it would be otherwise, given the target for nonborrowed reserves. Either policy action would tend to speed up the process of returning money to target. In gauging whether such actions are warranted, the size of the gap between total reserve demands and the adjusted target for total reserves is monitored. Prior to discretionary adjustments to the nonborrowed reserve path, this gap also equals, by construction, the induced movement in borrowings implied by the

updated nonborrowed reserve target away from the initially assumed borrowings level. . . .⁵⁶

The ranges for money and bank credit chosen by the FOMC from 1979 to 1982 as called for by the Humphrey-Hawkins Act are shown in table 3. The initial borrowings assumption adopted by

Table 3
Money and Bank Credit:
Current-Year Growth Ranges Adopted under the Humphrey-Hawkins Act,
1979–82
(Percent, fourth quarter to fourth quarter)

Date of FOMC meeting	M1	M2	M3	Bank credit
1979				
Feb. 6	1½ to 4½	5 to 8	6 to 9	7½ to 10½
July 11	1½ to 4½ ¹	5 to 8	6 to 9	7½ to 10½
1980				
Feb. 4–5 ²	3½ to 6 (M-1A) 4 to 6½ (M-1B)	6 to 9	6½ to 9½	6 to 9
July 9	3½ to 6 (M-1A) 4 to 6½ (M-1B)	6 to 9	6½ to 9½	6 to 9
1981³				
Feb. 2–3	3 to 5½ (M-1A) 3½ to 6 (M-1B)	6 to 9	6½ to 9½	6 to 9
July 6–7	3 to 5½ (M-1A) 3½ to 6 (M-1B)	6 to 9	6½ to 9½	6 to 9
1982				
Feb. 1–2	2½ to 5½	6 to 9	6½ to 9½	6 to 9
June 30–July 1	2½ to 5½	6 to 9	6½ to 9½	6 to 9

1. Because of an unexpectedly slow shifting of accounts in New York State into nationwide ATS and NOWs, accounts that were not included in M1, the FOMC used an adjusted annual range for M1 of 3 percent to 6 percent over much of the second half of 1979.

2. The monetary aggregates embodied new definitions.

3. The ranges for M-1A and M-1B for 1981 applied to shift-adjusted measures of narrow money.

56. David E. Lindsey, "Nonborrowed Reserve Targeting and Monetary Control," in Laurence H. Meyer, ed., *Improving Money Stock Control*, Kluwer-Nijhoff Publishing, 1983, pp. 4–6. Paper delivered at a conference, "Improving Money Stock Control: Problems, Solutions, and Consequences," co-sponsored by the Federal Reserve Bank of St. Louis and the Center for the Study of American Business, Washington University, October 30, 1981.

Table 4
Initial Borrowings Assumption Adopted at FOMC Meetings,
October 1979–August 1982
(Millions of dollars)

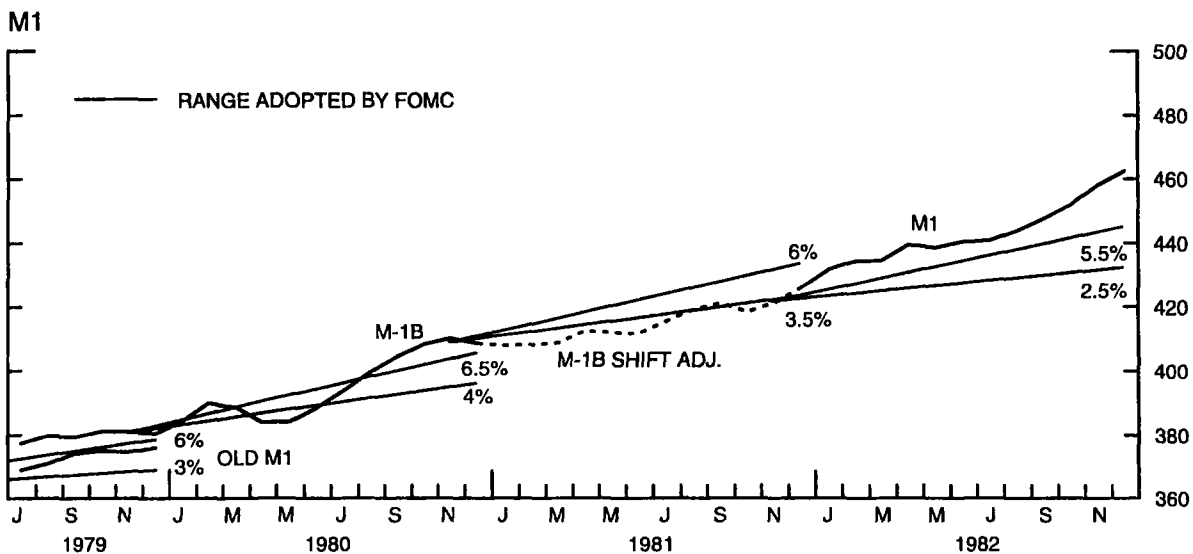
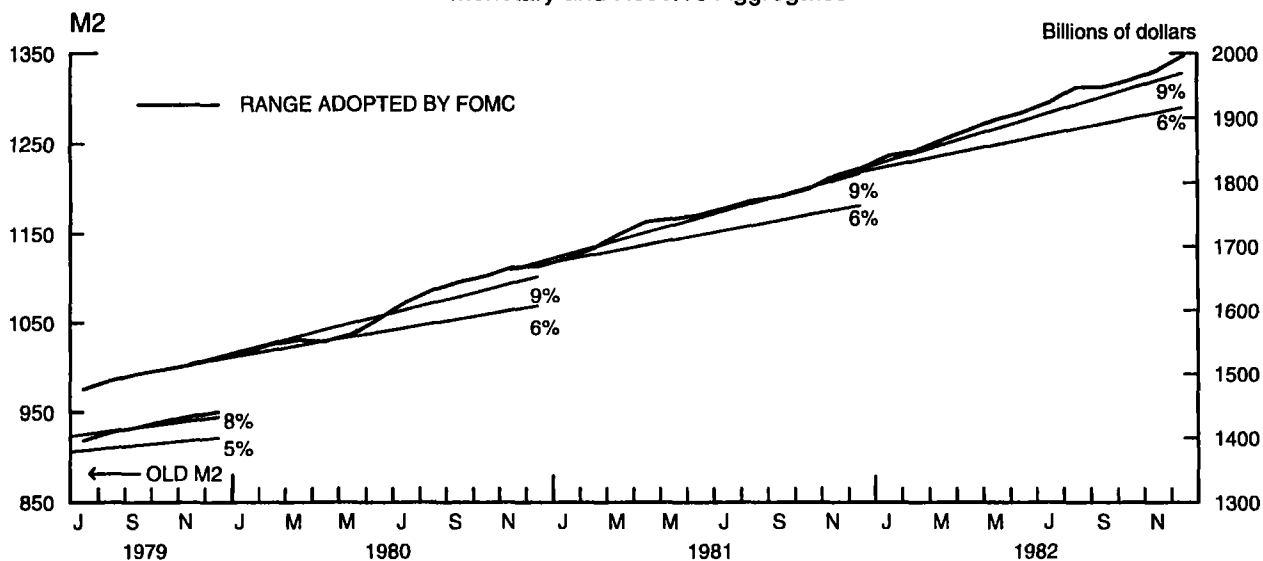
Date of meeting	Amount	Date of meeting	Amount
1979		1981	
October 6	1,500	February 3	1,300
November 20	1,700	March 31	1,150
1980		May 18	2,100
January 9	1,000	July 7	1,500
February 5	1,250	August 18	1,400
March 18	2,750	October 6	850
April 22	1,375	November 17	400
May 20	100	December 22	300
July 9	75	1982	
September 16	750	February 2	1,500
October 21	1,300	March 30	1,150
November 18	1,500	May 18	800
		August 24	350

the FOMC for the three years starting with October 1979 appears in table 4. This staff paper went on to reference these concepts in describing the operating procedures in practice (pp. 6–11), using exhibits like charts 1 and 2:

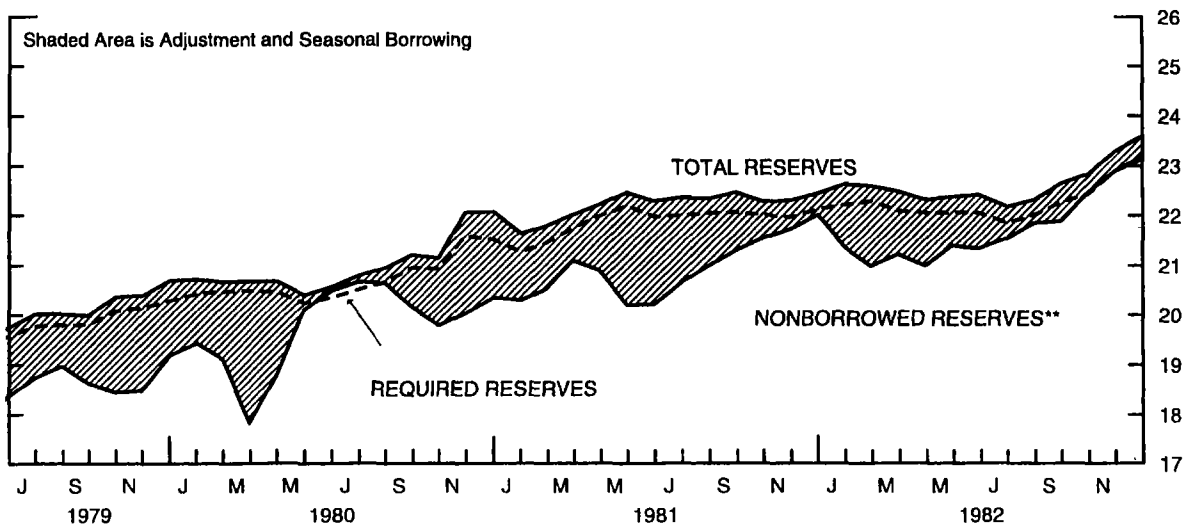
which provide a bird's-eye view of monetary policy since October 1979 that is far enough removed from the trees to bring the forest into focus. . . . The behavior of M1 and M2 levels relative to their annual ranges are shown by monthly data in the top two panels [of chart 1]. Old definitions of M1 and M2 are shown relative to their ranges for 1979, while redefined M-1B and M2 are shown [subsequently]. M-1B in 1981 is adjusted to remove inflows to NOW accounts estimated to have come from sources other than demand deposits.

Levels of selected reserve aggregates are shown in the bottom panel. Except for a temporary variation in precautionary holdings of excess reserves around the implementation of the Monetary Control Act, total reserves track required

Chart 1
Monetary and Reserve Aggregates

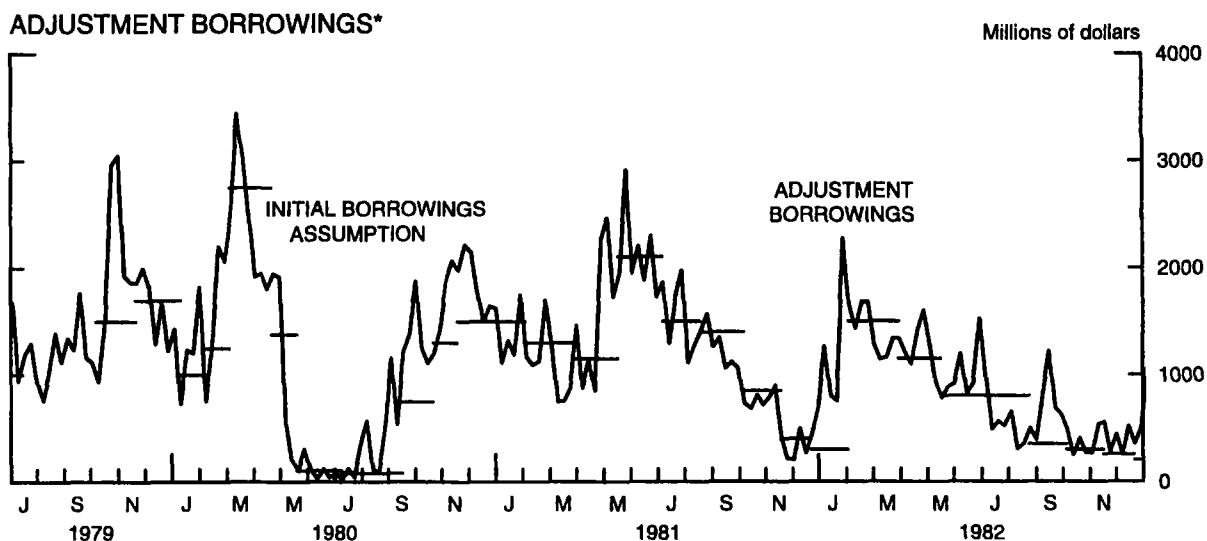


RESERVE AGGREGATES*

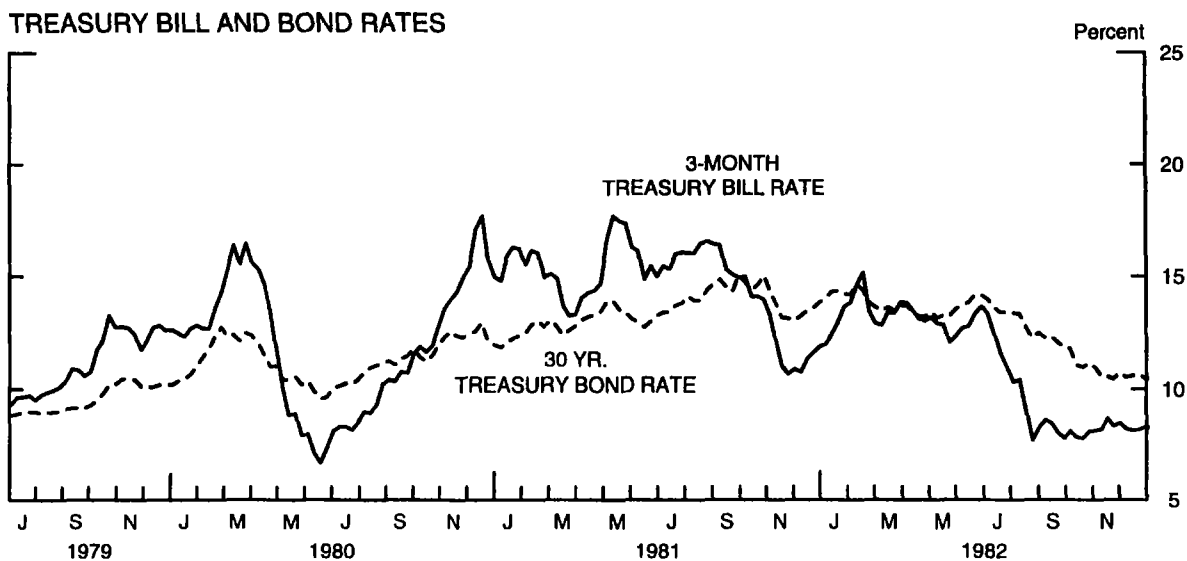
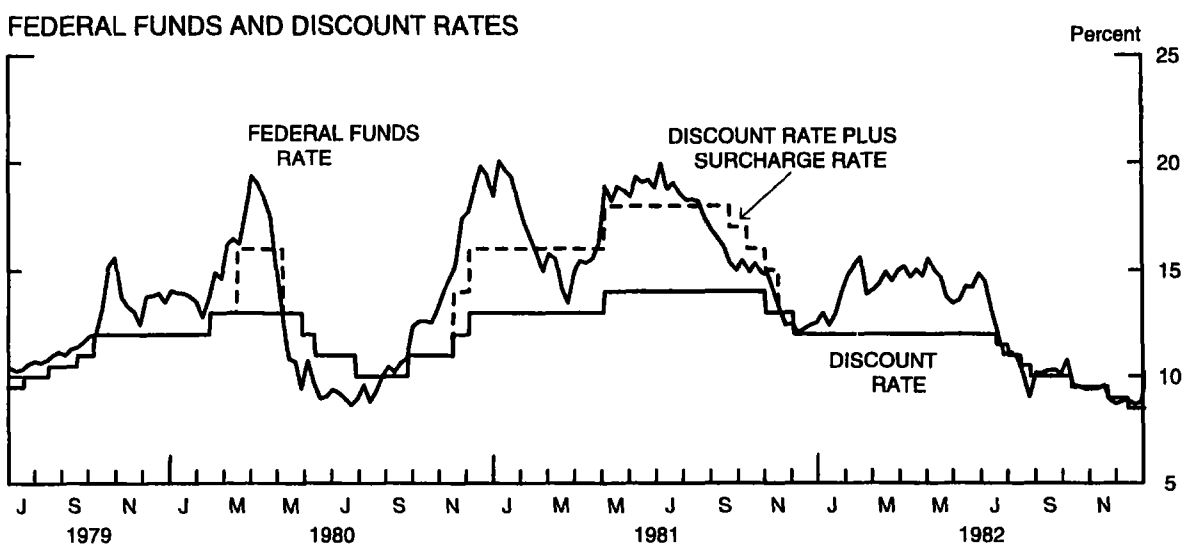


* The reserve aggregates series have been adjusted to remove discontinuities associated with changes in reserve requirement ratios.
**Includes extended credit.

Chart 2
Adjustment Borrowings and Interest Rates



* includes seasonal borrowing



reserves fairly closely. The shaded area between total reserves and nonborrowed reserves represents adjustment (and seasonal) borrowings at the discount window. . . .

The relationship between the amount of adjustment borrowings and the spread of the funds rate over the discount rate is indicated by weekly data in the top two panels of [chart 2]; the spread clearly tends to vary directly with adjustment borrowing.

The horizontal lines in the top panel represent those levels of the initial borrowings assumption . . . The figure clearly shows that induced movements or discretionary actions have occasionally caused borrowings to differ significantly from the level assumed in constructing the initial reserve paths. Substantial movements in the initial borrowing[s] assumption itself from one intermeeting period to the next also have occurred upon occasion.

The relationship--such as it is--between the federal funds rate and both the three-month Treasury bill rate and the thirty-year Treasury bond rate may be seen by comparing the middle and bottom panels of [chart 2].

The last financial relationship relevant to monetary control is the money demand function. It is the final one to be examined in the context of [charts 1 and 2]. The nexus going from interest rates to money demand is captured in the bottom panel of [chart 2] set against the top two panels of [chart 1]. Any indirect connection going from interest rates to real income and prices and then back to money through its demand function is, of course, only implicit in the figures, and the independent effects of the real sector, prices, and other factors on money demand are ignored altogether.

Unfortunately, at this stage the eyeball technique runs into trouble. Although turning points in money are generally preceded or accompanied by movements in interest rates in the opposite direction, as upswings in money typically reverse downswings (and vice versa), no clearcut money demand relationship between interest rates and money leaps out from the figures. What impresses me in this comparison is another relationship. Money and short-term interest rates have tended to move in the same direction, with turning points in money leading turning points in interest rates typically by a month or so.

What is the proper interpretation to be placed on the empirical regularity of movements in short-term interest rates tending to follow movements in money with only a brief delay over this period? The answer should be obvious from our previous discussion, and yet it is rarely even noted by academic economists making pronouncements about such relationships. The data are essentially tracing out an upward sloping money supply function over

intervals of a month or more created by the nonborrowed reserves target operating procedures. For example, a nontargeted rightward movement in the money demand schedule raises total reserves demanded relative to the nonborrowed target, which, in turn, automatically increases adjustment borrowings and tends to push up the federal funds rate. Expectations of future federal funds rates then are adjusted upward, also partly in response to the publication of the unexpectedly stronger money statistics and their perceived implications for future reserve demands and supplies; this causes other short-term rates to come under upward pressure. On occasion, the Federal Reserve also takes discretionary action to lower the nonborrowed reserves target relative to the total reserves target or to raise the discount rate, thus further boosting the interest rate impact of the initial surge in money demand. . . .

This temporary leading relationship between money and bill rates is explained largely, I believe, by a combination of factors that are generally ignored by academic analysts. The factors include: (1) the two-week lag in required reserve accounting that delays the impact of changes in deposits on required reserves; (2) the carryover privilege, which permits depository institutions to delay at least some of the reserve position adjustments implied by deposit swings for an additional week beyond the time their required reserves are affected; (3) the unavoidable delay in data collection and hence publication of the monetary aggregates, which prevents market participants from knowing immediately of money stock developments and simultaneously incorporating this information into market interest rates.

The positive association, aside from this brief delay, between money and interest rates traced out by the data implies that the downward sloping money demand schedule (in the interest-rate-money space) has varied over a much wider range than the upward sloping money supply schedule. Thus, there is a *prima facie* case that the explanation for the observed variation in interest rates and the money stock over this . . . period should be sought primarily in an examination of the instability of the money demand schedule. This analysis suggests that the observed variation in short-term interest rates during the last two years primarily represented Federal Reserve resistance through nonborrowed targeting to shifts in the position of the money demand schedule. Because the money supply function has a positive slope, instability in the observed stock of money, though muted, will accompany instability in the position of the money demand schedule.

The Federal Reserve dealt with disturbances to the demand for money, especially narrow money, as best it could. As charts 1 and 2 indicate, for a couple of years it allowed variations in demand to show through to an important degree in partly offsetting fluctuations in interest rates. However, as 1982 wore on, the Federal Reserve offered less and less resistance to divergences from targets, thus increasingly acquiescing in those developments. In so doing, and partly as a result of the unpredictable money demand, for M1 especially, the Committee over time placed

more and more emphasis in setting its policy stance on nonmonetary factors in the economy. The Federal Reserve discovered that pragmatic money targeting could not be done on a computer, as Milton Friedman had advocated. Communicating the ins and outs of monetary targeting in practice similarly was not easy.

Redefining the Monetary Aggregates

February 4–5, 1980

Early in 1980, the FOMC redefined the monetary aggregates to better capture recent monetary developments, including innovations, “that have altered the meaning and reduced the significance of the old measures.”⁵⁷ The annual ranges that February were stated in terms of the new definitions. The specified growth rate bounds for 1980 were 4 to 6½ percent for M-1B, which was defined to include automatic transfer accounts and negotiable order of withdrawal (NOW) accounts in the state of New York, and 6 to 9 percent for M2.

Implementing Credit Controls

March 14, 1980

At the momentous October 6, 1979, FOMC meeting, President Mayo of the Federal Reserve Bank of Chicago asked Chairman Volcker about controls. The transcript reads:

Chairman Volcker. . . . My reaction--which on the basis of some earlier discussions I think is shared by some other Board members and by people in the Administration who at the very least would have to trigger the control mechanism when we're talking about domestic credit controls--is that of all the options one could think of theoretically, that is probably the most dangerous in terms of the business situation. That's because a control program that really bites at all might lead to [undesirable] reactions. For instance, grave questions might be raised about whether financing was available for some of the inventory that one would like to see financed. And all the anticipatory effects, with people trying to protect themselves, would [induce] a very dangerous course [for the economy] at this particular juncture in the business cycle. The feeling is that there is some danger, which people will [assess in terms of different probabilities] of the economy having a most severe inventory reaction and indeed [that controls might] even inhibit planning for capital spending that we wouldn't want to inhibit.⁵⁸

In his Humphrey-Hawkins testimony before the House Banking Committee on February 19, 1980, Chairman Volcker said, “The problems are absolutely horrendous, . . . and I would suggest to you that, after all is said and done, controls don't really deal with the basic causes of inflation.”

⁵⁷ Thomas D. Simpson, “The Redefined Monetary Aggregates,” *Federal Reserve Bulletin*, February 1980, p. 97. This article followed up on an earlier paper, “A Proposal for Redefining the Monetary Aggregates,” *Federal Reserve Bulletin*, January 1979.

⁵⁸ Unedited transcript of the October 6, 1979, FOMC meeting, p. 12.

Three weeks later, on March 14, the Federal Reserve Board, following the wishes of the Carter Administration,

announced a program of emergency credit controls--supply limitations that covered not only commercial banks but also the unregulated money-market funds and all retail companies that issued credit cards, from Sears, Roebuck to Mobil and Exxon. The banks, whose lending had expanded by more than 17 percent [at an annual rate] in February, would be limited to 9 percent growth in new credit. . . .⁵⁹

Board Vice Chairman Fred Schultz was quoted by Greider (p. 187):

We really didn't think we had hit the mule with a two-by-four. We thought we were using a light switch. The idea was not to make the economy go into the tank—it was supposed to allow the economy to grow but without the credit excesses. Instead, the consumer got it into his head that the government was telling him not to use credit. The darned economy just fell off a cliff.

Because bank loans tumbled, demand deposits were extinguished. Also, the spending “scale variable” affecting the demand for transactions balances turned down sharply. Consequently, the stock of M1 plunged. The new procedures allowed borrowed reserves to fall to frictional levels, and the Board eliminated the discount rate surcharge and, in successive steps, cut the regular discount rate. As a result, the federal funds rate dropped abruptly, providing some support to the economy. Then, as the problems with the program became more generally recognized, the Board announced on May 22 a partial phaseout and on July 3 a full dismantling, causing these various developments to be reversed.

Resisting Setting Annual Ranges for the Next Year July 9, 1980

Experience with the extreme volatility of desired holdings of transactions balances was fresh for the FOMC going into its July 9 meeting. Small wonder that the Committee's initial decision was as laid out in its Humphrey-Hawkins report to the Congress:

While there is broad agreement in the Committee that it is appropriate to plan for some further progress in 1981 toward reduction of the targeted ranges, most members believe it would be premature at this time to set forth precise ranges for each monetary aggregate for next year, given the uncertainty of the economic outlook and institutional changes affecting the relationships among the aggregates.

Chairman Volcker's prepared testimony contained a variation on the theme:

59. William Greider, *Secrets of the Temple*, p.182. Greider also quotes the previous passage from Chairman Volcker before the House Banking Committee.

I have emphasized the FOMC's intention to work toward the lower levels of monetary expansion over time. In reviewing the situation this month, the Committee felt that, on balance, it would be unwise to translate that intention into specific numerical targets for 1981 for the various monetary aggregates at this time. That view was strongly reinforced by certain important technical uncertainties related to the introduction of negotiable order of withdrawal (NOW) accounts nationwide next January, as well as by the need to assess whether the apparent shift in demand for cash that took place in the spring persists.

The aftermath of that decision was suggested by an intriguing passage in the policy record for that July 9 meeting:

Subsequent to the meeting, Chairman Volcker advised the Committee that its attempt to cut through the institutional uncertainty affecting the behavior of and relationships among the various monetary aggregates and to describe the broad substance of its intent with respect to monetary growth ranges for 1981 apparently has led to some misunderstanding at the monetary oversight hearings before the Senate and House banking committees on July 22-23. In an attempt to clear up that misunderstanding, the Chairman recommended that the Committee indicate its general intent of looking toward a reduction in ranges of growth for M-1A, M-1B, and M-2 for 1981 on the order of $\frac{1}{2}$ percentage point, abstracting from the institutional influences affecting the behavior of the aggregates.

On that July 29 conference call, the Committee voted to approve the Chairman's recommendation. Perhaps the Congress reacted in this way because it viewed the ranges as the primary communication device extant to inform it about plans for future monetary policy.

Accounting for Nationwide NOWs with Shift Adjustment February 2-3, 1981

The Depository Institutions Deregulation and Monetary Control Act of 1980, which was enacted on March 31, 1980, authorized nationwide NOW accounts as of year-end 1980. Staff analysis before the Committee's February 2-3, 1981, meeting suggested an appreciable boost to M-1B, the narrow aggregate that would include nationwide NOW accounts. At the meeting, the Committee selected an M-1B range for the year that was adjusted for shifts into nationwide NOWs. It reduced its shift-adjusted M-1B range by $\frac{1}{2}$ percentage point from the M-1B range sought in the previous year—bringing it to $3\frac{1}{2}$ to 6 percent. It maintained the same 6 to 9 percent specifications for the M2 range used for 1980.

Evaluating the New Monetary Control Procedures February 1981

On the first anniversary of the change in monetary control procedures, the Federal Reserve System staff undertook a review of the new techniques. The findings were published in

February 1981.⁶⁰ The Federal Reserve's Humphrey-Hawkins Report to the Congress noted that the study examined the experience in "considerable detail."⁶¹ Milton Friedman characterized the publication as an "excruciatingly detailed analysis of the experience since October 6, 1979."⁶² This detail did not keep the *Federal Reserve Bulletin* from offering a concise summary of the research:

The operating procedure proved flexible enough to permit some accommodation in the short run to last year's unexpected shifts in money demand, and worked to limit the extent to which changes in demands for goods and services were reflected in actual money growth.⁶³

The Federal Reserve gave the results a lot of play, ranging from a press conference to two conferences for economists⁶⁴ to an extended discussion in the aforementioned Humphrey-Hawkins Report⁶⁵ to a *Bulletin* article by Stephen Axilrod.⁶⁶ Peter Sternlight and Stephen Axilrod vied in person with Robert Rasche and Allan Meltzer in a heralded debate at the Ohio State University that was published in the *Journal of Money, Credit and Banking*,⁶⁷ and two of the study's papers were published by Karl Brunner, the editor of the *Journal of Monetary Economics*.⁶⁸

Aiming at the Upper Bound of a Constant Annual M1 Range June 30–July 1, 1982

At its June 30–July 1 regular meeting and its July 15, 1982, conference call to finalize the ranges, the FOMC considered whether some increase in the upper and lower bounds for money growth would be in order in light of strong liquidity demands over the first half and a more restrictive congressional budget resolution. "However, the Committee concluded," according to the July report to the Congress,

based on current evidence, that growth this year around the top of the ranges for the various aggregates would be acceptable. The Committee also agreed

60. Federal Reserve Staff Study, *New Monetary Control Procedures*, vols. I and II, Board of Governors of the Federal Reserve System, February 1981.

61. "Monetary Policy Report to Congress," *Federal Reserve Bulletin*, March 1981, p. 203.

62. Milton Friedman, "Monetary Policy: Theory and Practice," lecture delivered July 5, 1981, *Journal of Money, Credit and Banking*, February 1982.

63. *Federal Reserve Bulletin*, April 1981, Table of Contents.

64. The conference for academic economists was April 17, 1981, with lead-off statements from Karl Brunner and Stephen Goldfeld, and the conference for market economists was April 21, 1981.

65. Pp. 201–05 and the appendix.

66. Stephen H. Axilrod, "New Monetary Control Procedure: Findings and Evaluation from a Federal Reserve Study," *Federal Reserve Bulletin*, April 1981.

67. "Is the Federal Reserve's Monetary Control Policy Misdirected?" *Money, Credit and Banking Debate*, *Journal of Money, Credit and Banking*, vol. 14, no. 1, February 1982.

68. P. A. Tinsley, P. von zur Muehlen, and G. Fries, "The Short-Run Volatility of Money Stock Targeting," *Journal of Monetary Economics*, 10, 1982, and David E. Lindsey, Helen T. Farr, Gary P. Gillum, Kenneth J. Kopecky, and Richard D. Porter, "Short-Run Monetary Control. Evidence under a Non-Borrowed Reserve Operating Procedure," *Journal of Monetary Economics*, 13, 1984.

that possible shifts in the demand for liquidity in current economic circumstances might require more than ordinary elements of flexibility and judgment in assessing appropriate needs for money in the months ahead.

The Congress that received this report apparently was not in a receptive mood. By mid-1982, the honeymoon between the Federal Reserve and the Congress that the new operating procedures had started in early 1980 was over. Intensifying the tensions, the Democratic majority had split from the Republican minority after Ronald Reagan's election to the White House.

The macro-economy was worsening prior to the House Banking's second monetary policy report for 1982. The unemployment rate rose to 9.8% in July. Monetary policy had eased early in the year, in that the rate of money growth had accelerated. Short-term rates had eased, but long-term rates remained high. In July, the Fed testified that it would retain the same ranges of monetary growth for 1983 as for 1982. Paul Volcker then testified that the Fed intended to achieve monetary growth at the top of 1982 ranges it had set in February, and was prepared to tolerate growth above the top of the range if warranted by stronger-than-anticipated money demand.

The second monetary policy report for 1982 by House Banking was another partisan Democratic document; Republicans again dissented. The report noted gleefully that "by retaining its 1982 targets into 1983, the Federal Reserve has in effect repudiated" the "Administration's monetary theory that monetarist targets should be reduced by some fixed amount each year and every year." Still, the Committee was critical of the Fed: "If the Federal Reserve had been more alert to the economic and financial risks associated with the Administration's economic policies and had rejected a reduction in targets last year, the American people might have been spared much of the present distress."

In the Committee's view, while it was pleased with monetary easing, the Fed had not been fully responsive to the Committee's April recommendation to ease monetary targets as Congress worked to reduce budget deficits. While the Congress had "made progress towards restoring fiscal responsibility"—and thus, doing its part to improve the policy "mix"—the Committee complained that "(e)very effort Congress makes to close the budget deficit has been reversed by additional deficits stemming from the Administration and Federal Reserve policy of reducing inflation by depressing the economy."

The report stated that "in light of the monetary policy directive and substantive budget actions of the Budget Resolution, the Federal Reserve needs to do more to lower interest rates and facilitate economic recovery." Further, if M1 velocity is depressed, "the M1 aggregate may need to be

increased even more than the ‘around the top of the ranges’ proposed by the Federal Reserve if there is to be acceptable nominal GNP growth.”

The [House] Committee was concerned that changing the monetary target from the mid-point to the upper end of an unchanged range “seriously obscures” the Fed’s intentions with regard to monetary policy. “By changing its ostensible target without changing its target range, the Federal Reserve in its July 20 report seriously obscures its intentions on monetary policy and fails to act in consistency with the reporting requirements of the Humphrey-Hawkins Act. . . . Under that law, the Federal Reserve is required to report ranges of growth of the monetary aggregates and not some obscure hybrid of ranges and targets-within-ranges.” The Committee was concerned that the Fed’s policy “could be viewed by market analysts as abandonment of any kind of target scheme.”

The report continued “(i)f changed conditions merit a change in the targets, then a change in the ranges should be reported. If ranges are not changed, they should be hit. The current policy of ‘brinksmanship’ in which the Federal Reserve announces that it is aiming for the ceiling of its ranges, is unsatisfactory. The Federal Open Market Committee should, at its next meeting, correct its presentation of its targets and report either a change or no change in its announced aggregate-growth target ranges.”

Because of the instability of monetary velocity and the breakdown in the link between monetary aggregates and nominal GNP, this report also raised “serious questions about the continued reliability of the M1 aggregate and monetary aggregates in general as targets for monetary policy.” The report thus asked the Fed to report to Congress on two alternative approaches-- adoption of a credit aggregate, or establishing targets for long term interest rates or real interest rates.⁶⁹

Perceiving the Need for More Flexibility in Policy Design

July 1, 1982

From information publicly available in the mid-1980s, as well as interviews with participants, William Greider described monetary policy in a way that was analogous to a retaining wall giving way in mid-1982.

On July 1, the Federal Reserve turned. Bank reserves would be supplied more generously, the money supply would expand more rapidly and credit conditions would be relaxed. As a result, short-term interest rates promptly started falling. Within three weeks, the Fed Funds rate and other short-term

69. Winthrop Hambley, “Information for Governor Meyer,” September 8, 2000, pp. [10-11], with a cover note from Don Winn, “Background Materials on Congress and Monetary Policy,” September 25, 2000.

rates would subside at long last to their normal level—below long-term interest rates. . . . Now, one could reasonably predict, the economy [sic] recovery would at last have a chance to begin. . . .

At the conclusion of debate, the policy directive adopted by the FOMC was couched in the usual euphemistic language and only insiders would have grasped that the Fed was executing a dramatic reversal. The short-run money targets were raised, instead of lowered. The [C]ommittee decreed blandly that “somewhat more rapid money growth would be acceptable.”

It was a historic moment.⁷⁰

At the midyear meeting, the funds rate was about 14¼ percent, and the discount rate was 12 percent. By the August 24 meeting, the funds rate had fallen to 9 percent, while the discount rate had been reduced in three steps to 10½ percent. On August 27, the Board reduced the discount rate to 10 percent, and funds subsequently traded around that level until the meeting in early October.

Chairman Volcker expressed his evolving attitude at the August FOMC meeting:

Chairman Volcker. . . . We’re in a very sensitive period, not just economically, but in terms of the markets and interpretations and in fact concern--and I’m afraid to say to some degree justified concern--about the stability of the banking system. I am sure that this is a time to be delicate and sensitive. How we express that and how we approach it is what is at issue. Very technically, as Steve mentioned, we’re in one of these phases when it’s hard to set a reserve path with great certainty because we’re on the margin of losing touch with rates in the market. This problem occurs if we get extraordinary borrowing from some particular banks that have their own problems, and that can’t be considered borrowing in the ordinary way we usually consider it. Just how it should be considered is a little hard to tell in advance, I think, before we see it and before we see the timing and the amounts. But it’s another complication in [the way of our] being mechanical in this process at the moment. I don’t think we can afford to be overly mechanical.⁷¹

At the FOMC’s conference call on September 24, Chairman Volcker said the following:

I think this is a situation in which I would not find a mechanical application of the reserve provision rules suitable, given the certainty that would lead to a decided change on the tightening side from recent money market conditions.

70. William Greider, *Secrets of the Temple*, pp. 506–07 (order of paragraphs reversed).

71. Transcript of the August 24, 1982, FOMC meeting, p. 18.

In terms of what seems desirable, that runs against any other broader background that we see going on. I feel that at least for this brief period before we actually meet in a Federal Open Market Committee meeting, which is about a week and a half off, or seven working days off, we should not follow--and I would not intend to--a mechanical application of those reserve provisions but rather stabilize market conditions somewhere close to where they are presently or even slightly below where they have been in the last couple of weeks.⁷²

Implementing Monetary Policy

1980–82

Despite the seismic rumblings portending the eventual demise of the new operating procedures, the daily routine of the staff engaged in the mechanics of monetary targeting remained much the same. Based on the short-run targets for money growth and a new initial borrowings assumption, the Board staff, as overseen by Stephen Axilrod, would first derive weekly target paths for the monetary aggregates over a control period constituting all or one-half of the upcoming intermeeting period. Then the staff would construct implied weekly paths for total and nonborrowed reserves.

As the intermeeting period progressed, the staff made weekly adjustments to the targeted nonborrowed reserves path to reflect new information. New data could require technical “multiplier adjustments.” The path also would be revised to reflect misses from the implied weekly level of borrowed reserves. The unexpected movement in the average level of borrowings for the control period was essentially determined by the projected divergence of money from its target times the required reserve ratio on transaction deposits. Thus, an early miss in borrowing would have to be made up later. The path for nonborrowed reserves was revised each week both to attain the average level of borrowings implied by projected monetary developments over the entire control period and to equalize the implied levels of borrowings in each upcoming week.

These adjustments to the nonborrowed reserves path were virtually automatic. In addition, in each week of the intermeeting period, Chairman Volcker had the opportunity to make, and at times before mid-1982 did make, adjustments to the nonborrowed reserves path to amplify the automatic response.

Communicating Monetary Policy

1980–82

A communications end must have been effectively served by the fanfare surrounding the announcement of the new monetary control procedures, the testimonies by Chairman Volcker, speeches by Board members and Reserve Bank presidents, the official explanations, the Humphrey-Hawkins reports (including the ranges for money and credit and key macroeconomic variables), the staff studies, and the unofficial staff papers. There can be little doubt that the

72. Transcript of the September 24, 1982, FOMC conference call, p. 1.

general principles underlying the switch to a more determined and effective anti-inflationary policy and to a nonborrowed reserves operating target to help control M1 were well explained to any member of the public willing to listen. And the FOMC must have gotten these messages across at least to some extent. To be sure, the FOMC did not quantify its inflation goal, but over time it must have convinced most observers that it meant business. While the Federal Reserve did not publish its short-run target paths for M1 or reserves, let alone the Federal Reserve's daily balance sheet or the reserve factor forecast made by staff at the Trading Desk and the Board, everyone on the outside certainly could see the new operating procedures working themselves out as advertised in practice in money markets. Market participants understandably would have been somewhat skeptical initially that real reforms would continue when the going got rough, so they needed to see the lower inflation results before they would fully believe that a "regime change" had occurred. But apart from a few professional "Fed watchers," who could be counted on one's fingers and toes, everyone else on the outside did not want to know about the detailed plumbing of the new monetary control procedures. Instead, they just wanted to be sure that those on the inside were in fact minding the store and "doing it right."

The communications problems that did arise concerned the public's basic understanding of what constituted "doing it right." For example, in carrying out its monetary control task, accommodating actual M1 growth to significant shifts in its demand function caused a problem for communications. To be sure, not resisting demand factors other than prices, real income, or interest rates when they exert a considerable influence on the growth of M1 would prevent induced effects on output or inflation. But at first glance, the central bank would seem irresponsible in doing so. Accommodating aberrant demand behavior to a casual observer looks just like the loose monetary control that characterized the 1970s. Monetarist critics would jump on any sizable or prolonged deviation of actual money growth from k percent as likely to induce economic instability.

Still, monetary targeting had some clear advantages from a communications perspective. All along, a view had been expressed—for example, by President Frank Morris of the Federal Reserve Bank of Boston—that monetary targeting represented a convenient cover that the FOMC used to mask its real intention of pushing up interest rates. Although interest rates did rise appreciably in late 1979 and early 1980 as well as later on, as may be seen in chart 2, they also fell abruptly and sharply in the spring of 1980 as M1 plunged with the impact of credit controls on bank loans and deposits. This evidence tends to confirm what was being said at the time by Federal Reserve officials: The FOMC was genuinely trying to control M1 growth over the intermediate run and was allowing short-term interest rates to fluctuate much more than before. Interest rates were free to move as implied by the interaction of a fairly unstable money demand with a nonborrowed reserves operating target. These automatic rate movements were amplified importantly by reactions to M1 deviations from the near-term target trajectory in the form of occasional judgmental adjustments to the nonborrowed reserve path in the opposite direction for other than de minimis induced variations in borrowed and total reserves. In addition, the Board could make discretionary adjustments to the discount rate in the same direction as the movement in the funds rate. As a result of these procedures, overall variations in short-term interest rates would be the largely automatic consequence of M1 control. Thus, when the predictable congressional criticism of high interest rates came, the FOMC could reply

truthfully, unlike the fox, in saying “Hey, ain’t nobody here but us chickens. We’re not raising interest rates. We’re only targeting the money supply.”⁷³

As the experience with M1 targeting continued, however, the frequent occurrence of large money demand disturbances offset these advantages. Another worry began to emerge as well. Even absent exogenous shocks to the M1 demand function, was it the case that the lag structure of interest rates on money demand was itself producing money cycles—perhaps even explosive ones—in response to initial interest rate moves intended to be stabilizing?⁷⁴ In any event, as M1 swung first above, then below, and then above its targeted annual growth range, there was some risk that the movements reflected poorly on the Federal Reserve’s competence. A related concern was that, even if the FOMC could achieve a reasonably smooth intermediate-run path for M1, the consequences for the economy might not be salutary. The economy in fact could still show instability owing to the inherent dynamics of monetary targeting itself—as the effects of a tendency toward instrument instability caused cycles in short-term interest rates—and to the interactions of the various relevant relationships. On the latter point, with adaptive expectations, steady money growth would cause economic cycles in an IS-LM model with an accelerationist Phillips curve mechanism.⁷⁵

When inflation was still public enemy number one, such concerns remained limited because the economy needed to have shock therapy, which relegated many of the technical concerns to a second order of importance. But as the FOMC succeeded in getting inflation under control, these issues became more worrisome. Thus, somewhat paradoxically, the more success monetary targeting achieved in taming inflation, the more its intellectual foundations came to be questioned, even within the Federal Reserve itself.

This paradox held true for another reason as well, so that a significant degree of disinflation inevitably began to shake another intellectual pillar of monetary targeting. At least this was the case for the type of monetary targeting that could be distilled into a simple message and readily communicated to and grasped by the public—such as Milton Friedman’s *k*-percent growth rate rule. Besides involving the other problems, such a simple approach ignored the following issue: A permanent drop in the inflation rate would bring in its wake a lasting fall in the level of nominal interest rates—both short- and long-term. But given the incomplete adjustment of marginal own rates on transaction deposits, the marginal opportunity cost of holding M1 would experience a once-and-for-all decline. A result would be a similar one-time boost to the quantity of M1 demanded, which of course would be greater with a larger interest elasticity of demand. In the real world, though, this process would not be instantaneous but would be drawn out in

73. This characterization of the Federal Reserve apparently was originated by Charles L. Schultz, then Chairman of the Council of Economic Advisers. See William Greider, *Secrets of the Temple*, p. 120.

74. Although work on instrument instability by David Jones, then an economist in the Board’s Banking Section, suggested that the induced M1 cycles would have been only damped, not explosive, these results likely would have provided small comfort to policymakers.

75. Jared Enzler and Lewis Johnson, “Cycles Resulting from Money Stock Targeting,” Federal Reserve Staff Study, *New Monetary Control Procedures*, vol. I. Board of Governors of the Federal Reserve System, February 1981.

time. Consequently, the annual ranges for M1 growth in a lengthy transition period would, in principle, need to be augmented to incorporate this effect on the transactions demand for money.⁷⁶ Less-informed observers would see the higher growth ranges and conclude that the Federal Reserve had lost its appetite for fighting inflation! Yet if the Federal Reserve kept the original ranges unchanged, or even rached them down further, it would be putting in place far too much restraint. This dilemma is another example of the difficulty that complexity poses for communication.

76. The FOMC received a discussion of these and related issues that presumably did not give much aid to the rehabilitation of M1, which had been de-emphasized in October 1982. See S. H. Axilrod, "Money Growth and Price Stability," memorandum to Chairman Volcker, January 23, 1984, sent to the Federal Open Market Committee on January 24, 1984, with a cover memorandum from S. H. Axilrod. For background see Flint Brayton and David Lindsey, "M1 Growth along the Transitional Path to Price Stability," memorandum to Mr. Axilrod, January 13, 1984.

III. OCTOBER 1982 TO NOVEMBER 1989: DISINFLATION AND OPERATING ON BORROWED RESERVES

Altering Operating Procedures	69
Replacing nonborrowed with borrowed reserves, Fall 1982	69
Adjusting the Content of the Directive	71
Abandoning M1 temporarily, October 5, 1982	71
Converting to restraint on reserve positions, February 8–9, 1983	75
Introducing the tilt, November 15, 1983	75
Introducing the degree of pressure on reserve positions, January 30–31, 1984	75
Introducing the ranking of policy factors, March 26, 1985	76
Targeting reserve pressure flexibly, November 3, 1987	77
Defending the Need for Releasing the Directive with a Delay	78
Considering the pros and cons of immediate release, November 16, 1982	78
Replying to Peter Flanigan of Dillon, Read & Co., June 26, 1984	82
Writing to Representative Fauntroy, August 24, 1984	84
Responding to Senator Mattingly, July 18, 1985	86
Eliciting a critique of the defense of delay in the Merrill case, January 1986	87
Complying with Legislative Requirements in Conducting Policy	87
Adjusting the annual M2 range for MMDAs and demoting the M1 range, February 8–9, 1983, and July 12–13, 1983	88
Converting the internal Red Book to the public Beige Book, March 29, 1983	89
Tightening while not tightening: The Continental Illinois episode, Summer 1984	90
Dropping the annual M1 range, February 10–11, 1987	93
Eating humble pie along with the Thanksgiving turkey, November 22, 1989	93
Implementing monetary policy, 1980–89	93
Communicating monetary policy, 1980–89	99

III. OCTOBER 1982 TO NOVEMBER 1989: DISINFLATION AND OPERATING ON BORROWED RESERVES

Altering Operating Procedures

By the fall of 1982, the efficacy of the “new” operating procedures had been undermined by the increased instability in M1 demand. Partly as a result, other influences had gained in relative importance as indicators of real economic growth and inflation. To be sure, over the three years that followed October 1979, the FOMC had slowed the trend of money growth and essentially halved the rate of inflation. But real economic activity had stagnated, and unemployment had risen to a postwar record. The latter problems naturally were assuming a higher priority relative to inflation. The pressures of high interest rates and worldwide damping effects on spending seemed to be affecting the financial and economic health of households, businesses, and depository institutions alike. Thus, more flexibility in monetary policy implementation as well as design increasingly seemed warranted.

This chapter first describes the shift in operating procedures in the fall of 1982 and the revisions to the operational paragraph that followed in its wake. Next, the chapter presents the arguments for and against the immediate release of the directive that the Committee considered internally as well as the more defensive position put out for external consumption. Issues that arose in policy implementation during the 1980s are then examined. The chapter concludes by describing the FOMC’s rationale for its policy of rather opaque communication during most of the decade.

Replacing Nonborrowed with Borrowed Reserves

Fall 1982

The FOMC’s backing away from the new operating procedures was described as follows in late August 1984:⁷⁷

During October 1982, interpretation of M1 movements was complicated further by the nearly \$35 billion of all savers’ certificates scheduled to mature, a portion of which was likely to be placed, at least temporarily, in M1. . . . In addition, Congress had just authorized, effective in mid-December, the money market deposit account (MMDA). This ceiling-free account had limited transaction features and could be expected to attract M1 deposits into M2, though in uncertain amounts. In light of these circumstances, Chairman Volcker announced on October 9 that for the time being the [C]ommittee was placing reduced emphasis on M1 as a guide to policy relative to broader monetary aggregates. . . .

The de-emphasis of M1 in the fall of 1982, together with the more flexible strategy that followed regarding the monetary aggregates more generally, was mirrored in a shift in operating procedures. A nonborrowed reserves

77. David E. Lindsey, “The Monetary Regime of the Federal Reserve System,” in Colin D. Campbell and William R. Dugan, ed., *Alternative Monetary Regimes*, Johns Hopkins University Press, 1986, pp. 188, 190, 191, and 193. Paper delivered at a conference at Dartmouth College on August 22–24, 1984.

operating target is not well suited for controlling M2 and M3 because the vast bulk of their nontransaction deposits are not subject to reserve requirements. Beyond transaction deposits, subject to a 12 percent reserve requirement, the only component of the broader aggregates under the new reserve requirement structure of the Monetary Control Act of 1980 was composed of certain nonpersonal time deposits, subject to a 3 percent requirement. . . . Thus the nonborrowed reserves operating procedure, with its automaticity deriving mainly from variations in required reserves on transaction deposits, has to be modified if M1 is dethroned as the primary intermediate monetary target (or if a more judgmental approach is taken toward reacting to M1 movements).

Governor Wallich has explained that the Federal Reserve did not return to a federal funds rate operating target: “Since the fall of 1982, the nonborrowed reserve strategy and its automaticity have given way to a technique that allows the funds rate to be determined by the market, through the targeting of discount window borrowing from one reserve maintenance period to the next, implemented by allowing a flexible nonborrowed reserves path.”^[78] Over longer periods “the degree of restraint on reserve positions,” as reflected in the level of adjustment plus seasonal borrowings at the discount window, has been altered more judgmentally in response to movements in monetary aggregates relative to short-term objectives against the background of other economic and financial developments.

[T]his shift in operating procedures weakened the earlier . . . correspondence between movements in monetary aggregates relative to their ranges, on the one hand, and in discount borrowings and the federal funds rate on the other. . . . [S]hort-term interest rates since the fall of 1982 have displayed a much smoother pattern than they did during the previous three-year period.

Chairman Volcker made clear in his Humphrey-Hawkins testimony of February 16, 1983, that policy reactions to movements in monetary aggregates relative to their ranges were to be more flexible than they had been over the three years after October 6, 1979, with overall economic and financial developments allotted a larger role in determining the policy reaction. He concluded:

I neither bewail nor applaud the circumstances that have put a greater premium on judgment and less “automaticity” in our operations; they are simply a fact of life. In making such judgments, the basic point remains that, over time, the growth of money and credit will need to be reduced to encourage a return to reasonable price stability. The targets set out are consistent with that intent.

78. Henry C. Wallich, “Recent Techniques of Monetary Policy,” Federal Reserve Bank of Kansas City, *Economic Review*, May 1984, p. 26.

Tables 5 and 6 and chart 3 present FOMC decisions made at and between regularly scheduled meetings about the borrowings assumption beginning in October 1982 and the expected federal funds rate beginning in May 1983, both to November 1989.

Adjusting the Content of the Directive

To some extent, alterations in the operational paragraphs of the directive incorporated these changes in the implementation of monetary policy. Even so, aspects of the operating procedures that the Committee had adopted during the autumn of 1982 were not laid out in detail. Also, during the rest of the 1980s, the Committee introduced a number of innovations in the wording of the operational paragraphs, some of which would prove to be rather durable.

Abandoning M1 Temporarily

October 5, 1982

In the operational paragraph for the meeting on August 24, 1982, the growth of M1 over the June to September period still shared top billing with that for M2. By contrast, given the uncertain effects on M1 demand of the reinvestment of funds from the maturing all savers certificate and of the upcoming introduction of money market deposit accounts (MMDAs), M1 was conspicuously absent in the operating paragraph for the next meeting in early October 1982:

In all circumstances, the Committee seeks to maintain expansion in bank reserves needed for an orderly and sustained flow of money and credit, consistent with growth of M2 (and M3) in a range of around 8½ to 9½ percent at an annual rate from September to December, and taking account of the desirability of somewhat reduced pressures in private credit markets in light of current economic conditions. Somewhat slower growth, bringing those aggregates around the upper part of the ranges set for the year, would be acceptable and desirable in a context of declining interest rates. Should economic and financial uncertainties lead to exceptional liquidity demands, somewhat more rapid growth in the broader aggregates would be tolerated. The Chairman may call for Committee consultation if it appears to the Manager for Domestic Operations that pursuit of the monetary objectives and related reserve paths during the period before the next meeting is likely to be associated with a federal funds rate persistently outside a range of 7 to 10½ percent.

M1 was resuscitated so as to re-attain virtually normal status in the policy record by May 1983. But owing to a renewal of aberrant demand behavior, M1 was gradually de-emphasized again starting in July 1985, never to return to equal status with the broader aggregates.

Table 5
Borrowings Assumption Adopted by the FOMC,
October 1982–November 1989
 (Millions of dollars)

Date of decision	Amount	Date of decision	Amount
1982		1987	
October 5	300	April 30	400 ¹
November 16	250	May 19	500
December 21	200	September 3	600 ¹
1983		October 23	500 ¹
March 29	250	October 28	450 ¹
May 24	350	November 3	400
June 23	400–500 ¹	December 4	300 ¹
July 13	600–800	1988	
August 23	700–900	January 28	250 ¹
October 4	650	February 10	200
1984		March 29	300
March 27	1,000	May 7	400 ¹
October 2	750	May 25	500 ¹
November 7	575	June 22	550 ¹
December 18	300	June 30	600
1985		November 22	400
February 13	350	December 14	500
March 26	400	1989	
April 25	450 ¹	Early January	600 ¹
May 21	350	February 14	700 ¹
August 1	400 ¹	March 28	500
August 20	425	July 6	600
September 6	500 ¹	July 27	550 ¹
November 5	450	October 19	400 ¹
December 17	350	November 6	300 ¹
1986			
February 12	300		

NOTE. Excludes technical changes made by the Desk.

1. Policy setting made between meetings.

Table 6
Federal Funds Rate Expected by the FOMC, May 1983–November 1989
(Percent)

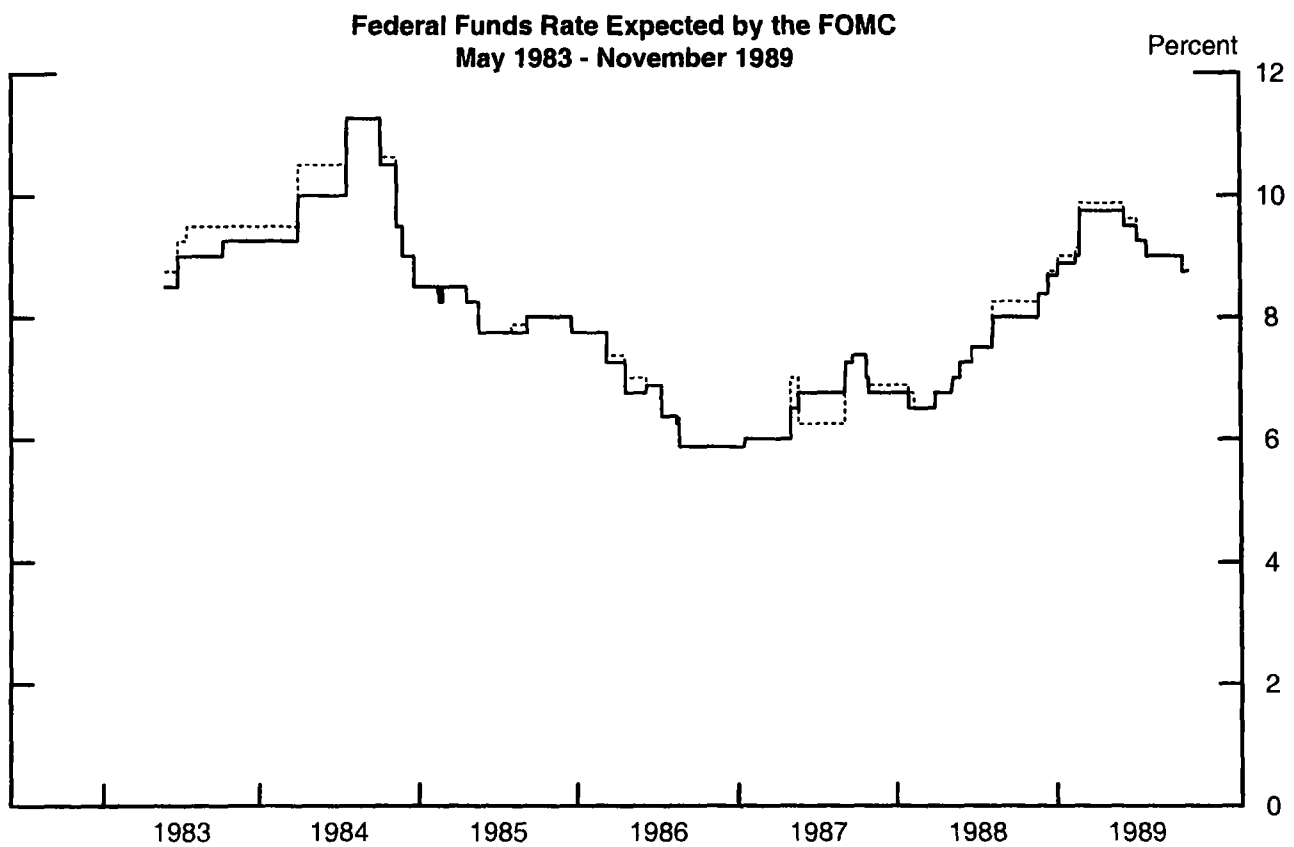
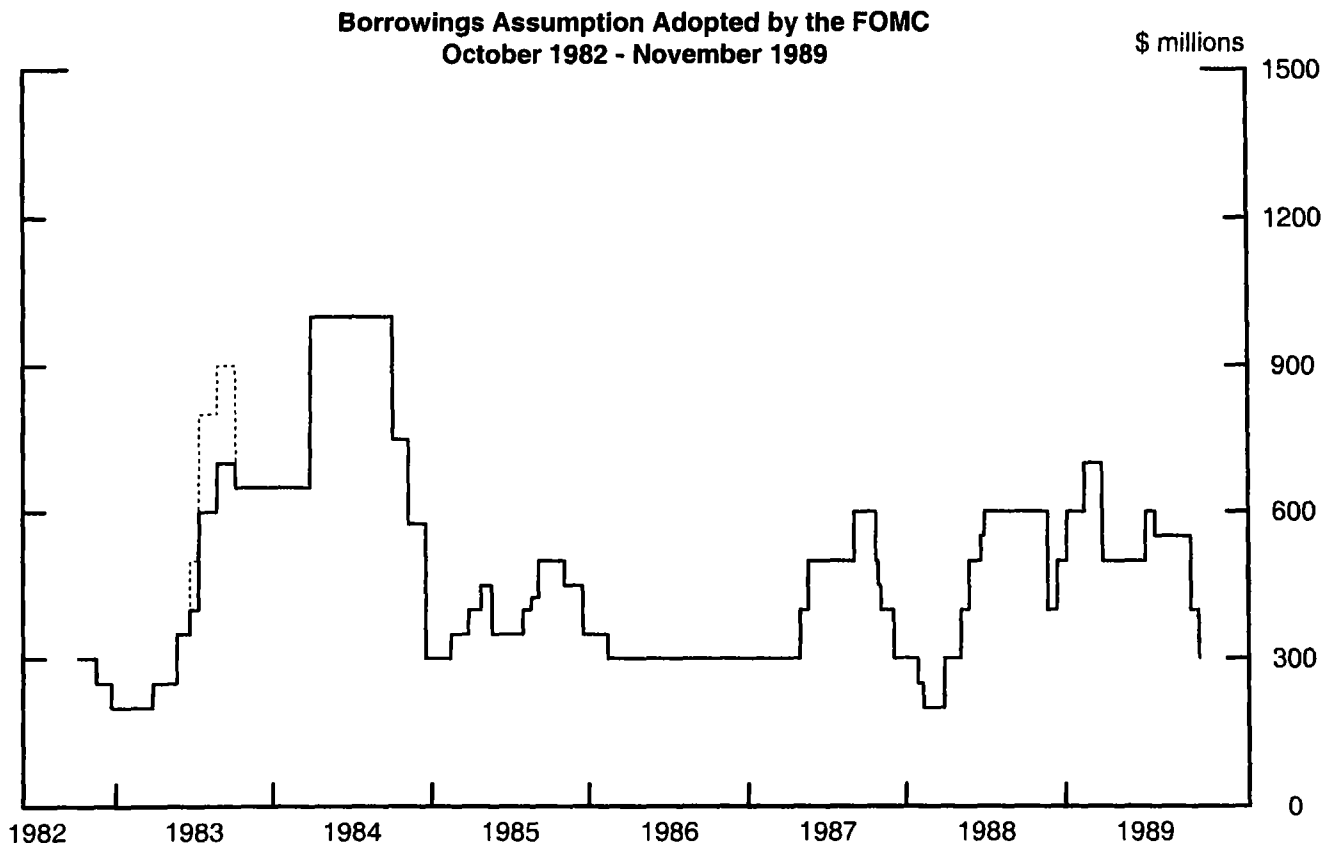
Date of determination	Rate	Date of determination	Rate
1983		1987	
May 24	8.5–8.75	January 15	6 ¹
June 23	9 or slightly higher	April 30	6.5 or somewhat higher ¹
July 13	9 or somewhat higher	May 19	6.75 or somewhat lower
October 4	9.25–9.5	September 3	6.75–7 ¹
1984		September 4	7.25 ¹
March 27	10–10.5	September 22	7.375
July 17	11.25	October 23	7 ¹
October 2	10.5–10.63	October 28	6.75–6.875 ¹
November 7	9.5	1988	
November 21	9 ¹	January 28	6.5–6.75 ¹
December 18	8.5	February 10	6.5
1985		March 29	6.75
February 13	8.25–8.5	May 7	7 ¹
February 21	8.5 ¹	May 25	7.25 ¹
April 18	8.25 ¹	June 22	7.5 ¹
May 17	7.75 ¹	August 9	8–8.25 ¹
August 1	7.75 or a shade higher ¹	November 22	8.375 ¹
September 6	8 ¹	December 14	8.625–8.75
December 17	7.75	1989	
1986		Early January	8.875–9 ¹
March 7	7.25 or a shade higher ¹	February 14	9–9.125 ¹
April 18	6.75 or slightly higher ¹	February 24	9.75–9.875
June 5	6.875 ¹	June 6	9.5–9.625 ¹
July 10	6.375 ¹	July 6	9.25
August 14	6.25–6.375 ¹	July 27	9 ¹
August 20	5.875 ¹	October 19	8.75 ¹
		November 6	8.5 ¹

NOTE. Excludes technical changes made by the Desk. The terms "shade," "slightly," and "somewhat" were used by the FOMC to represent (in ascending order of size) a range of values above or below a specific expected value for the federal funds rate when the Committee expressed its sense of the range in words rather than numbers.

¹ Policy setting made between meetings.

SOURCE. Memorandum, Bonnie Garrett [FOMC Secretariat] to Bill Gavin [Federal Reserve Bank of St. Louis], April 20, 2000 (the data were subsequently published in Daniel L. Thornton and David C. Wheelock, "A History of the Asymmetric Policy Directive," Federal Reserve Bank of St. Louis, *Review*, Sept./Oct. 2000, table B2).

Chart 3



Converting to Restraint on Reserve Positions

February 8–9, 1983

The operational paragraph in February 1983 made a veiled reference to the borrowed reserves operating target with these words:

For the more immediate future, the Committee seeks to maintain the existing degree of restraint on reserve positions.

The introduction of money market deposit accounts in early 1983 was distorting the broader aggregates enough to preclude mention of monetary growth in the operational paragraph for the February meeting. By the time of the policy record for the March 28–29 meeting, broad money was back in the FOMC's good graces, though M1 was still playing only a subsidiary role, and the phrase "degree of restraint on reserve positions" was repeated:

For the short run, the Committee seeks to maintain generally the existing degree of restraint on reserve positions, anticipating that would be consistent with a slowing from March to June in growth of M2 and M3 to annual rates of about 9 and 8 percent, respectively. The Committee expects that M1 growth of about 6 to 7 percent would be consistent with its objectives for the broader aggregates.

Over the remainder of the year, however, M1 was brought back, as noted, and the operational paragraph did not mention "reserve positions;" it used the more ambiguous phrase "degree of reserve restraint." (This term could refer either to a borrowing concept or to an aggregate concept such as nonborrowed reserves.)

Introducing the Tilt

November 15, 1983

In an innovation that would have a remarkable sixteen-year tenure before being usurped in early 2000 by the balance-of-risks statement, the "tilt" first appeared in the directive of November 15, 1983. In the following extract, the "tilt" brings in tow its constant grammatical companions, "would" and "might":

Depending on evidence about the continuing strength of economic recovery and other factors bearing on the business and inflation outlook, somewhat greater restraint would be acceptable should the aggregates expand more rapidly; lesser restraint might be acceptable in the context of a significant shortfall in growth of the aggregates from current expectations.

Introducing the Degree of Pressure on Reserve Positions

January 30–31, 1984

The operational paragraph in late January 1984 began to use the following more-descriptive phrase for borrowed reserves: "degree of pressure on reserve positions." This phrase would be kept in place not only through the 1980s but also through much of the 1990s. It lasted until

August 1997 and thus enjoyed a continuity of nearly thirteen years, until the explicit funds rate target finally replaced it.

The first detailed discussion in public of the revised operating procedures was in a talk by Governor Wallich on April 15, 1984. The talk was the basis of an article in the *Economic Review* published in May 1984 by the Federal Reserve Bank of Kansas City.⁷⁹ Perhaps the Committee members' delay in describing the new technique resulted from a reluctance to admit switching to a reserve measure so closely akin to the concept of "free reserves" (excess reserves minus borrowed reserves) that seemingly had been discredited in an earlier report to the Congress by Karl Brunner and Allan Meltzer.⁸⁰ They had correctly noted that using free reserves as an operating target essentially was akin to using "money market conditions." They had argued instead for targeting an aggregate reserve or base concept—a procedure that the Federal Reserve never re-adopted after the fall of 1982. The 4 percentage point band for funds rate variation, which was not dropped until November 1990, seems especially exaggerated from this perspective on the actual operating target because it was inoperative given the much narrower range of funds rate variations in practice. (The operational paragraphs of the directive for the late January meeting also noted the impending return to contemporaneous reserve requirements.)

In the short run, the Committee seeks to maintain the existing degree of pressure on bank reserve positions, anticipating that [the] approach will be consistent with growth of M2 and M3 each at annual rates of about 8 percent and M1 at an annual rate of about 7 percent during the period from December to March. Growth in nonfinancial debt is expected to be within the range established for the year. Lesser restraint would be acceptable in the context of a shortfall in monetary and credit growth from current expectations, while somewhat greater restraint might be acceptable with more rapid expansion of the aggregates, both viewed in the context of the strength of the business expansion and inflationary pressures.

In implementing policy in the weeks ahead, the Manager was instructed to take account of the uncertainties associated with the introduction of the system of more contemporaneous reserve requirements, particularly including the possibility that depository institutions, during a transition period, may desire to hold more excess reserves.

Introducing the Ranking of Policy Factors

March 26, 1985

The March 1985 operational paragraph saw a third innovation, one that would have a run of almost six years. That innovation was the ranking of the various policy factors. The ranking

79. Henry Wallich, "Recent Techniques of Monetary Policy," Federal Reserve Bank of Kansas City, *Economic Review*, May 1984.

80. Karl Brunner and Allan H. Meltzer, *The Federal Reserve's Attachment to the Free Reserves Concept*, Washington D.C.: House Committee on Banking and Currency, 1964. Reprinted in *Monetary Economics*, ed. Karl Brunner and A. H. Meltzer, London: Blackwell, 1989.

reflected the Committee's priorities with regard to possible adjustments in its setting of the borrowing level during intermeeting periods. The relevant extract from the document is the following:

Somewhat lesser reserve restraint might be acceptable in the event of substantially slower growth of the monetary aggregates while somewhat greater restraint might be acceptable in the event of substantially higher growth. In either case such a change would be considered in the context of appraisals of the strength of the business expansion, progress against inflation, and conditions in domestic credit and foreign exchange markets. . . .

Targeting Reserve Pressure Flexibly

November 3, 1987

The crash of the stock market on October 19, 1987, was disastrous for many investors, but it elicited a communications triumph from the Federal Reserve in the form of the reassuring announcement by Chairman Greenspan the next day:

The Federal Reserve, consistent with its responsibilities as the Nation's central bank, affirmed today its readiness to serve as a source of liquidity to support the economic and financial system.

In a less public reaction, the Trading Desk immediately switched to targeting the federal funds rate. The operational paragraph for the November 3, 1987, FOMC meeting indicated the new approach through the phrase "flexibility in open market operations." An extract shows this wording:

In the implementation of policy for the immediate future, the Committee seeks to maintain the degree of pressure on reserve positions sought in recent days. The Committee recognizes that the volatile conditions in financial markets and uncertainties in the economic outlook may continue to call for a special degree of flexibility in open market operations, depending, in particular, on demands for liquidity growing out of recent or prospective developments in financial markets. . . .

The Desk's procedures gradually returned to normal, as operating techniques increasingly focused on the level of borrowings, though for a time an unusually elevated weight continued to be given to the federal funds rate in light of remaining market tenderness, as was recognized in the March 29, 1988, operational paragraph. By May 17, 1988, the subsequent meeting, the operational paragraph finally reverted to the wording that had prevailed before stock market prices suddenly plunged.

Defending the Need for Releasing the Directive with a Delay

During the time that the FOMC was engineering these alterations in the directive's content, the Committee internally was reconsidering the case for and against immediate release. Understandably, its public posture on this question remained defensive. This section first covers the assessment by Stephen Axilrod and Peter Sternlight of the pros and cons of immediate release of FOMC decisions contained in a memorandum to the FOMC in late 1982. Next, the focus shifts to the extensive defenses of the delay in the mid-1980s as illustrated in responses to Peter Flanigan of Dillon, Read & Co., Representative Walter Fauntroy (Democrat from Washington, D.C. and chairman of the House Banking Subcommittee on Domestic Monetary Policy), and Senator Mac Mattingly (Republican from Georgia and chairman of the Senate Banking Subcommittee on Economic Policy). Then the section finishes with a critique by Marvin Goodfriend regarding the FOMC's arguments against immediate disclosure that were advanced in the Merrill case.

Considering the Pros and Cons of Immediate Release November 16, 1982

In November 1982, Governor Nancy Teeters advocated immediate release of the directive in a memorandum to Chairman Volcker, which she then distributed to all Board members and Reserve Bank presidents. In addition, in response to her suggestion, Stephen Axilrod (Staff Director for Monetary and Financial Policy), and Peter Sternlight (Manager for Domestic Operations, System Open Market Account) provided to the Committee in November 1982 an assessment of the pros and cons of immediate release of the directive, incorporating the FOMC's decisions. (The authors assumed that the Committee's vote would probably have to be made available if the directive were released immediately.) They evenhandedly listed six points in favor and six opposed:

Points in favor of immediate release

- (1) In a democratic society the public has a right to know as promptly as reasonably possible the important government economic and financial decisions that affect them. Indeed, it can be said that "information delayed is information denied." Delay should be permitted only if there is overwhelming evidence that immediate release would be detrimental to the processes of policy formation and implementation, and to the over-all workings of the nation's financial markets and the economy. . . . The logical next step in [the] process [of greater disclosure] is immediate release of short-run FOMC decisions, which would allow people to make financial decisions with maximum available information. . . .
- (2) Immediate release would avoid the problem of premature leaks of FOMC decisions. Unauthorized disclosure, whether accurate or not, is not only an embarrassment, it is inevitably unfair. Some learn of the information before others and may profit from it. Disclosure of incomplete or inaccurate

information can be particularly damaging, setting off exaggerated reactions that may not even be consistent with the thrust of the Committee's decisions.

(3) The first few instances of immediate release might generate special market attention and some unwarranted reactions, but after a while it is reasonable to expect market responses to most Committee decisions to be fairly smooth. Interest rate movements following meetings now involve a searching process to find the rate levels consistent with expected or perceived policy. Immediate release would aid the search process and thus could well improve the transmission of policy. From time to time the Desk's efforts to produce increases or decreases in borrowings or money market pressures have been retarded by market perceptions that no change in policy or operations has taken place. Alternatively, the market sometimes concludes that a change in market pressures is being implemented when this may not be the case. Immediate release of FOMC directives would provide the market with better information on which to base judgments about current Desk actions, thus reducing the likelihood of misjudgments.

At times, an unexpected Committee decision could have a sizable market impact when announced, but at least it would be an impact in the intended direction. Moreover, under present reserve-targeting procedures it seems less likely that decisions would generate larger reactions than in earlier days of interest-rate targeting.

(4) Under existing publication s[ch]edules, the public learns about the M1 and M2 objectives for a particular quarter about half way through the quarter. . . . There does not seem to be any adverse market consequence from having this information known while the last month and a half of the quarter unfold. The market's ability to deal with information about the quarter at the midway point suggests that similar information early in the quarter could also be handled satisfactorily.

(5) Large institutions now devote extensive resources to divining FOMC policy. The average businessman, small investor, or consumer cannot devote comparable resources to this search and they are at a consequent disadvantage in making their consumption/savings or investment decisions.

(6) Immediate release of the directive would reduce the criticism that the Federal Reserve tends to excessive secrecy. While the Merrill suit was decided in favor of the Federal Reserve, it might be harder to defend delayed disclosure in the future, in part due to the change in operating procedures.

Arguments against immediate release

- (1) Immediate release might affect the policy formation process adversely. The glare of press attention would be quite intense before and right after the meetings. Immediate responses to the decision would be sought from the Administration and Congress. Decision-making would inevitably take place in a more political environment. The announcement of decisions during the period covered by those decisions would allow time for public and political pressure to build up--e.g., there could be Congressional hearings or Presidential statements--to temper or reverse those decisions. Politically difficult decisions would be easier to postpone. It would also be more difficult to avoid providing information such as the staff GNP or interest rate forecasts that might be thought to be a basis for the decisions.
- (2) With its decisions so quickly known the Committee might become reluctant to risk moves--such as a substantial change in a federal funds rate range--that could be followed by substantial "announcement effects." Or the Committee may become unwilling to undertake probing or tentative steps because the possibility that some might need to be reversed would undesirably affect the public's confidence in the System's policy process. The implementation of policy would become less effective.
- (3) Market scrutiny of Desk activity would be no less intensive with immediate release than it now is, as commentators sought to determine whether the activity is consistent with stated policy. Indeed, any seeming deviation would call for explanations to reassure market participants that announced policies were still being followed--thus inhibiting the flexibility of policy implementation over an intermeeting period.
- (4) An institutional response to these problems might be to reduce the information content of the released Directive. Specific numbers on growth rates might give way to vague statements about "more rapid" or "less rapid" growth over the "near term"; the funds rate range might be eliminated or narrowed. The Committee could develop a tendency to operate more on the basis of unwritten understandings rather than the relatively straight-forward directives now in use. . . .
- (5) The market response to unexpected decisions at regular or interim meetings could be highly exaggerated. Even if a sizable response is justified on the basis of the decision, it may occur so abruptly as to be detrimental to the orderly functioning of the market. With a delay in the release, there would be time to implement decisions in a deliberate and orderly fashion, with discretion to take account of new information as it develops during an intermeeting period.

(6) Publication of the Directive, without the background of the policy record to put the Directive in its appropriate context, could lead to much greater, and unwarranted, concentration on the specific numerical content of the Directive. In its summaries of the discussion and the reasons underlying Committee decisions, the policy record provides the background from which market participants can make better informed judgments about the significance of the specific content of the Directive.⁸¹

The FOMC meeting on November 16, 1982, had the following exchange:

Ms. Teeters. I honestly don't think that [immediate release of our decisions] will do any harm. It would solve the problem of leaks. And with a group even as large as this one . . . the idea that we can keep something a secret for seven or six-and-a-half weeks is really a big presumption, it seems to me. The way it's working now, if we do have these leaks--and there will be speculation, considering all the attention that has been given to it--the speculation may finally come down to a consensus of speculation as to what we did or didn't do. In effect we're giving an advantage to the people who have a little inside knowledge instead of making it available to the public generally. And I think we're better off, even if we want to change the way we write the directive, if we make it publicly available. That doesn't mean that we are frozen into it. We can change our mind. We don't necessarily have to announce those changes in our mind. I think basically the public has a right to as much information as they can [receive] at this point. I don't think the leaks are really going to disappear. I think that you're going to get caught as I once did.

Chairman Volcker. If they don't, I'll disappear soon!⁸²

Later President Boehne of the Federal Bank of Philadelphia and others expressed their opinion:

Mr. Boehne. I suspect what the Committee would do is that it would gravitate toward even more vague directives.

Mr. Morris. Precisely.

Mr. Boehne. And then there would be a hidden meaning, which we'd all understand but the directive that we'd publish would give us so much flexibility that we could drive a truck through it a couple of times.

81. Messrs. Axilrod and Sternlight, "Immediate Release of FOMC Decisions: Pros and Cons," memorandum to Federal Open Market Committee, November 12, 1982, pp. 1-5.

82. Transcript of the November 16, 1982, FOMC meeting, p. 58.

Chairman Volcker. Again, I think it would invite a lot of probing at the bottom [to determine] what the real decision was.

Mr. Boehne. Yes, that's the question I'm asking.

Chairman Volcker. Yes, I share your instinct.

Mr. Rice. Won't they do that now? . . .

Mr. Gramley. Well, the whole problem would be that we would come up with a bunch of mush that could mean anything.

Mr. Morris. And we'd get to the point where we were back in the Martin years.⁸³

This FOMC thus saw itself as more transparent than its predecessors, even when it was deciding against more disclosure.

Replying to Peter Flanigan of Dillon, Read & Co.

June 26, 1984

In late June 1984, Stephen Axilrod provided to Peter Flanigan, Managing Director, Dillon, Read & Company, Inc., an undated document without Board staff attribution explaining several reasons for not immediately releasing the directive. Unlike the aforementioned Axilrod-Sternlight memorandum, in which the case against immediate disclosure had concentrated on possible feedback on the process of monetary policy making, the stated reasons in this document are more reminiscent of those the FOMC used in the Merrill case:

Reasons for not immediately releasing decisions governing intermeeting operating decisions

1. It will risk destabilizing market speculation. . . .
2. It will complicate the process of arriving at decisions. . . .
3. Small investors will be disadvantaged relative to large investors and active market participants. . . .
4. Legitimate debate about basic policy approaches will be more obscured.⁸⁴

In a revealing commentary on prevailing Federal Reserve concerns, Stephen Axilrod also enclosed an extract from a recent *Congressional Record*. It quotes Representative Bill Frenzel (Minnesota), Ranking Republican member, House Budget Committee, as follows:

83. Transcript of the November 16, 1982, FOMC meeting, p. 60.

84. "Why the decisions reached at regular FOMC meetings should not be released immediately," enclosure to letter from Stephen Axilrod to Peter Flanigan, June 26, 1984.

Three facts, however, stand out: First, the best way to reduce interest rates is to reduce deficits; second, it would be an unwise idea for Congress to require the Federal Reserve Board to announce immediately every operational and tactical move it is planning in order to carry out monetary goals; and third, the Federal Reserve has consistently handled monetary policy far more wisely and effectively than Congress has handled fiscal policy.

Many of the Fed's more vocal critics would like to see Congress take a more active role in monetary policy. The main complaint, as I believe it has been articulated recently on this floor, is that the Federal Reserve Board, and specifically the Federal Open Market Committee, work in a shroud of secrecy, mysteriously raising and lowering, but mostly raising, interest rates at will. Legislation requiring the Fed to immediately disclose all FOMC decisions would give Congress and others a voice in directing technical Federal Reserve operations. But I believe that politicizing the implementation of monetary policy in this way would be a grave mistake.

Federal Reserve actions should be, and are, accountable to Congress and the Nation. The Congress is ultimately responsible, and clearly has the authority to manage monetary policy if it wants. Thank heavens it has not wanted to do so.

The Humphrey-Hawkins Act requires the Chairman of the Federal Reserve to report twice a year to the Congress on monetary policy and money targets. While the law only asks for semiannual appearances, Chairman Volcker has testified 26 times before the 98th Congress. The Chairman's predecessors did the same. In addition, other Board Members are frequent guests here as well. Certainly, the Federal Reserve is not an organization that is attempting to insulate itself from congressional scrutiny or advice.

However, while Congress should be consulted through regular reports and contacts when determining broad policy guidelines, I question whether each operational and tactical decision by the Open Market Committee should be subject to congressional direction and immediate review. Many needed adjustments would be rendered ineffective, or even counterproductive, if every action is immediately scrutinized, second-guessed and exposed before it is implemented.

Members of the administration and Congress will inevitably be asked to comment on the significance, if any, of each decision. One risk is that operational decisions will become the focus of misleading political debates that should more properly emphasize broader economic questions. The ability

to “fine tune” monetary policy would be lost, and intended goals would be preempted by skittish market reactions.⁸⁵

Writing to Representative Fauntroy

August 24, 1984

Chairman Volcker sent a detailed rationale for the FOMC’s disclosure practices to House Banking Subcommittee Chairman Fauntroy in August. It is worth quoting at length, in part because it originated the defense of keeping contingency plans from public release until they have been supplanted by a new decision:

Based upon my experience over the years, I believe that it would not be in the public interest to require immediate release of these implementing and operational decisions. On the present schedule, where the directive and accompanying record of discussion by Committee members (which is in effect integral to the directive) are released with about a six to eight week lag, the public is able to evaluate on a continuing basis the general approach being taken by the Committee to policy implementation and the underlying economic and financial factors that influence it. Immediate release would not, in my view, add constructively to the current flow of information. (In fact, release could not literally be “immediate” unless the record of discussion, which takes some time to prepare and check with participants, was dropped from the release, leaving only a “bare bones” directive, which would probably be subject to varying market interpretations.)

Market uncertainties--with the potential at times for even greater interest rate fluctuation--would remain because market participants will react to their interpretation of Federal Reserve intentions looking ahead several weeks rather than to current operations. Interpretation of the significance of open market operating directives will be more uncertain and volatile than interpretation of decisions that involve a discrete action--such as a discount rate or reserve requirement change. That is because the FOMC’s operational decisions about open market operations are necessarily conditional, with the degree of reserve pressure to be exerted over an inter-meeting interval dependent on incoming information on the aggregates, the economy, and financial conditions generally.

The market will certainly at times react to conditional statements that never become operationally effective. This is most likely to occur in times of particular uncertainty, when there should be the highest premium on orderly market processes. The operating decision taken last December is a good example of the potential for adverse market reactions. We directed our open market trading desk to tighten up on reserves if the money supply began to

85. *Congressional Record*, House of Representatives, June 13, 1984, pp. H5790–91.

grow more strongly than anticipated or if certain economic events transpired. The conditions never transpired and no additional reserve restraint was placed on the economy in that period. But in the atmosphere of the time--which was not even a period of unusually great uncertainty in markets--the market would indeed have reacted to announcement of such a conditional decision. That appears certain because the market did in fact react to some extent several weeks later when the decision was published, even though it was no longer applicable.

The general point is that, since the market will react to its assessment of Federal Reserve intentions and will generally attempt to protect itself against the range of perceived alternatives, immediate publication of the operating instructions may very well be counterproductive. It carries the clear potential for more rather than less market disturbances. As those responsible for day-to-day operations within the context of the general directive look to market developments as one source of information, they will be seeing in part a distorted image of the Committee's conditional decision rather than a true reading about underlying supply-demand pressures. And discussion at FOMC meetings will under the circumstances tend to focus as much on "announcement" effects as substance, to the inevitable detriment of the whole policy-making process. . . .

The heart of the problem, as I see it, is that markets constantly are trying to anticipate what might happen in the future. They would like the Federal Reserve to in effect "tell" them. But, by the nature of things, we cannot. Our own operations in the market from day to day are dependent upon future events--some technical, some not--that we cannot reliably forecast with accuracy. One danger in immediate release of the directive is that certain assumptions might be made that we are committed to certain operations that are, in fact, dependent on future events, and these interpretations and expectations would tend to diminish our needed operational flexibility. In the end, the less sophisticated market participants, relying on second-hand interpretations (even interpretations of interpretations) of conditional directives would likely be particularly poorly served. . . .

If immediate release of the directive were to focus political and public attention on essentially operational decisions, both constructive debate on the more basic underlying issues and the internal decision-making process would suffer in the process. At the same time, in my judgment the net result--recognizing that a degree of uncertainty is a fact of life in all markets because none of us can know the future--would be to add to that uncertainty.

Responding to Senator Mattingly**July 18, 1985**

In mid-1985, Senate Banking Subcommittee Chairman Mac Mattingly submitted a written question after Chairman Volcker's Humphrey-Hawkins testimony asking for the Federal Reserve's justification for the six to seven week delay of the policy record, which he considered far too long. Chairman Volcker replied in August as follows:

This schedule is adhered to because of concern that earlier release of the decision--while it was still controlling for open market operations--would focus more attention on the short-run aspects of monetary tactics and foster even more speculation about the day-to-day implementation of policy, resulting in greater short-run swings in interest rates and market volatility.

The information in question takes the form of instructions to the Federal Reserve Bank of New York specifying the criteria to be used in carrying out open market operations in the period until the next FOMC meeting. These instructions are necessarily conditional in nature; that is, the actual stance of the Federal Reserve in supplying reserves will depend on the data that become available on growth in the money stock and information about the economy and financial markets as well. The so-called "directive" therefore does not give unequivocal instructions about how bank reserve conditions might evolve over a span of several weeks. The danger is that market participants would not adequately recognize the conditional and judgmental nature of the directive. In trying, with a false sense of certainty, to outguess the Federal Reserve, they would tend to impart even wider swings in domestic and international market conditions than we now experience. It would be especially difficult for the Federal Reserve to make relatively minor, probing adjustments to its stance in supplying reserves without provoking market over-reaction.

Immediate release of the directive would also tend to focus attention on the short-run tactics of monetary policy, rather than the long-run strategy that is important to achieving national objectives for output, employment, and prices. Decisions bearing on these more important strategic questions are released within a few days after they are made in February and July, and are accompanied by a report to Congress and testimony spelling out fully the Federal Reserve's assessment of the economy and the reasons for its policy choices. Quite properly, they are the subject of intense scrutiny and debate, both within Congress and in the public at large. Immediate release of the FOMC's short-run decision as well could deflect needed and appropriate attention from these more fundamental issues of monetary policy.

Eliciting a Critique of the Defense of Delay in the Merrill Case

January 1986

A critique of the FOMC's arguments in the Merrill case from an economist's perspective appeared in a paper by Marvin Goodfriend published in January 1986.⁸⁶ In substance, the FOMC had been successful in arguing that the decision to withhold the directive for a time was a monetary policy choice, not a pure disclosure decision, and should be resolved by the FOMC not by a court. Goodfriend's basic view was that the FOMC had made the wrong calculation in terms of the efficacy of monetary policy itself. That is, Goodfriend mounted an attack on the FOMC's economics.

His paper "consisted of a summary and critique of [the FOMC's] written defense. . . . The critique, based on rational expectations reasoning" (p. 90), was of the FOMC's position that the immediate disclosure of the directive would cause

1. Unfair speculation
2. Inappropriate market reaction
3. Harm to the government's commercial interest
4. Undesirable pre-commitment
5. More difficult interest rate smoothing.

He contended that these arguments lacked theoretical rigor. In a later paper, Goodfriend summarized his views:

Less central bank secrecy would reduce the cost of acquiring information about central bank policy, reduce the marginal value of central bank watching, and shrink the central bank watching industry. Less secrecy would confer social benefits in two senses. First, it would raise the informativeness of security prices, which could reduce forecast errors and raise everyone's expected utility. Second, it would free resources for other uses previously wasted from a social point of view on central bank watching.⁸⁷

His published position seems suitable for use in defense of virtually complete transparency.

Complying with Legislative Requirements in Conducting Policy

In the closing months of 1982, when the Federal Reserve was conducting monetary policy more judgmentally, congressional sentiment also was moving still further away from its late 1970s advocacy of monetarist reforms. In those days, the House Banking Committee, as we have seen, had supported both the new monetary control procedures and even contemporaneous reserve requirements. But times had changed.

86. Marvin Goodfriend, "Monetary Mystique: Secrecy and Central Banking," *Journal of Monetary Economics*, vol. 17, no. 1, January 1986, p. 71.

87. Marvin Goodfriend, "Fed Secrecy and the Choice of a Rule," *Cato Journal*, vol. 6, no. 2, Fall 1986, p. 559.

At the end of November 1982, Senator Robert Byrd introduced a resolution with 41 Democratic cosponsors calling on the Fed to “achieve and maintain a level of interest rates low enough to generate significant economic growth and thereby reduce the current intolerable level of unemployment.” The Democratic House approved this language as part of its “jobs package” in the year-end Continuing Resolution. The Senate version of the resolution included a watered-down version of the Byrd language. The Senate language also appeared in the final Continuing Resolution: “With due regard for combating inflation so as not to have an opposite effect of driving interest rates upward, (the Board and the FOMC) should . . . take such actions as are necessary to achieve and maintain a level of interest rates low enough to generate significant economic growth and thereby reduce the current intolerable level of unemployment.” The underlined wording had been added in negotiations with Republican Senator Jake Garn of Utah.⁸⁸

Adjusting the Annual M2 Range for MMDAs and Demoting the M1 Range February 8–9, 1983, and July 12–13, 1983

In February 1983 the Committee told the Congress in its report and testimony about its new approach regarding its money growth ranges. The FOMC adopted a flexible base for the M2 range, given the introduction of MMDAs, and demoted the M1 range to monitoring status, in light of its continued demand uncertainties as well as the structural effects of NOW accounts on the demand sensitivity of M1 to short-term interest rates.

The Depository Institutions Deregulation Committee authorized the super NOW account, effective in early 1983. These were NOW accounts with balances larger than \$2,500 not subject to a rate ceiling. These accounts could be expected to pull funds into M1 from sources outside M1, although again in an unpredictable magnitude. Within a month of their introduction, super NOWs totaled \$20 billion.

The initial shift of funds into MMDAs was even more phenomenal: those accounts had attracted more than \$250 billion by early February 1983 . . . [I]n February 1983 the [C]ommittee chose a February and March 1983 average as the base for the M2 range that year to get past the initial bulge in that aggregate. Minimal impacts were expected on M3 growth for the year, as depository institutions were thought likely to reduce their reliance on large CDs in response to the influx of core deposits.

88. Winthrop Hambley, “Information for Governor Meyer,” September 8, 2000, p. [11], with a cover note from Don Winn, “Background Materials on Congress and Monetary Policy,” September 25, 2000. Senator Garn once underscored his credentials as an advocate of price stability by contending that putting the Congress in charge of fighting inflation is like putting an arsonist in charge of the fire department!

Estimates by the [B]oard's staff based on survey and econometric evidence of the impact on M1 of flows of funds into MMDAs from M1 accounts and into super NOWs from outside M1 suggested sizeable gross effects--on the order of \$11 billion in each case over the year. But the two effects were approximately offsetting, so there was apparently little net impact. Nonetheless, the demand for M1 remained strong through the first half of 1983. . . . M1 velocity did not rebound in typical cyclical fashion during the recovery. In July, the [C]ommittee rebased the monitoring range for M1 to 1983:[Q]2 and raised the growth bands 1 percentage point.

The strength in M1 growth in the first half of 1983 continued to be concentrated in checkable accounts other than demand deposits and can be attributed mainly to lagged effects of earlier declines in short-term interest rates interacting with an altered demand for M1 function. As noted, the growth of fixed-ceiling NOW accounts made the other checkable deposit component, and M1 as a whole, more elastic with respect to market interest rates than was true of demand deposits or currency. After all, using hypothetical figures, a fall in short-term market rates from 15 percent to 10 percent represents a decline of one-third in the marginal opportunity cost of holding a demand deposit (even one paying a positive average implicit return via services independent of account size).

By contrast, the marginal opportunity cost of holding a NOW account paying a 5 percent explicit rate of return is reduced by one-half. . . .⁸⁹

Converting the Internal Red Book to the Public Beige Book

March 29, 1983

In a letter dated February 4, 1983, Representative Walter Fauntroy, chairman of the House Subcommittee on Domestic Monetary Policy, requested the Red Book at the same time the policy record was released. After its March 29 meeting that year, the FOMC decided to make the document public before, not after, the FOMC meeting for which it was prepared.

Regarding its history, before Arthur Burns became the Chairman of the Board in 1970, the review of regional economic developments for the FOMC consisted of oral reports given by each of the 12 district bank presidents around the table at the meetings. Chairman Burns decided that it would be more efficient to prepare and distribute those reports in advance. As a result, the district banks formalized and expanded their information-gathering process, and the predecessor to the *Beige Book*, which was called the *Red Book*, was born. The *Red Book* was much the same as today's *Beige Book* in

89. David E. Lindsey, "The Monetary Regime of the Federal Reserve System," in Colin D. Campbell and William R. Dugan, ed., *Alternative Monetary Regimes*, 1986, Johns Hopkins University Press. Paper delivered at a conference at Dartmouth College on August 22-24, 1984, p.188.

its content and purpose. But because it was prepared in advance of the meetings, the writeups could be somewhat more extensive than the presidents were able to provide in the earlier oral presentations. The members of the FOMC thought that preparing the *Red Book* in advance would improve the Committee's ability to draw on the banks' networks of regional contacts for economic intelligence. The *Red Book* was prepared for each meeting from mid-1970 until 1983 when it became the *Beige Book*. During that period, it was a confidential FOMC document—not publicly available and with limited distribution to staff at the district banks and the Board.

The public distribution of the *Beige Book* began in 1983 at the request of Rep. Walter Fauntroy, who chaired the Subcommittee on Domestic Monetary Policy of the House Banking Committee. The new publication was given a tan or beige cover, and while the content was much the same, a few minor changes were made. First, in order to separate it somewhat from the other briefing materials prepared for the FOMC meetings, its release was timed to occur about two weeks before the meeting. In addition, because it was to be a public document, reserve banks were careful not to include any specific references to businesses or individuals . . .⁹⁰

Tightening while Not Tightening: The Continental Illinois Episode Summer 1984

From the meeting on May 21–22, 1984, through the August 21 meeting of that year, the borrowings assumption chosen by the Committee remained the same, at \$1 billion (excluding discount window loans to Continental Illinois necessitated by its funding problems). The discount rate determined by the Board also was unchanged over that interval. Nevertheless, the federal funds rate went from 10½ percent to 11¾ percent over that time span.

The policy record for the May meeting stated:

Late in the intermeeting period, market conditions also reflected a heightened degree of anxiety and sensitivity to potential liquidity strains, and especially the persistent rumors that a major bank was in serious financial difficulty.

The Humphrey-Hawkins report on July 25 said:

The loss of confidence in the Continental Illinois Bank and well-publicized problems related to ongoing international debt negotiations in May led to a widening in the spread of yields on certificates of deposit issued by depository institutions over Treasury securities of similar maturity. Indeed, investors

90. Joyce K. Zickler, "The Beige Book: A Resource for Tracking Regional Economics," presentation to the National Press Foundation, October 15, 2001, p. 2.

increasingly seemed to show a preference for government securities relative to private credit instruments generally.

Chairman Volcker indicated in his July Humphrey-Hawkins testimony that the FOMC had kept its policy stance steady since the early spring, although market interest rates had risen.

Reserve pressures have not changed appreciably since [early spring], as reflected in relatively unchanged borrowings at the discount window (apart from those by the troubled Continental Illinois Bank). With both M1 and M2 remaining within their target ranges, and against the background of the economic, price, and financial market developments reviewed earlier, stronger restraining actions on money and credit growth generally have not appeared appropriate. At the same time, the relatively rapid rates of growth in M3 and domestic credit are flashing cautionary signals.

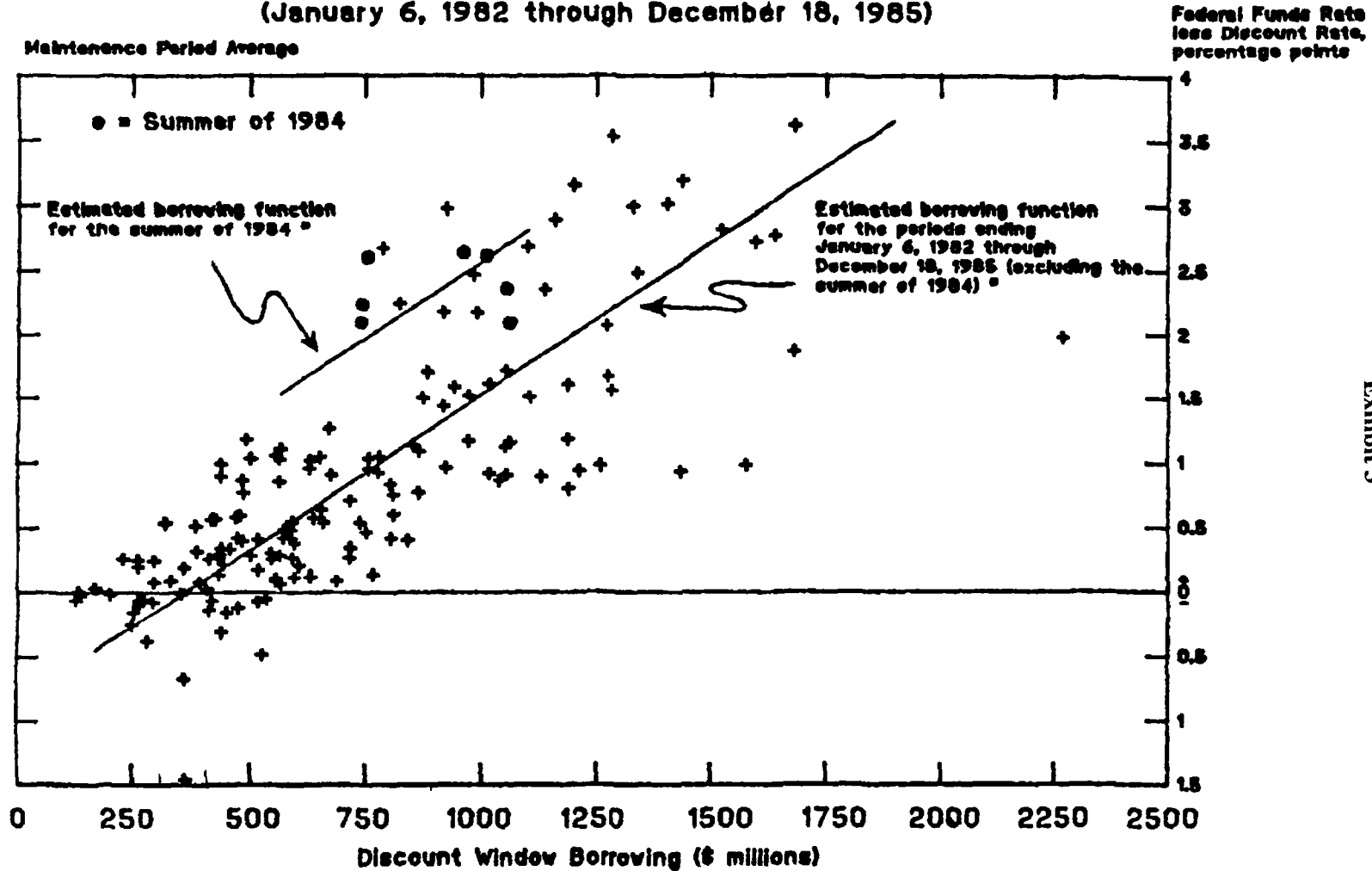
While pressures on bank reserves did not increase further, both long- and short-term interest rates rose over the spring. The continued heavy credit demands, expectations that those demands would persist against the background of the huge federal deficit and strong economic expansion, and fears of a resurgence of inflationary pressures as both labor and capital are more fully employed all played a part. In more recent weeks, rates have tended to stabilize at high levels, perhaps partly because current price trends have, at least so far, not borne out more extreme inflationary concerns expressed earlier. Nonetheless, markets remain volatile and apprehensive.

By the time of the August meeting, the policy record explained the increase in the federal funds rate by noting that “banks seemed to be somewhat reluctant to borrow from the discount window and they bid more aggressively for funds in the market.”

Exhibit 3 shows how the normal function relating discount window borrowing to the spread of the funds rate over the discount rate had been displaced in the summer of 1984 by banks' concerns about Continental Illinois. It is taken from a later memorandum to the FOMC.⁹¹ Banks had adopted this posture out of fear that, if they were perceived to be tapping the discount window from weakness, investors could paint them with the same brush that they had used for Continental Illinois. Some observers suspected that the further rise in the funds rate in the summer well suited the FOMC's purposes.

91. David Lindsey and James Glassman, “A Review of the Relation of the Funds Rate and Intended Discount Borrowing,” July 1, 1987, chart 3, sent to the Federal Open Market Committee with a cover memorandum from Donald L. Kohn, “Attached Study of Borrowing and Federal Funds Rate,” July 1, 1987.

The Relationship Between Borrowing and the Funds Rate Spread (January 6, 1982 through December 18, 1985)



*Borrowing functions jointly use data from the maintenance period ending January 6, 1982 through the period ending June 3, 1987, allowing for two shifts in the constant term.

Dropping the Annual M1 Range February 10–11, 1987

During the mid-1980s, the FOMC became even more discouraged about the usefulness of the M1 aggregate. M1 had an unpredictable savings component, which yielded an unstable demand function, as well as an inordinately high interest elasticity. In July 1985, the Committee widened the M1 range to an unprecedented 5 percentage points over the last two quarters of the year. The next February, it retained the 3 to 8 percent specification over the four quarters of 1986. By mid-1986, it went so far as to indicate that M1 growth in excess of that upper bound would be acceptable. In February 1987, the FOMC finally dropped for good a precise range for M1. The narrow aggregate was kept alive via the Board's H.6 statistical release each week. But the old soldier—a distinguished veteran of the first world war against inflation—was allowed to fade away.

Eating Humble Pie along with the Thanksgiving Turkey November 22, 1989

Just before Thanksgiving 1989, the Manager was, as in previous months, trying to implement the procedures geared mainly to an operating target for adjustment plus seasonal borrowings. He had been attempting to place primary emphasis on reserve needs in Desk operations and secondary importance on the funds rate quoted in the market at the time of Desk action. On that Wednesday before Thanksgiving, the Desk needed to add reserves for technical reasons. Even though the funds rate slipped from 1/16 percentage point to 1/8 percentage point below the Committee's funds rate expectation just before the operation, the Desk still arranged a five-day System repurchase agreement (RP). Market participants interpreted the operation as signaling a policy move, when it in fact did not.⁹² On Friday morning, the *New York Times* cited "government officials" claiming (albeit erroneously) that an easing had taken place. The policy record of the December meeting that year mentioned the episode: "Conditions in reserve markets softened temporarily around Thanksgiving when operations to meet seasonal reserve needs were misread as signaling a further easing of monetary policy."⁹³ After the incident, the Desk put top priority on signaling the Committee's intended funds rate. And that's the story of how the FOMC lost its borrowing procedures.

Implementing Monetary Policy 1980–89

The FOMC continued throughout the 1980s to provide the Congress semiannually with specified ranges for money and credit growth. Table 7 gives the four-quarter growth ranges for money and credit that were reported to the Congress during the decade. Still, as this section has shown, these ranges lost importance after 1982. Similarly, the FOMC continued to report projections of macroeconomic variables, but these, too, seemingly were not crucial in determining the stance of policy. Tables 8 through 11 record the summaries of the semiannual macroeconomic projections that were presented in the Humphrey-Hawkins reports in the 1980s. As in July 1979, only Board

92. For the Manager's account of this event, see "Monetary Policy and Open Market Operations during 1989," a report prepared for the Federal Open Market Committee by the Open Markets Group of the Federal Reserve Bank of New York, March 1990, pp. 49–50.

93. Record of Policy Actions of the December 18–19, 1989, FOMC meeting, 76th *Annual Report*, 1989, p. 133.

Table 7
Money and Debt:
Current-Year Growth Ranges Adopted under the Humphrey–Hawkins Act,
and Actual Growth, 1980–89
(Percent, fourth quarter to fourth quarter except as noted)

Year	M1		M2		M3		Domestic nonfinancial debt ¹	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
1980 ^{2,3}	4–6½	7.3	6–9	9.8	6½–9½	9.9	6–9	7.9
1981 ^{2,4}	3½–6	2.3	6–9	9.4	6½–9½	11.4	6–9	8.8 ⁵
1982 ²	2½–5½	8.5	6–9	9.2	6½–9½	10.1	6–9 ⁶	7.1 ⁵
1983	5–9 ⁷	7.2	7–10 ⁸	8.3	6½–9½	9.7	8½–11½	10.5
1984	4–8	5.2	6–9	7.7	6–9	10.5	8–11	13.4
1985	3–8 ⁹	12.7	6–9	8.6	6–9½	7.4	9–12	13.5
1986	3–8	15.2	6–9	8.9	6–9	8.8	8–11	12.9
1987	n.s. ¹⁰	6.2	5½–8½	4.0	5½–8½	5.4	8–11	9.6
1988	n.s.	4.3	4–8	5.3	4–8	6.2	7–11	8.7
1989	n.s.	.6	3–7	4.6	3½–7½	3.3	6½–10½	8.1

NOTE. Actual growth rates are as reported in the Monetary Policy Report to the Congress issued in February of the next year. Subsequent revisions to historical data (not shown) have altered growth rates by up to a few tenths of a percentage point.

1. Values for 1980–82 are for bank credit.

2. Values for M1 are for M-1B (1980) and for shift-adjusted M-1B (1981). M-1B was re-labeled M1 in January 1982. For 1980 the target and actual growth for M-1A were 3½–6 percent and 5.0 percent respectively; for 1981 (shift adjusted) they were 3–5½ percent and 1.3 percent respectively.

3. When these ranges were set, shifts into other checkable deposits in 1980 were expected to have only a limited effect on the growth of M-1A and M-1B. As the year progressed, however, banks offered other checkable deposits more actively, and more funds than expected were directed to these accounts. Such shifts are estimated to have decreased M-1A growth and increased M-1B growth each by at least ½ percentage point more than had been anticipated.

4. Adjusted for the effects of shifts out of demand deposits and savings deposits. At the February FOMC meeting, the target ranges for observed M-1A and M-1B in 1981 on an unadjusted basis, expected to be consistent with the adjusted ranges, were -4½ percent to -2 percent and 6 percent to 8½ percent respectively. Actual M-1B growth (not shift adjusted) was 5.0 percent.

5. Adjusted for shifts of assets from domestic banking offices to international banking facilities.

6. Annualized growth from the December 1981–January 1982 average level through the fourth quarter of 1982.

7. Base period adopted at the July 1983 FOMC meeting is 1983:Q2. At the February 1983 meeting, the FOMC had adopted a 1982:Q4 to 1983:Q4 target range for M1 of 4–8 percent.

8. Base period is the February–March 1983 average.

9. Base period adopted at the July 1985 FOMC meeting is 1985:Q2. At the February 1985 meeting, the FOMC had adopted a 1984:Q4 to 1985:Q4 target range for M1 of 4–7 percent.

10. No range for M1 has been specified since the February 1987 FOMC meeting because of uncertainties about its underlying relationship to the behavior of the economy and its sensitivity to economic and financial circumstances.

n.s. Not specified.

members contributed economic projections in February 1980, but in July 1980 all voting FOMC members provided their forecasts. The Board members and all the Reserve Bank presidents were included starting in February 1981, a practice that has continued. In February 1983, central

Table 8
Nominal GNP Growth:
Range or Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1979-89
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year ¹
	July of previous year	February of current year	July of current year	
1979	...	...	8 to 10	9.9
1980	8½ to 11½	7½ to 11	5 to 7½	9.5
1981	8½ to 11½	9 to 12	10 to 11½	9.3
1982	9½ to 12¼	8 to 10½	5½ to 7½	3.3
1983	7 to 9½	8 to 9	9¼ to 10	10.4
1984	9 to 10	9 to 10	10½ to 11	9.3
1985	8 to 9	7½ to 8	6½ to 7	5.8
1986	7 to 7½	6½ to 7¼	4¾ to 5¾	4.4
1987	6 to 7½	5¾ to 6½	6¼ to 7	7.2
1988	5¾ to 7	5¼ to 6	5¾ to 6¾	7.0
1989	5 to 7	6½ to 7½	6 to 7	6.4

NOTE. In July 1979 and February 1980 the projections were those of Board members only, and in July 1980 they were of FOMC voting members only. Afterward, all Board members and Bank presidents contributed projections. From 1979 to 1982, only the full ranges were provided; beginning in February 1983 the central tendencies of the projections are shown.

1. Estimates from the February Humphrey-Hawkins reports, when available, or from the February Greenbook.

... Not applicable.

tendencies first joined full ranges in the Humphrey-Hawkins report. The central tendency forecasts, as the name implies, deleted high and low outliers. (Later Michael Prell, who became Director of the Board's Division of Research and Statistics in 1987, used a rule of thumb of

Table 9
Real GNP Growth:
Range or Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1979–89
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year ¹
	July of previous year	February of current year	July of current year	
1979	...	...	-2 to -½	.8
1980	-½ to 2	-2½ to ½	-5 to -2½	-3
1981	½ to 3	-1½ to 1½	1 to 3½	.7
1982	1 to 4	½ to 3	½ to 1½	-1.2
1983	2½ to 4	3½ to 4½	5 to 5¾	6.1
1984	4 to 4½	4 to 4¾	6¼ to 6¾	5.6
1985	3 to 3¾	3½ to 4	2¾ to 3	2.5
1986	2½ to 3¾	3 to 3½	2½ to 3	2.2
1987	3 to 3½	2½ to 3	2½ to 3	3.8
1988	2½ to 3	2 to 2½	2¾ to 3	2.7
1989	2 to 2½	2½ to 3	2 to 2½	2.4

NOTE. In July 1979 and February 1980 the projections were those of Board members only, and in July 1980 they were of FOMC voting members only. Afterward, all Board members and Bank presidents contributed projections. From 1979 to 1982, only the full ranges were provided; beginning in February 1983 the central tendencies of the projections are shown.

1. Estimates from the February Humphrey-Hawkins reports, when available, or from the February Greenbook.

... Not applicable.

eliminating the top three and bottom three individual forecasts to derive the central tendencies from the ranges.)

Despite the FOMC's continued semiannual provision to the Congress of the GNP and other forecasts during the 1980s, these projections evidently did not much influence the actual federal

Table 10
GNP Implicit Deflator/CPI Inflation Rate:
Range or Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1979-89
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year ¹
	July of previous year	February of current year	July of current year	
1979	...	...	9½ to 11	9.0
1980	8½ to 10½	9 to 11	9 to 10	9.8
1981	7¾ to 9½	9 to 10½	7½ to 9	8.6
1982	6½ to 8½	6½ to 7¾	4¾ to 6	6.0
1983	4 to 5¾	4 to 5	4¼ to 4¾	4.2
1984	4¼ to 5	4½ to 5	4 to 4½	3.7
1985	5¼ to 5½	3½ to 4	3¾ to 4	3.1
1986	3¾ to 4¾	3 to 4	2¼ to 2¾	2.2
1987	3 to 4	3 to 3½	3½ to 4	3.3
1988	3¾ to 4¼	3¼ to 3¾	3 to 3¾	4.3
1989	3 to 4½ (deflator)	4½ to 5 (CPI)	5 to 5½	4.5

NOTE. In July 1979 and February 1980 the projections were those of Board members only, and in July 1980 they were of FOMC voting members only. Afterward, all Board members and Bank presidents contributed projections. From 1979 to 1982, only the full ranges were provided; beginning in February 1983 the central tendencies of the projections are shown.

1. Estimates from the February Humphrey-Hawkins reports, when available, or from the February Greenbook.

.. Not applicable.

funds rate at least until 1988, and perhaps not even until the next decade (see chapter VI for a demonstration). After the de-emphasis of money in the second half of 1982, the FOMC apparently shifted its focus to outcomes for economic growth and inflation, which had been more implicit under M1 targeting. It had learned a lesson from the experience of the 1970s, especially the late 1970s, when following forecasts in setting the funds rate had produced an amount of tightening that it later judged to have remained behind the curve.

Table 11
Unemployment Rate:
Range or Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1979–89
(Percent, fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year ¹
	July of previous year	February of current year	July of current year	
1979	...	...	6¼ to 7	5.9
1980	6¾ to 8½	6¾ to 8	8½ to 9¼	7.5
1981	8 to 9¼	8 to 8½	7½ to 8¼	8.3
1982	7 to 8½	8¼ to 9½	9 to 9¾	10.7
1983	8½ to 9½	9.9 to 10.4	About 9½	8.5
1984	8¼ to 8¾	7½ to 7¾	6¾ to 7	7.2
1985	6½ to 7	6¾ to 7	7 to 7¼	7.0
1986	6¾ to 7¼	About 6½	7	6.9
1987	Around 6¾	6½ to 6¾	6.2 to 6.4	5.9
1988	6 to 6½	5¾ to 6	5¼ to 5¾	5.3
1989	5½ to 6	5¼ to 5½	Around 5½	5.3

NOTE. In July 1979 and February 1980 the projections were those of Board members only, and in July 1980 they were of FOMC voting members only. Afterward, all Board members and Bank presidents contributed projections. From 1979 to 1982, only the full ranges were provided; beginning in February 1983 the central tendencies of the projections are shown.

1. Estimates from the February Humphrey-Hawkins reports, when available, or from the February Greenbook.

... Not applicable.

At the July 1980 Humphrey-Hawkins hearings in the House, the following exchange occurred:

Mr. Minish. . . . I want to ask a simple question. What is the outlook for the economy?

Mr. Volcker. I have to preface that with my usual comment, about which I feel rather strongly: We make a mistake in economic policy to put too much money on any particular forecast. We have been fooled too often in the past. You get yourself in more trouble by saying, "I know what the economic outlook is; I am going to put all policies in that basket for the short run."

I think we ought to realize and recognize there is uncertainty here. We ought to stay on a path.

That has real implications for monetary policy. . . .⁹⁴

The Committee shied away as well from trying to base policy to an important degree on its estimate of the natural rate of unemployment, or NAIRU. The Committee's implicit attempt to maintain the economy at a level of "full employment," which in retrospect would seem to have been grossly overestimated, was a main source of the Great Inflation of the previous decade. Finally, the FOMC abandoned gradualism in its adjustment of the funds rate on the grounds of avoiding excessive caution in policymaking.

In short, from 1980 through at least 1987, and perhaps for the whole decade, the FOMC in effect overthrew the implicit "rule" that it had acted as if it was pursuing in the 1970s. Rather than trying to forecast an employment or output gap several quarters ahead with an eye on the lagged federal funds rate, the Committee, both during M1 targeting in the early 1980s and for much of the rest of the decade, set monetary policy instead "as if" it were reacting to outcomes for the economy's real output growth relative to an implicit estimated growth of potential without any reference at all to a lagged funds rate. The only similarity between the two policy designs is that the FOMC was implicitly targeting a low rate of inflation in both eras, though its reaction seemed to switch in 1980 from forecasts of inflation to its outcomes.

Communicating Monetary Policy 1980–89

The FOMC could not have predicted that years later its actions would be shown to have closely traced out a "reaction function" with only two explanatory variables: the observed values of economic growth and inflation. Thus, the Committee could hardly have been expected to have described publicly this specific representation of its policy design and implementation. Nevertheless, few on the outside would have been surprised to hear one more time that the FOMC during the 1980s was taking a hard line against inflation while trying to avoid the hubris

94. Hearing before the Committee on Banking, Finance and Urban Affairs, House of Representatives, July 23, 1980, Serial No. 96–63, p. 87

of its predecessors. The FOMC's mistakes in the 1970s were widely thought to have arisen from the view that the levels of potential output or the NAIRU could be precisely estimated, that predicted economic weakness will necessarily come true, and that policy caution always entails a tiny adjustment to the instrument.

In general, humans have a tendency to keep fighting the last war, and monetary policy making in the 1980s was no exception. Nevertheless, as new conditions emerge, the changing responses of policymakers naturally will cause the structure of policy over time to gravitate away from its starting point. Also, the personnel on the Committee continually turned over, and experience and macroeconomic research offered new insights, while the old insights gradually faded from memory. Accordingly, speaking hypothetically, it would be unrealistic for any FOMC ever to announce that it has finally identified the particular structure of policymaking constituting the "optimum optimum," which henceforth would always remain in effect. The implicit reaction function of the 1980s, despite its successes, could not for long avoid being subject to these dicta. Admittedly, telling whether the transition to a new structure occurred suddenly in 1987 or in 1988 or in 1989 or whether it took place gradually throughout those years is no mean feat. Whatever the exact timeline, by 1990 the policy structure of much of the 1980s clearly was "gone with the wind."

The FOMC of the 1980s was guarded in its communicative detail. Indeed, the FOMC of this period revealed its propensity for "constructive ambiguity," a term that always could be used in polite company. A less inhibited modern observer instead might call the Committee "opaque" or, even worse, "not transparent."

Actually, what is not so transparent to the modern observer was the Committee's motivation at this time. An important concern, implicit or explicit in the foregoing, was to avoid criticism, which could have resulted in political pressure, which in turn could have had an adverse effect on the conduct of monetary policy. It is worth remembering that congressional criticism of what would now be termed sound, anti-inflationary monetary policy was not uncommon at the time. Committee members feared that sharp criticism of interest rate hikes by politicians, who ultimately might be successful after all in passing legislation altering the Federal Reserve's makeup or limiting its maneuvering room, would only render an already difficult decision to tighten even harder to make. This attitude explains the Federal Reserve's fervent concern that the time horizon for monetary policy needed to extend well beyond the next election as well as its zealous defense of central bank instrument independence—which gives it the necessary leeway to alter the stance of its policy as changing circumstances dictate.

Without transparency, a decision that likely or certainly would raise the funds rate but not the discount rate would not be known even to the market cognoscenti at a minimum until the next day through the signals imparted by the operations of the Trading Desk. And the action might or might not be covered in financial news stories on the business pages of the papers on the day after that. By then the news would be sufficiently outdated that few politicians would bother to comment in real time.

By contrast, the Committee had some concern that with the transparency of, for example, an immediate announcement of a change in the stance of policy, reports by the media would be immediate. Commentators, including politicians, would give their reactions on camera the same afternoon. The story would be covered in the television news programs that evening and then would appear on the front page of the major newspapers the next day. In other words, transparency would transform the action from a little noticed technical adjustment in the obscure market for bank reserves into a big deal. The FOMC's thought was that, in the resulting goldfish bowl, tightening would be harder to decide to do—yielding worse monetary policy and, hence, inferior national economic results.

IV. THE 1990s: FURTHER DISINFLATION AND OPERATING ON THE FEDERAL FUNDS RATE

Responding to Representative Gonzalez on Minutes and Transcripts	105
Receiving disclosure questions from Representative Gonzalez, October 5 and 8, 1992	107
Discussing the timing and extent of disclosure, February 2–3, 1993	108
Creating the minutes of the FOMC Meeting, March 23, 1993	110
Leaking the asymmetric tilt, May 18, 1993	110
Receiving Representative Gonzalez’s reaction, July 6, 1993	111
Sticking to their guns, July 20, 1993	112
Preparing to testify before the House banking committee, October 5 and 15, 1993	112
Testifying before the House banking committee, October 13 and 19, 1993	115
Leaking makes the transcripts an issue, October 22, 1993	116
Deciding on the disposition of past transcripts, November 16, 1993	120
Letting Representative Gonzalez’s staff listen to the October 15 tape, December 21, 1993	124
Deciding on the disposition of future transcripts, February 2, 1995	127
 Complying with Existing Legislative Goals and Reporting Requirements	 130
Tracking M2 while being overtaken by the Four Horsemen, July 21, 1992	132
Downgrading broad money to information-variable status, February 2–3, 1993	134
Rejecting a more-distant horizon for the semiannual macroeconomic forecasts, February 3–4, 1994	135
Rejecting an even-more-distant horizon for the semiannual macroeconomic forecasts, July 5–6, 1994	137
Relegating the broad monetary ranges to benchmark status, July 5–6, 1994	141
Rejecting multiyear inflation targets, February 1, 1995	141
Considering the working definition of, and approach to, price stability, July 2, 1996, and July 1, 1997	145
Implementing monetary policy, 1990–96	149
Communicating monetary policy, 1990–96	151
 Refining the Content of the Directive and the Immediate Announcement	 155
Deleting the range for the federal funds rate, November 13, 1990	156
Considering more automaticity in the funds rate, August 20, 1991	157
Amending the ranking of policy factors, December 17, 1991	157
Removing a quantitative short-run M2 range from the operational paragraph, February 2–3, 1993	162
Introducing the immediate announcement, February 4, 1994	162
Using immediate announcements, March 22, 1994–February 1, 1995	163
Formalizing rules for immediate announcements, February 2, 1995	164
Giving the funds rate target in the immediate announcement, July 6, 1995	164
Accelerating release of the directive by one day, February 4–5, 1997	164
Giving the funds rate target in the operational paragraph, August 19, 1997	165
Amending the tilt wording and deleting the qualitative money sentence, December 22, 1998	165
Announcing major shifts of view without a policy change infrequently, December 22, 1998	168
Announcing a change in the tilt immediately, May 18, 1999	173
Agreeing on the balance of risks and shortening the directive, December 21, 1999	177

IV. THE 1990s: FURTHER DISINFLATION AND OPERATING ON THE FEDERAL FUNDS RATE

Following the market's misunderstanding of the FOMC's policy intent just before Thanksgiving 1989, the Trading Desk de-emphasized the specified amount of adjustment plus seasonal borrowing and reemphasized its day-to-day pursuit of a single target level for the federal funds rate, the procedure that has prevailed until the present day. Its communication of the specifics of this operating procedure, however, evolved more slowly in the form of several revisions to all of the following: the Committee's wording of the operational paragraph of the directive released after the subsequent meeting; its immediate announcements initiated in early 1994; and at the end of the decade, its replacement of its policy inclination or "tilt" with the "balance of risks." Before reviewing these developments, however, this chapter discusses first the challenge to its broader disclosure practices from Representative Henry B. Gonzalez, and then the FOMC's compliance with legislative goals and reporting requirements through its implementation and communication of monetary policy.

Responding to Representative Gonzalez on Minutes and Transcripts

Chairman Alan Greenspan's letter of September 23, 1991, to Representative Stephen Neal gave a description of and rationale for the FOMC's disclosure practices in the early 1990s.⁹⁵

In general, monetary policy decisions are made public immediately, except when doing so could undercut the efficacy of policy or compromise the integrity of policymaking. For example, when we change the discount rate or reserve requirements, those decisions are announced at once. When we establish new ranges for money and credit growth, those ranges are set forth promptly in our reports to Congress. And when Congress requests our views, we testify. Moreover, we publish our balance sheet every week with a 1-day lag. What we do not disclose immediately are the implementing decisions with respect to our open market operations. However, even these are conveyed rather clearly to the markets and to the public at large through the operations themselves. In practice, there is little lag between a change in operating policy and the wide recognition of the change, despite the absence of a formal announcement. Guidance for those operations is given to the account manager at the Federal Reserve Bank of New York as a Directive, which is made public shortly after the next FOMC meeting, 6 to 7 weeks later. At the same time, we publish a lengthy record of the policy deliberations underlying the Committee's decisions. This way of distinguishing the nature of policy intent may well convey information to the financial markets about the future direction of policy better than would a formal, immediate announcement of every policy change.

95. This single-spaced letter reached a fifth page, a fact that indicates the letter's detail. About one-third has been omitted in the following quotation.

The immediate disclosure of all changes in our operating targets would take a valuable policy instrument away from us by reducing our flexibility to implement decisions quietly at times to achieve a desired effect while minimizing possible financial market disruptions. With an obligation to announce all changes as they occurred, the distinction between making changes either quite publicly or more subtly, as conditions warrant, would evaporate; all moves would be accompanied by announcement effects. If markets always accurately assessed the implications of such announcements, incorporating them into the structure of prices, then market efficiency might be enhanced by making our open market objectives public immediately. However, prices can, and do, overreact to particular announcements. . . . Markets are often prone to overreact at times when the financial system appears fragile, and under these conditions, the requirement to publicize each change could risk further unsettling markets. . . .

The immediate release of the Directive also would be ill-advised. The Directive itself cannot capture all the considerations that guide Committee policy for the intermeeting period. It needs to be accompanied by the record of the Committee's deliberations, which takes several weeks to prepare properly. Moreover, early release could provoke overreactions in financial markets to contingencies or reserve pressure alternatives mentioned in a Directive that may not occur, or that may be superseded by intermeeting developments and adjustments. To the extent that market participants anticipate contingencies in the Directive that never materialize, the markets would be subjected to unnecessary volatility.

Earlier release of the Directive would, in addition, force the Committee itself to focus on the market impact of the announcement as well as on the ultimate economic impact of its actions. To avoid premature market reaction to mere contingencies, FOMC decisions could well lose their conditional character. Given the uncertainties in economic forecasts and in the links between monetary policy actions and economic outcomes, such an impairment of flexibility in the evolution of policy would be undesirable. . . .

Clearly, this line of reasoning is undermined by the selective, unauthorized, and premature release of FOMC decisions to the press. As I indicated in response to your question at the Humphrey-Hawkins hearings, I have found these instances extremely distressing. I believe that the appropriate response to this problem is not the abandonment of procedures designed to enhance the effectiveness of policy implementation, but rather the better enforcement of the Committee's rules regarding confidentiality.

Receiving Disclosure Questions from Representative Gonzalez October 5 and 8, 1992

About a year later, Representative Henry B. Gonzalez (Democrat from Texas), chairman, House Committee on Banking, Finance and Urban Affairs, began to mount a frontal assault on these disclosure practices.⁹⁶ A letter from him to Chairman Greenspan dated October 8, 1992, criticized dropping the Memorandum of Discussion as of March 1976 and requested the Board's views on releasing a videotape of FOMC meetings with a sixty-day lag. He had asked the Reserve Bank presidents on October 5 about their willingness to have their comments and votes individually reflected in detailed minutes and released "promptly." His letter of October 8 also asserted that in 1976 the FOMC had discontinued

the practice of taking minutes at FOMC meetings. Now, the FOMC only issues a directive the Friday after the next FOMC meeting. The directive only contains the vote on policy matters and formal instructions for monetary policy. It is a highly inadequate record of the FOMC deliberations.

Chairman Greenspan's initial reply on October 22 indicated that a substantive response to these "interesting" disclosure issues, which had not been raised for some time, would have to await a discussion among the Board members and Bank presidents. That discussion took place at the November 17 meeting of the FOMC and continued in a December 14 conference call.⁹⁷ In these conversations, the Committee noted the difficulty of finding the appropriate balance between the public's right to know and the quality of deliberations and decisions. Also, as President Richard F. Syron of the Federal Reserve Bank of Boston observed, Representative Gonzalez proposed releasing, after a short delay, information about the *process* in the form of the *detailed arguments behind* the decision, such as making a videotape public after sixty days; this proposal most directly threatened the deliberative process. By contrast, immediate release of the Committee's *decision* itself, such as would result from a disclosure of the directive, in President Syron's opinion would have been of more interest.⁹⁸

Chairman Greenspan said later in the meeting:

I personally see no problem in announcing decisions after the fact. We cut the discount rate, we announce it; we move the funds rate, we announce it. That frankly doesn't bother me very much. What does bother me is putting on the table and in the public our deliberations about potential future [actions] and our inclinations and the conditions that would drive [such actions]. That

96. A useful summary of the Gonzalez challenge and the FOMC response and a limited compendium of materials can be found in Bonnie Garrett, "Part 5: Summary of FOMC Disclosure Decisions, 1993 to the Present," memorandum to FOMC Secretariat Files, September 16, 1999. This history has relied mostly on an exhaustive collection of all the relevant materials on this subject—from the Federal Reserve, the Congress, and the press—which can be found in the three-binder collection compiled by David Lindsey and Rivane Henderson. It is entitled, in tongue-in-cheek fashion, "The War of Independence."

97. See transcripts of the November 17, 1992, FOMC meeting and of the December 14, 1992, conference call.

98. Transcript of the November 17, 1992, FOMC meeting, p. 52.

would then, by interacting with the market, alter our decisionmaking process and create a significant loss of flexibility in the actions that we might have undertaken.⁹⁹

Indeed, at this meeting four speakers favored, and another said he could accept, the immediate release of information on policy actions already taken, whereas only two others opposed this idea.¹⁰⁰

During the conference call in December, a subcommittee was established to discuss various disclosure issues and to report back to the full FOMC before the February 1993 FOMC meeting. The subcommittee was to be chaired by Vice Chairman David Mullins and to be made up of Governor Edward Kelley and Presidents Edward Boehne and Thomas Melzer.

The final reply by Chairman Greenspan on behalf of the FOMC on December 24, 1992, indicated that, as a general principle, the openness of public bodies is desirable without good reasons to the contrary. But he explained the opposition of the Board members and Reserve Bank presidents to releasing either a “literal record” or a “very detailed accounting” of FOMC discussions because the Committee’s deliberative process would be significantly impaired. Chairman Greenspan also informed Representative Gonzalez of the extensive Federal Reserve disclosure procedures already in place. In particular, the release of the Record of Policy Actions after the next meeting gave the public a much more comprehensive account of Committee discussions than the directive alone provided.

In a response on December 29, 1992, Representative Gonzalez again referenced the demise of the Memorandum of Discussion. He cited the fifty-five letters to the Domestic Monetary Policy Subcommittee of the House Banking Committee in the mid-1970s opposing the FOMC decision versus only fifteen letters in favor. And, in a pattern that would be repeated, he also characterized Chairman Greenspan’s earlier answer as “evasive” and requested individual responses about the desirability of a more detailed record of each meeting that would be released promptly to the public. On January 7, 1993, Chairman Greenspan indicated to him that, although his earlier letter had accurately expressed the consensus of FOMC members, he had asked his colleagues to comply, and they did so shortly thereafter.

Discussing the Timing and Extent of Disclosure February 2–3, 1993

The next skirmish in this protracted conflict occurred when the minutes of the February 2–3, 1993, meeting informed the public on March 26 that the Committee had discussed “various options for apprising the public more fully or promptly of the Committee’s actions” but that “no decisions were made.” The Committee discussed a “preliminary” report on disclosure issues of

99. Transcript of the November 17, 1992, FOMC meeting, p. 54.

100. Normand Bernard, “Summary of November 17 FOMC Discussion of Earlier Release of Information and Preparation of Detailed Minutes,” November 25, 1992, p. 3.

the subcommittee headed by Governor Mullins.¹⁰¹ The following are extracts from that report giving the tentative subcommittee conclusions on alternative proposals:

Immediate release of operational paragraph of (or entire) directive . . . Possible adverse effects on policy process and market volatility probably more than offset benefits to market of limited additional information.

Memorandum of Discussion (heavily edited version of individual contributions at meeting in the order in which they occurred) . . . Problems clearly outweigh benefits for a Memorandum to be released promptly (e.g., within 3 years). Even if legal protection against disclosure for several years were available, the subcommittee would prefer not to produce and release a memorandum, in light of the possibility of forced disclosure even with legal protection, the substantial amount of information already made available by the Committee about monetary policy, the cost of production, and the potentially adverse effects on the quality of Committee deliberations.

Videotape/audiotape/literal transcription of meetings . . . Adverse effects (especially on the policy process) clearly outweigh benefits, even if tapes were protected and released on a delayed basis.

Expanded policy record, with views individually attributed . . . Generally, costs appear to outweigh benefits, given the amount of information already published, the small amount and nature of additional information that would be made available, and the possible adverse consequences of the added focus of public attention on the policy process and individual contributions to it.

Immediate announcement of actions to change expected federal funds rate . . . Of the alternatives examined, this most merits further analysis.¹⁰²

At the meeting, Governor Mullins introduced the report by saying:

Mr. Mullins. . . . The way we conceptualized this whole area was to suggest that our number one job should be to make the best monetary policy decisions we could. That is our chief objective. In a democratic society we should do that in a manner which is as open as possible consistent with making the best monetary policy decisions. And to the extent the process is not public because we feel that a more open process would adversely affect the quality

101. See Bonnie Garrett, "Summary of February 2-3, 1993, FOMC Discussion of the Release of Information about FOMC Deliberations and Decisions," memorandum to FOMC Secretariat Files, September 22, 1995.

102. "Outline of Issues Related to Release of Information about FOMC Deliberations and Decisions," with a cover memorandum to the Federal Open Market Committee from Donald L. Kohn, "Public Release of Information about FOMC Deliberations and Decisions," January 27, 1993, pp. 3-8, and 10.

of monetary policy decision making we felt that we would bear the burden for making the case because there is this presumption of openness.¹⁰³

Creating the Minutes of the FOMC Meeting

March 23, 1993

The FOMC decided on March 23, 1993, to make available to the public three days later a new document, to be called the Minutes of the FOMC Meeting, that comprehensively covered all aspects of its February meeting. This document combined the previous Record of Policy Actions and the Minutes of Actions and conveyed in a single, more convenient form the same information that had been released to the public as before and on the same schedule. Previously, the Record of Policy Actions had been issued to the press, while the Minutes of Actions had been made available in the Board's Freedom of Information Office, in both cases on the Friday after the next meeting.¹⁰⁴ The Committee decided against having an "executive summary" for the minutes.

The transcript of that meeting shows how the stage was set.

Mr. Mullins. . . . The genesis of this proposal comes from the recent Senate Banking Committee hearing, in which two senators, Senator Mack and Senator Riegle, stated that the Federal Reserve didn't even produce minutes for the FOMC. I think to some of us this episode made it abundantly clear that the public, including important public policy officials, has very little appreciation for the quantity and detail of the material that we already release.¹⁰⁵

Leaking the Asymmetric Tilt

May 18, 1993

The next salvo in the war took the form of "friendly fire" in which the Federal Reserve suffered self-inflicted wounds. Market interest rates were buffeted by "a string of media reports on System policy, particularly related to the choice of an asymmetric directive at the May FOMC meeting as well as Chairman Greenspan's Humphrey-Hawkins testimony."¹⁰⁶ For example, on

103. Transcript of the February 2–3, 1993, FOMC meeting, pp. 61–62.

104. The two documents also had been merged from 1936 to mid-1967. In the period before mid-1967, the "minutes" included what later became known as the "memorandum of discussion." The minutes originally had not been intended for public release, but at the strong urging of Congressman Wright Patman, then chairman of the House Banking Committee, the FOMC in effect made the minutes available to the public by transferring those for the years 1936 through 1960 to the National Archives in 1964, those for 1961 were transferred in 1967, and those for 1962 through 1965 in 1970. Thereafter, the minutes or, after mid-1967, the memorandum of discussion were transferred with a five-year lag. No memoranda of discussion were produced for FOMC meetings held after mid-March 1976. See David Mullins, "Proposal Regarding FOMC Minutes," memorandum to Federal Open Market Committee, March 17, 1993, pp. 1–2.

105. Transcript of the March 23, 1993, FOMC meeting, p. 1.

106. Vincent Reinhart, "Market Reaction to News about Monetary Policy," memorandum to Mr. Kohn, which was sent to the Board of Governors on the same day, August 3, 1993, p. 1. For a two-page listing of this publicity, see table 1 in that memorandum.

May 24, David Wessel reported in the *Wall Street Journal* the shift to an asymmetric tilt toward tightening, according to “people familiar with the Fed’s deliberations”; and on May 27, CNBC first reported a unanimous vote, then amended the story to report the two dissents—one on either side. A sense of the effect on public attitudes can be gleaned from the headline of a *Newsweek* story, “Pssst! Fed Sources Say . . . The Nation’s Central Bank Is Looking Mighty Leaky.”¹⁰⁷

The leaks in May 1993 were by no means the first that had confronted the Federal Reserve in the 1990s, not to mention in earlier decades. A year before, on May 21, 1992, the *Wall Street Journal* had published a story by David Wessel reporting on the switch to a symmetric tilt at the May meeting of that year. In mid-December 1991, Joseph Coyne, the Board’s director of Public Information, sent a memorandum to “everyone who attends FOMC meetings” on the subject of several instances in the previous month in which confidential FOMC information had been divulged. He addressed his memorandum to “Fed ‘Sources’ and Fed ‘Officials’.” He reiterated that

it is against the rules of the Federal Open Market Committee to reveal information about Committee actions or procedure which has not been authorized for release. . . . The point here is that decisions and procedures adopted at FOMC meetings are considered confidential until released by the Committee itself in the policy record or in some other form such as testimony before a Congressional committee.¹⁰⁸

And as noted previously, Chairman Greenspan’s last paragraph in his September 23, 1991, letter to Representative Neal emphasized how “extremely distressing” the earlier instances had been.

Receiving Representative Gonzalez’s Reaction

July 6, 1993

Representative Gonzalez’s reaction arrived at the end of the first day of the July FOMC meeting. This letter read in part:

I have received some complaints and a great deal of evidence that the supposedly secret Federal Open Market Committee (FOMC) proceedings are being released to a chosen few, through leaks and statements by Federal Reserve officials, far in advance of the date by which this information is released to everyone else. Releasing information in this manner can cause instability in financial markets and general economic uncertainty that reduces real investment.

I ask for your support in immediately employing a better way to disseminate information about our nation’s monetary policies. I think you should

107. *Newsweek*, June 28, 1993, p. 44.

108. Joe Coyne, “Leaks, etc.,” memorandum to “Fed ‘Sources’ and Fed ‘Officials’,” December 11, 1991, pp. 2 and 5.

promptly release your short summary of FOMC decisions after the meeting, rather than waiting for six weeks as is now done. Systematic information dispersal is much better than the system of leaks and random statements. As you know, I have introduced legislation that requires the central bank to adopt a prompt systematic method of information dispersal that will allow all citizens equal access to FOMC discussion of monetary policy.

Sticking to Their Guns

July 20, 1993

Chairman Greenspan replied on July 20 that “leaks are a very serious matter” and that, at their July meeting, FOMC members “reaffirmed the rules governing confidentiality of FOMC information.” Even so, the Committee made no change in its disclosure policies, which the Committee viewed as “soundly based.”

At his Humphrey-Hawkins testimony before the House on the same day, Chairman Greenspan was closely questioned by Representative Paul Kanjorski about leaks and the possible prompt release of information to avoid their unfair benefits to selected parties. Chairman Greenspan replied that, despite the seriousness of leaks, earlier release of the directive with its references to contingencies would significantly inhibit the efficiency of policymaking because the market reaction would induce a feedback on decisions and curtail the use of asymmetries.

Preparing to Testify before the House Banking Committee

October 5 and 15, 1993

On September 22, 1993, Chairman Greenspan was invited by Representative Gonzalez to testify on “The Federal Reserve System Accountability Act of 1992,” H.R. 28, which Gonzalez had introduced. He asked Chairman Greenspan to address the entire bill on Wednesday, October 13, and all the Board members and Reserve Bank presidents to focus on the disclosure section of the bill on Tuesday, October 19. This part of his bill would have required that the minutes of each FOMC meeting and a transcript and videotape of the meeting be made publicly available within sixty days and that a written description of any determination, decision, directive, or other conclusions by the FOMC be made publicly available within one week. The letters of invitation to the members of the Board and the Reserve Bank presidents sent on or about September 20 asked three questions concerning notes or records that “you” or “others” have made of FOMC meetings and early, unauthorized disclosures of FOMC information.

On October 5, the Committee held a conference call to prepare for the testimony. Chairman Greenspan indicated his intention to cover the Secretariat’s procedures and to reveal the existence of meeting transcripts.

Chairman Greenspan. . . . On question two, I will say . . . I’m also aware that the meetings are recorded by the FOMC Secretariat. These tapes are used to prepare the minutes released to the public after the subsequent meeting and are then recorded over. In the process of putting together the minutes from the tapes, an unedited and occasionally garbled transcript is prepared as are detailed notes adapted from the transcript. These notes and transcripts

generally are not seen by Committee members or by staff not involved in the preparation of the minutes. And they are kept secure by FOMC Secretariat staff. . . .

[M]y answer to question two will reveal that raw materials still exist for drafting [Memoranda of Discussion] going back a number of years.¹⁰⁹

However, Chairman Greenspan's mention of the existence of transcripts apparently was too fleeting to register on many FOMC listeners. According to later responses to Representative Gonzalez's letters of October 22, only Governor Mullins and President Boehne, both of whom had become aware in recent months that transcripts had been prepared, and President Melzer, who had learned of their preparation in 1989, apparently realized that meeting transcripts had been preserved as well as prepared. None of the other eleven FOMC members (four Board members and seven presidents) listening to the conference call did so.¹¹⁰ (Governor Angell and three presidents were not in attendance.)

Not until another pre-testimony conference call on October 15 that focused on the unedited transcripts going back to March 1976 did two more Board members and nine more Bank presidents realize the existence of an appreciable collection of these types of meeting records. Then, in response to questions from Presidents Silas Keehn and Robert Parry, Virgil Mattingly (general counsel of the FOMC) indicated that the other members could let Chairman Greenspan cover the recordkeeping practices of the Secretariat.¹¹¹ Moreover, as Governor Wayne Angell remarked to Chairman Greenspan at the December 21, 1993, FOMC meeting,

Mr. Angell. . . . And then even for those of us who had knowledge of what seemed to be the Committee's [procedures] and what the Secretariat was doing, when you said what you said it was clear and unequivocal that you had a responsibility as Chairman to reveal that information. So the question that was raised by individual members was: Should I put it in my testimony? Of course, for me, I had independent knowledge and it had to be in my testimony. But there was a discussion, as I recall, of members saying: Well, do I need to put it in my testimony? And I think we need to set [the point] out clearly that the individuals in asking that question never had any doubt that

109. Transcript of October 5, 1993, FOMC conference call, p. 2.

110. Indeed, according to a survey taken by the Secretariat on October 25, 1993, a month earlier the knowledge that unedited transcripts existed back to March 1976 was limited to Chairman Greenspan and Governors Mullins and Angell among the Board members and Bank presidents, although Presidents Jerry Jordan and Thomas Melzer did know that transcripts were prepared. Among the staff outside the Secretariat, only David Lindsey indicated knowledge of the history of preserved transcripts, although Thomas Simpson said he did know transcripts were initially made. Joseph Coyne, who was in charge of public information at the Board but who was not part of the survey, also should be included on this staff list, because he said in an interview that he learned of the history of transcripts in the days of Paul Volcker. (Paul Starobin, "The Fed Tapes," *National Journal*, LEGI-SLATE Report for the 103rd Congress, December 17, 1993, p. 2.) Some other staff members in the Division of Monetary Affairs also were aware of the historical transcripts but were not included in the survey.

111. Transcript of the October 15, 1993, FOMC conference call, pp. 7-8 and 17-18.

you and the Secretary were going to reveal fully [the existence of the tapes]. So no one, as I recall, had any view of not wanting the tapes to be out there. We knew they had to be.¹¹²

Chairman Greenspan, too, anticipated that the transcripts would become an issue.

Chairman Greenspan. . . . I think we can [engage in] some wishful thinking that it might not emerge on Tuesday, and there is a possibility it might not. I wouldn't bank on it. But if it doesn't happen on Tuesday, at some point it's going to become an issue.¹¹³

. . .

Mr. Kohn. I was going to say--at least the way the testimony reads now--the Chairman is not highlighting these transcripts. He's saying that the transcripts and detailed notes are made in the process of preparing the minutes, period. We're not waving red flags. Now, maybe we'll change our minds.

Chairman Greenspan. Can I say something? Why don't I literally read [the draft testimony].

Mr. Kohn. Yes, so--

Chairman Greenspan. Okay. This is what I propose to say: "I am also aware that the meetings are recorded by the FOMC Secretariat. These audio tapes are used to assist in the preparation of the minutes that are released to the public following the subsequent meeting. Thereafter the tapes are erased. In the process of putting together the minutes an unedited transcript is prepared from the tapes as are detailed notes on selective topics discussed in the course of the meeting. These notes and transcripts generally are seen only by the staff involved in preparing the minutes. And the documents are kept under lock and key by the FOMC Secretariat."¹¹⁴

112. Transcript of the December 21, 1993, FOMC meeting, p. 46.

113. Transcript of the October 15, 1993, FOMC conference call, p. 2.

114. Transcript of the October 15, 1993, FOMC conference call, p. 18. Chairman Greenspan's entire testimony appears in the *Federal Reserve Bulletin*, December 1993, pp. 1107–10.

**Testifying before the House Banking Committee¹¹⁵
October 13 and 19, 1993**

One reader of Chairman Greenspan's first testimony reacted favorably:

Dear Alan:

I've just finished reading your October 13 testimony while at 40,000 feet over the Atlantic. The altitude has nothing to do with the fact that I am on air.

It is a classic statement explaining and defending the organization and modus operandi of the Fed. I have no doubt that it will become the standard text on the question, and in the process educate a lot of people beyond your immediate audience.

All the rest of us have to do is say "amen."

As Bill Martin always used to close every letter or conversation: "Keep up the good work!"

With respect and thanks of all the alumni.

Paul [Volcker]

In the second appearance before the Congress, on October 19, Chairman Greenspan was joined by those five other Board members and ten Reserve Bank presidents who were available to testify in person. Those unavailable sent prepared statements. All said that proposals to require more disclosure would discourage free-flowing discussion at FOMC meetings, lead to poorer policy, and harm the economy. The various testimonies left the door open to the release of a detailed, albeit redacted, account of the meeting with a long enough delay—say five years.¹¹⁶ "Well, it looks like we don't have a consensus . . . yet," quipped Representative Gonzalez.¹¹⁷

Concerning FOMC records, Chairman Greenspan testified that

I have suggested to the Reserve Bank presidents that they respond to your questions regarding whatever records may be kept at their own Banks; I will cover records made by Board staff and, in particular, by the FOMC secretariat.¹¹⁸

115. The various testimonies appear in the *Federal Reserve Bulletin*, December 1993, pp. 1100–27.

116. *The New York Times*, October 20, 1993, p. D1

117. *The Washington Post*, October 20, 1993, p. C14.

118. *Federal Reserve Bulletin*, December 1993, p. 1109.

Besides Chairman Greenspan's statement, prepared testimony by Governors Mullins and Angell also divulged knowledge of the existence of the transcripts. Governor Mullins's testimony read:

As I believe Chairman Greenspan plans to discuss, I am aware that FOMC staff do retain some detailed, though edited, notes and rough transcripts for use in preparation of FOMC minutes.¹¹⁹

Governor Angell's testimony said:

Some years ago, I became aware of the existence of rough transcripts of the meetings when I was writing a dissenting statement. The Secretary of the FOMC made available to me a transcript of my statements, and only my statements, from the previous meeting.¹²⁰

Even so, the existence of the transcripts did not become an issue on the day of the testimony. But the record of the hearing suggests that Chairman Greenspan may have been about to expand on them when Representative Maurice Hinchey interrupted him with another question. The official U.S. House of Representatives transcript, mailed on October 21, reads:

Mr. Hinchey: . . . First, with regard to the question that the Chairman asked of Mr. Greenspan earlier, I just want to see if I understood the answer. As I understand it, there are tape-recordings taken of the meetings by staff. Those tape-recordings serve as the basis for the preparation of the minutes that are released a month or so later after the next meeting. And in the interim, those tapes are then taped over so that no permanent record exists in that way. Is that correct?

Chairman Greenspan: There is no permanent electronic record. That is correct. We obviously do have rough notes--

Mr. Hinchey: You make recordings, but the recording is taped over?

Chairman Greenspan: That is correct.

Leaking Makes the Transcripts an Issue October 22, 1993

On October 21, Representative Gonzalez, in asking about "tape recordings, unedited transcripts, and any other records of FOMC meetings that are maintained," cited this very exchange between Representative Hinchey and Chairman Greenspan.¹²¹ However, what would make the transcripts

119. *Federal Reserve Bulletin*, December 1993, p. 1111.

120. *Federal Reserve Bulletin*, December 1993, p. 1112.

121. The double-dash punctuation ("--") in the above exchange was reported correctly in the October 21, 1993, letter from Representative Gonzalez to Chairman Greenspan (p. 1) and in an October 26, 1993, press release from Representative Gonzalez (p. 4). However, by the time "The Federal Reserve's 17-Year Secret," prepared by the

an issue would not be Chairman Greenspan's letter in reply but rather another Federal Reserve leak. On the next day, October 22, *Wires Washington*, put out by Christopher Whalen, a former staffer at the Federal Reserve Bank of New York, included the following:

The latest congressional debate over the Fed's conduct of monetary policy focused both on proposals to make available verbatim written transcripts of the FOMC's meetings and changing the appointment process for the regional Fed bank chiefs. The Gonzalez panel specifically examined whether the Fed does, in fact, maintain permanent records of Federal Open Market Committee meetings, either in taped or transcribed form.

Officially, the Fed says that it re-records over the same tape used to prepare summary minutes of the FOMC's monetary policy sessions and that no other electronic records are maintained. But Gonzalez and his veteran staff hear increasingly from insider sources that, contrary to the party line from the Fed's bureaucratic mandarins in Washington, a nearly complete set of verbatim written transcripts does exist of the FOMC's secret deliberations. According to one source, Fed Governor Wayne Angell has used old transcripts when preparing for FOMC meetings. The same source claims that the documents stretch back to the era of Fed Chairman Arthur Burns (1970-1978), who discontinued the original practice of releasing detailed minutes in 1976 after a lawsuit was filed against the Fed demanding immediate public disclosure.

The existence of a body of transcripts comes as a stunning surprise to both Fed insiders and outside academics familiar with the issue. Discovery and public release of these transcripts was seriously contested in a series of lawsuits against the Fed from 1975 to 1987, but the central bank has consistently denied that any transcripts or tapes exist. . . .

Dr. Anna Schwartz, a respected economist and one of the country's leading authorities on the FOMC who also testified before Gonzalez, confesses to being "confused" by Greenspan's statements. "He did not address the issue

staff of the House Banking Committee, was issued on January 27, 1994, the indication of interruption denoted by "--" had inexplicably transmogrified into a period (p. 23). This replacement is emblematic of the general reliability of that document. Different errors appeared in Paul Starobin, "The Fed Tapes," *National Journal*, LEGI-SLATE Report for the 103rd Congress, December 17, 1993, p. 7, in which not only did Representative Hinchey's and Chairman Greenspan's words change but also the quotation marks migrated inside the dashes:

Junior committee member Maurice D. Hinchey, D-N.Y., took a stab at the issue, asking Greenspan: "If I understand it, there are tape recordings taken of the meeting. . . Those tapes are then taped over, so that no permanent record exists in any way; is that correct?"

Greenspan replied: "There is no permanent electronic record, that's correct. Obviously, I said we have rough notes"--at which point Hinchey asked another question.

directly,” notes Schwartz. “The Fed has been lying about the issue of transcripts for years. Listening to Greenspan, I could not discern whether he was talking about old transcripts or the regular meeting ‘notes’ that are prepared after the FOMC meets. As far as I could tell sitting in the room at the time, Greenspan did not clearly and explicitly disclose the existence of written verbatim transcripts in an unambiguous and forthright fashion so that members of the Committee understood what he said.”

The significance of Greenspan’s failure to focus directly on the existence of the transcripts has drawn the House Banking Committee’s further attention and goes far beyond the present debate. A senior congressional aide on the Banking Committee states bluntly that “Greenspan lied to the committee,” but the veteran economist, affirming Schwartz’s view, also says that the Fed Board has misled the public and Congress for many, many years over the question of FOMC transcripts. . . .

The Board hitherto has denied the existence of either tapes or written transcripts, but now members of Congress believe that a reversal of the Fed’s policy of silence is inevitable and perhaps imminent. In an interview on Friday, October 22, Coyne admitted that the “rough, unedited transcriptions” do exist of FOMC meetings all the way back to the Burns era.¹²²

On the same day, October 22, the first of two letters from Representative Gonzalez to Chairman Greenspan was short and to the point:

I understand that extensive records of FOMC meetings exist at the Board of Governors. Even though I have not yet received your official reply to my inquiry on this matter, I ask that you take all precautions necessary to assure that none of these records are destroyed, removed, or discarded.

I appreciate your cooperation in this matter.

The second letter dated that day, along with a long list of questions, included the following text:

your previous correspondence failed to disclose the practice or existence of recordings, transcripts or other verbatim records of any FOMC meeting. I was therefore surprised to learn from your testimony for the first time about the practice of recording FOMC meetings and keeping transcripts.

Most other Board members and Reserve Bank presidents also received letters dated that day, which contained numerous questions along with the following text:

122. *Wires Washington*, “Greenspan Eludes Congress on Secrecy and Reserve Bank Appointments,” October 22, 1993, pp. 1–3.

Your testimony failed to disclose the practice or existence of any records, transcripts or other verbatim records of any FOMC meeting. This stands in stark contrast to the testimony of Chairman Greenspan on the very same question. He stated that the FOMC secretariat in fact tape recorded the meetings, and prepared and preserved an unedited transcript from the tapes. I am disturbed about the discrepancy between your testimony and that of Chairman Greenspan.

Only four days later, before receiving any responses from his raft of letters of October 21 and 22, Representative Gonzalez issued a press release on October 26 indicating that he was opening an inquiry about whether the Federal Reserve was trying to confuse the Congress on these matters. In it he asserted initially that “not one witness, with the exception of Federal Reserve Chairman Alan Greenspan, indicated that he or she had any knowledge that the meetings are taped and a complete transcript kept. . . . Chairman Greenspan stated both in his written and oral testimony that the meetings are taped and transcripts kept. . . .” Nonetheless, he “appears to have carefully worded his response [to Representative Hinchey] so that there is no mention of unedited transcripts. It appears he was not dealing forthrightly with the Committee.” Then, contradicting his previous assertion, but once again ignoring Governor Mullins’s prepared testimony, Representative Gonzalez claimed that, other than Chairman Greenspan, only Governor Angell testified as to knowledge of the transcripts. “Why does Governor Angell know and everyone else does not seem to know or fails to tell us of the existence of transcripts?”

In separate letters dated October 26 to Representatives Gonzalez and Neal in response to their letters of October 21 and 19, respectively, Chairman Greenspan confirmed that unedited transcripts going back to March 1976 resided in the Secretariat files. The letter to Representative Gonzalez denied that the testimony by Federal Reserve officials could reasonably be construed to have confused or misled the Congress. Both letters also made clear that the unedited transcripts were used by staff to prepare the minutes, were never intended for public release, and had not been checked by meeting participants for accuracy. The letter to Representative Neal, which he held for a few days before releasing publicly, indicated that a significant delay before making some form of the transcripts public would be needed to prevent undue damage to the deliberative process. Indeed, even a delayed release would be altering the rules under which meeting participants thought they were operating. Chairman Greenspan wrote a more detailed letter on November 2 answering the questions asked by Representative Gonzalez on October 22. Other Board members and Reserve Bank presidents responded to him as well.

Chairman Greenspan later noted in a letter to Representative Hinchey on November 4 that his correspondence with Representative Gonzalez on October 22, 1992, concerned Memoranda of Discussion, not transcripts. He also said that it was the potential public release of tapes or transcripts, not the taping or transcribing per se, that would impair the deliberative process.

Press stories around this time portrayed the Federal Reserve as besieged by its critics. For example, in a “Reality Check” column, *Business Week* asserted:

Alan Greenspan says Federal Reserve Board policy decisions should remain secret until the Fed chooses to unveil them six weeks later. Responding to congressional critics who want to open up the process, the Fed boss says a tight-lips policy helps the central bank avoid creating turbulence in the credit markets. Plus, he says, airing details of what goes on in Fed meetings would squelch free and frank discussion. Now, only sketchy summaries are released.

In reality, the Fed periodically leaks word of policy changes, so it has no call to act so high-and-mighty. As a matter of fact, a recent study by two economists at the St. Louis Fed found that early release seldom has a big effect on the markets, because Wall Street is rarely surprised by Fed decisions. Germany's Bundesbank frequently announces decisions at a press conference held the day it votes. As far as doings inside the Fed, the only things that should be kept under wraps are contingency plans for possible future rate cuts or hikes. Otherwise, why not release full accounts of a public body's meetings within a week?¹²³

Deciding on the Disposition of Past Transcripts November 16, 1993

The Committee made its final determination about the treatment of existing transcripts at its November 16, 1993, meeting.¹²⁴ Before that meeting, much had transpired: The Committee had held a preliminary discussion in a conference call on October 22, staff had consulted with the National Archives on the issue of records, and Representative Gonzalez's letter of November 9 had requested copies of all tapes and transcripts in the Secretariat's files back to 1976 and suggested that the FOMC treat Freedom of Information Act (FOIA) requests for the transcripts in accordance with the liberalized interpretation promulgated by President Clinton.

Before the FOMC's conference call, a memorandum from Virgil Mattingly on October 21 informed the Committee of the Administration's new FOIA policy establishing a "presumption" for disclosure and proposed for Committee consideration again preparing and releasing with a delay memoranda of discussion (MODs) from the transcripts.¹²⁵ On October 22, the Committee authorized Virgil Mattingly to explore with the Justice Department whether the transcripts could be kept confidential under FOIA. One caveat was expressed:

123. *Business Week*, November 8, 1993, p. 6. The paper by two economists refers to a study by Michael T. Belongia and Kevin L. Kliesen that President Melzer decided should be published in a professional journal rather than in the Federal Reserve Bank of St. Louis *Review*.

124. For a useful summary and compendium of documents, see Bonnie Garrett, "Summary of November 16, 1993, FOMC Review of Public Access to Transcripts of FOMC Meetings," memorandum to FOMC Secretariat Files, January 17, 1999.

125. Virgil Mattingly, "Possible approach to deal with FOMC transcripts," memorandum to Federal Open Market Committee, October 21, 1993, attachment to transcript of October 22, 1993, FOMC conference call.

Mr. Angell. Except that every day that goes by increases the likelihood that the Congress may, in a sense, take it out of our control, and if we were thereby seen as being reluctant--

Chairman Greenspan. Well, I think we have to be careful about doing something which makes no sense. It may be that Congress wants to take it out of our hands. If they do, that's their prerogative.

Mr. Mullins. Pardon me again, Mr. Chairman. This is Governor Mullins. Do you mean there's the possibility of legislative action to require us to do this? I wasn't aware of such a strong interest in these issues in Congress, except for a few people. I don't quite understand what has changed so dramatically in the situation in the past couple of days to make us--

Chairman Greenspan. Well, why don't we just let Virgil go up there--¹²⁶

On November 10, William Wiles, Secretary of the Board, received a letter from James W. Moore, Assistant Archivist for Records Administration at the National Archives. The letter indicated that, in light of the disclosures of tapes and transcripts back to 1976, the Board staff should consult with the National Archives concerning retention of records.

Before the Committee's November 16 meeting, the conversations with the Justice Department and the National Archives were summarized by Virgil Mattingly, and Donald Kohn outlined the separate options for the disclosure of transcripts for past versus future meetings.¹²⁷ At the meeting itself, Virgil Mattingly indicated that both conversations were only exploratory. Nonetheless, he was heartened by his discussion at the Justice Department in that the FOMC's case seemed strong enough for the exemptions still to apply in protecting highly sensitive information and deliberative material of the FOMC against FOIA requests from the public, at least for a period of some years. Of course, FOIA would not protect FOMC information against a congressional request or subpoena. He also said that the tentative view of Archives staff was that the unedited transcripts going back were "records" and, under the Federal Records Act, would need to be turned over to the National Archives in thirty years. At that point, they would be available to the public despite any FOMC intent to prepare memoranda of discussion, or possibly even lightly edited transcripts instead, for release much sooner.

The Committee's primary concern was, as Chairman Greenspan put it, to avoid "premature, detailed disclosure of our deliberations" that unduly compromised the "openness and free

126. Transcript of the October 22, 1993, FOMC conference call, p. 8.

127. Messrs. Mattingly and Kohn, "Public Release of Information about FOMC Meetings," cover memorandum to Federal Open Market Committee, November 12, 1993, for Virgil Mattingly, "Public Access to Transcripts of FOMC Meetings," November 12, 1993, and for [Donald Kohn,] "Alternatives for Release of Information about FOMC Meetings," November 12, 1993. Also sent to the Committee was Normand Bernard, "Sample unedited transcript/edited transcript/and Memorandum of Discussion," memorandum to Federal Open Market Committee, November 12, 1993.

exchange of views so essential to monetary policy.”¹²⁸ For past meetings, the Committee settled on releasing redacted, lightly edited transcripts after five years. But it was split on how to handle future meetings, and so it deferred a decision. On Representative Gonzalez’s request for the tapes and transcripts, the following discussion ensued:

Mr. Angell. Well, what I’m wondering is whether or not there would be a possibility of your going to him and asking him if we could make them available to him as a Committee Chairman and keep them private and still have our five years. Do you think that’s an option? I thought, Virgil, we had to deal with the fact that he’s the Chairman of the Committee and--. Are we saying, “no” to him? Is that what we’ve [agreed]? Okay.

Mr. Kohn. This is very similar, Governor Angell, to what Chairman Burns replied to Chairman Patman in 1975--

Mr. Angell. I see.

Mr. Kohn. --who asked for the last five years of unpublished MODs and Chairman Burns said no.

Mr. Angell. Well, I do want to dissent from that decision. . . . Well, my fear is that we will have kicked and screamed all the way, and he will end up getting all of this [despite] our kicking and screaming and it will really put us in a very bad light with the public. I at least wanted a discussion of the alternatives to going that route.

Mr. Syron. What would you do? What would your approach be then?

Mr. Angell. My approach would be to authorize the Chairman to release to [Mr. Gonzalez] whatever FOMC materials he wants to see, if he will agree that only he and one staff person will look at them and that they will return them to you within a reasonable period of time--

Chairman Greenspan. I can’t--

Mr. Syron. That’s a dangerous precedent.

Speaker(?). A dangerous precedent.

Mr. Angell. So that’s impossible.

Speaker(?). That’s impossible.

128. Transcript of the November 16, 1993, FOMC meeting, p. 6.

Mr. Syron. Given the choice, I would prefer to stay here for the next two or three days and work out what we're going to do going forward rather than do that.

Mr. Kelley. So would I.

Chairman Greenspan. Can I suggest this? Unless I hear something to the contrary, the answer to Chairman Gonzalez is "no." We will release the transcripts in lightly edited form. We will do that starting with five years back and do the remainder as quickly as is feasible. If that is the case, and unless I hear something to the contrary, we will now move to the next item on the agenda.

Mr. Angell. Wonderful.¹²⁹

The minutes of the meeting also spelled out the details of the decision.¹³⁰ The lightly edited transcripts

would retain all substantive comments but would allow for grammatical corrections, the smoothing of some sentences to facilitate the understanding, and the correction of obvious transcription errors. The editing would be patterned after that done for congressional hearings: importantly no changes would be made in the substance or the intent of the speakers. Before release to the public, particularly sensitive materials would be redacted in accordance with the provisions of the Freedom of Information Act. The Committee agreed that the FOMC Secretariat should be given responsibility for the editing process. . . .

With respect to the interval between a meeting and release of a lightly edited transcript, all of the Committee members were concerned that the absence of a substantial lag would seriously harm the Committee's ongoing deliberative process. Many also commented that the absence of a substantial lag would be unfair to meeting participants who had been unaware that their remarks would be released and were unable to review the transcripts for accuracy. . . .

It was understood that the transcripts for the meetings held during 1988 would be edited on a priority basis and released as soon as possible. . . .

129. Transcript of the November 16, 1993, FOMC meeting, pp. 61–63.

130. In the event, the National Archives formally ruled on December 17, 1996, that even with the preparation of a lightly edited transcript, the unedited transcripts for past meetings have to be turned over in unredacted form in thirty years; this ruling applies to transcripts through 1993, which were never reviewed by individual speakers to correct possible errors.

Providing copies of unedited transcripts for all past meetings and available conference calls to the Chairman or staff of the House Banking Committee in response to a request was not approved by the Committee.

The members reviewed various options for the release of information about the Committee's deliberations at future meetings. . . . The members concluded that the complexity of the issues reflected in these alternatives warranted further review by the Committee.

Letting Representative Gonzalez's Staff Listen to the October 15 Tape December 21, 1993

Chairman Greenspan wrote to Chairman Gonzalez the day after the meeting enunciating the FOMC's new procedures and their rationale. Representative Gonzalez lost no time in replying. Also on November 17, he termed the plan "wholly inadequate," partly because it failed to comply with his "demand" for the transcripts and tapes. On December 3, labeling this aspect of the FOMC's decision "unacceptable," he asked the FOMC to allow his staff to review the tape of the October 15 FOMC conference call. Then, on December 8, he told the *American Banker* that the Federal Reserve reminded him of President Nixon in the Watergate scandal: "First they stonewalled, and then they started lying."¹³¹ He later denied calling Chairman Greenspan a "liar" but stood by the Watergate analogy.¹³²

On December 16, Chairman Greenspan wrote back that

regardless of whether information about the transcripts came from all members of the FOMC or only from three, the record obviously shows that you and the Committee were informed of their existence. Thus, I am unable to understand how you could suggest that we concealed this information.

I find your accusations of improper conduct by myself and my colleagues--in the face of facts absolutely to the contrary--to be inexplicable and distressing.

Even so, Representative Gonzalez believed that the FOMC's October 15 conference call "included a discussion of how to evade full disclosure of FOMC transcripts dating back to 1976."¹³³ He had formed this impression in part by examining a set of informal notes and a related memorandum from the call by Edward J. Stevens, Assistant Vice President and Economist, Federal Reserve Bank of Cleveland. President Jerry Jordan had provided them in response to the request from Representative Gonzalez on October 22.

The transcripts of the December 21 meeting contain the following:

131. "Now You Can Upgrade It to 'Feud'—Gonzalez Calls Greenspan a Liar," *The American Banker*, December 8, 1993.

132. John M. Berry, "The Fed Feels the Heat," *The Washington Post*, December 12, 1993, pp. H1, H5.

133. Letter from Representative Gonzalez to Chairman Greenspan, November 15, 1993, p. 2.

Chairman Greenspan. . . . I think it's important that we put the notions of that particular conspiracy behind us. . . . I would recommend to this Committee that we allow Chairman Gonzalez's [staff] attorney to listen to the tape at a meeting with several other people of our choosing. . . .

I must say, I make this recommendation with some reluctance because of its precedential nature. The October 15 meeting, however, was not a deliberative meeting on monetary policy. Were a request made for any of the transcripts or tapes of monetary policy and the deliberative processes that we go through, I think we'd have no choice but to say "no" unequivocally.

The staff of Chairman Gonzalez and of certain other House Banking Committee members listened to the tape. Allowing this limited access seemed to clear the air for almost all interested parties.

Representative Gonzalez, however, continued to put a sinister interpretation on the call, remaining convinced of FOMC culpability. On January 27, 1994, he accompanied the issuance of the report, "The Federal Reserve's 17-Year Secret," which was prepared by the staff of the House Banking Committee (principally Robert Auerbach), with a press release on the same day in which he claimed that the report's evidence

shows a pattern of deception and a lack of accountability that continues today. . . .

The extent to which Federal Reserve officials have collaborated in hiding the transcripts is especially evident in the taped conference call. . . .

One suspects the FOMC members who appeared before the Committee were trying to downplay the significance of the FOMC transcripts and were trying to mislead the Congress.

Another reader of the report was not favorably disposed. President Melzer wrote to Chairman Greenspan:

As you know, the report's premise is that there has been a long-standing conspiracy among senior officials at the Federal Reserve to mislead Congress and the public and to conceal certain FOMC records. To support its premise and misleading conclusions, the report takes statements made by Fed officials out of context, distorts facts and ignores the chronology of events. The report is a blatant advocacy piece written to justify altering the monetary policymaking process, and it could seriously damage the reputation of the Fed if left unanswered. . . .

Among the reasons President Melzer gave for his proposal for the staff to prepare a response was that, “[a]lthough the report has received scant attention from the media and the public, . . . we have a responsibility to correct the report’s allegations simply because they are false.”¹³⁴

President Melzer had prepared a draft letter on May 9, 1994, which he had considered sending “to a senator or congressman (other than Mr. Gonzalez) for the sole purpose of having a response ‘on the record’ but instead decided to recommend to [Chairman Greenspan] a broader response.”¹³⁵ Selections from that unsent draft concerning the allegations in the January 27 House Banking report follow:

I am dismayed that such allegations would be made without any reasonable basis and appreciate the opportunity to set the record straight. I have not participated in any effort to conceal FOMC transcripts, nor to my knowledge has anyone else on the FOMC. The allegations in the House Banking Committee report were supported solely by “statements” of FOMC members, including some of my own, which were taken out of context and/or mischaracterized. In addition, other statements which refute the allegations were omitted from the report.

The allegations revolve principally around an FOMC conference call on October 15, 1993, initiated by Chairman Greenspan. . . .

Subsequently, although FOMC deliberations are considered privileged and protected from disclosure, Chairman Greenspan let House Banking Committee and other Congressional staff review the audio tapes and transcripts of the October 15 call. The Chairman’s intention was to put to rest allegations that there had been a conspiracy to conceal information at the hearings. The records were made available with the understanding that their privileged and confidential status would be upheld. Nonetheless, a number of statements attributed to participants during this call appear in the House Banking Committee staff report. Those statements attributed to me were generally taken out of context and twisted to support the report’s allegations.

For example, it is stated in the report that I suggested that existing FOMC transcripts be destroyed, when in fact I advocated nothing of the sort. My comments related to hypothetical recordkeeping practices in the future under the new FOIA policy. If detailed minutes fully reflecting the substance of a meeting had been prepared and approved, I saw no need to retain transcripts used solely in the preparation of those minutes. Furthermore, I later said, in a statement that was omitted from the report, that the existing transcripts would

134. Letter from Thomas C. Melzer to Alan Greenspan, July 14, 1994.

135. Letter from Thomas C. Melzer to David E. Lindsey, February 15, 1995.

have to be released. This statement clearly contradicted the report's false characterization of my earlier statement.

In addition, other statements from various letters and testimony were taken out of context. For example, in January 1993, well before the hearings, I replied to a request from Chairman Gonzalez regarding my views on public disclosure of FOMC deliberations, as did other FOMC members. Though current FOMC recordkeeping practices were not at all germane to this request, the House Banking Committee staff concluded in the report that failure to mention such practices at that time was further evidence of an effort to conceal FOMC transcripts. I find it peculiar, to say the least, to be accused of covering up because I failed to answer a question that was not asked or even remotely related to what was asked. . . .

Deciding on the Disposition of Future Transcripts

February 2, 1995

The FOMC postponed several times its discussion of how to handle future transcripts. Inactivity at the Committee level, though, belied the ferment in the subcommittee. The subcommittee had already sent a background list of alternatives to the FOMC before the regular December 1993 meeting with a cover note that highlighted two main options without reaching a conclusion.¹³⁶ However, the FOMC discussed instead Representative Gonzalez's request about the October 15 tape. Then in March 1994, the subcommittee prepared drafts of a cover note and a background outline of options.¹³⁷ That draft cover note did

reach a conclusion: to wit, the subcommittee was recommending that the tapes be turned off, but that accountability and openness be enhanced by allowing concurring statements to be filed with the Minutes and by immediately announcing FOMC decisions to change instrument settings. (But recall Ed Boehne's reminder at the last meeting that the subcommittee did not feel that an announcement was desirable when instrument settings were left unchanged at a meeting.) The subcommittee saw this as a package, in which announcements and concurring statements would help to ameliorate any backlash in Congress from turning off the tape and the related possibility that Congress would mandate procedures posing a clear threat to the deliberative process. (Mullins was no longer at the Board, but had argued very strongly for turning off the tape: he differed with the final subcommittee recommendation only in that he wanted to release the whole directive

136. David Mullins, "FOMC Information Release," December 6, 1993, cover memorandum to Federal Open Market Committee for Donald Kohn, "FOMC Information Release," memorandum to FOMC Subcommittee, December 14, 1993. The cover note did indicate a consensus of subcommittee members for an immediate announcement of the policy setting, though it was split on whether to include the "tilt."

137. President Boehne, Governor Kelley, and President Melzer, "FOMC Disclosure Release," March 11, 1994, [draft] cover memorandum to Federal Open Market Committee for [Donald Kohn,] "Alternatives for Release of Information about FOMC Deliberations Decisions," March 11, 1994.

immediately, eliminating the chance of leaks relating to asymmetries.) I think one factor contributing to the subcommittee's recommendation was concern about the aggressive posture of the House Banking Committee, and the possibility that the FOMC would not be able to resist demands for very rapid release of transcripts.

The subcommittee recommendation and associated outline were never sent. The Chairman was concerned about political repercussions, especially when we were in the middle of the consolidation fight. Owing to the same concerns (though not just related to the consolidation issue) Don Winn and Joe Coyne strongly opposed the recommendation to turn off the tape.¹³⁸

This encapsulation was intended to bring Governor Alan Blinder up-to-date; he formally replaced Governor David Mullins as chairman of the subcommittee on disclosure issues on July 25, 1994.

The new subcommittee sent its recommendations to the FOMC in August 1994:

I. Tapes and Transcripts

ISSUE 1: On or off?

Majority recommendation: Leave the tapes on--most of the time. . . .

ISSUE 2: How long a delay before release?

Unanimous recommendation: Five years. . . .

ISSUE 3: How detailed?

Unanimous recommendation: Transcripts should be edited only to enhance readability and to redact confidential materials pertaining to businesses and foreign governments, as at present. . . .

II. Minutes

ISSUE: Should the minutes be fuller, including either attribution of statements to individuals or assenting opinions on the directive?

Majority recommendation: Keep the minutes more or less as they are now, but add concurring statements from those FOMC members who wish to append them. . . .

III. Announcements

138. Donald Kohn, "FOMC documents on tapes and transcripts and on announcing policies," memorandum to Vice Chairman Blinder, July 15, 1994, pp. 2–3. The underlining is in the original.

ISSUE 1: Should we announce policy decisions immediately?

Majority recommendation: Make an announcement with each policy change, including intermeeting changes. When there is no change at a meeting, simply announce that the meeting is over.

Possible variant: Make an announcement after each meeting, even when there is no change in policy. . . .

ISSUE 2: How detailed should statements be?

Majority recommendation: Issue a few sentences of explanation with each policy change, to be written by the Chairman. His authorship will avoid lengthy, unproductive, and possibly contentious Committee drafting sessions.

Variant 1 (more explanation): Make these explanations a bit fuller than typical discount rate announcements.

Variant 2 (less explanation): Offer explanations only occasionally, not as a standard practice. . . .¹³⁹

Another background document from the Board's Legal Division also went to the FOMC.¹⁴⁰ It analyzed what rights of access members of the public and the Congress have to transcripts or tapes of FOMC meetings.

The Committee decided to adopt all but one of the recommendations of a majority of the subcommittee. Most of the recommendations represented Committee practices that had become the "de facto status quo," in the words of Governor Blinder at the meeting.¹⁴¹ The press release on February 2, 1995, stressed this continuity. As the next section of this paper will discuss in more detail, the Committee reaffirmed its procedures for immediate announcement of a change in the policy stance. The press release also stated:

Transcripts of FOMC meetings for an entire year will be released with a five-year lag. Transcripts will be lightly edited, as they are now, to enhance readability and redact confidential material.

The minutes later provided more information about the procedures that the Committee had agreed would be used for transcripts.

Continuing the practice followed since the beginning of 1994, transcripts prepared by the Committee's Secretariat will be circulated to each participant to verify his or her comments, and only changes that clarify meaning, such as the correction of grammar or transcription errors, will be permitted. . . . As required by law, a complete, unredacted version of the transcript of each

139. Alan Blinder, Ed Boehne, Mike Kelley, Tom Melzer, "FOMC disclosure policy," August 22, 1994, pp.1-5.

140. Messrs. Mattingly and Baer, "Access to FOMC Transcripts and Tapes by the Public and Members of Congress," memorandum to Federal Open Market Committee, January 18, 1995.

141. Transcript of the January 31-February 1, 1995, FOMC meeting, p. 3.

meeting will be turned over to the National Archives after thirty years have elapsed.

For the purpose of preparing the minutes and transcripts, the discussions of monetary policy at Committee meetings will continue to be recorded. The tape recorder may be turned off at the Chairman's discretion when the Committee deals with issues unrelated to monetary policy, such as organizational and personnel matters. The transcripts will indicate that the tape recorder has been turned off and the minutes will provide a summary description of the matters that were discussed. As permitted by the National Records Act, the recordings and unedited transcripts will be discarded after all the participants at the meeting have reviewed and corrected, as necessary, the transcripts prepared by the Secretariat.¹⁴²

The one subcommittee recommendation that was not part of Committee practice was to allow concurring as well as dissenting statements. This proposal was a holdover from the original Mullins subcommittee and predated the decision to release lightly edited transcripts. During the discussion, two more members of the subcommittee turned against the idea as having been overtaken by events, leaving only its chairman, Governor Blinder, in support. The FOMC as a whole decided not to adopt the recommendation.

In its story on the decision, the *New York Times* concluded:

Representative Henry B. Gonzalez . . . a long-time Fed critic, welcomed the decision. "I consider the Federal Reserve's adoption of disclosure policies a victory," he said, "and commend the Fed for embracing some of the measures I have urged for years."¹⁴³

Without Representative Gonzalez's dogged, if at times misdirected, uninformed, and infuriating efforts, the transcripts to this day might not have reached the public. In fact, as Chairman Burns argued when the MODs were discontinued, the interest in detailed minutes is only infrequent. However, in retrospect, the availability of transcripts has informed historical assessments of the Committee's performance—for example, as captured in the extensive quotes in Bob Woodward's bestseller *Maestro*.

Complying with Existing Legislative Goals and Reporting Requirements

After a rather halting start, the economy in the 1990s hit its stride at the decade's halfway mark and finished in a sprint, even without the aid of a rising inflationary tailwind. By the end of the decade, the inflationary gale of the late 1970s had been transformed into a gentle summer breeze

142. On December 17, 1996, the National Archives formally ratified all the procedures followed by the Secretariat.

143. *The New York Times*, "More Open Fed on Rate Moves," February 3, 1995.

for prices of goods and services if not for prices of equities. The disinflation was due importantly to stronger productivity growth in the second half of the 1990s, which represented a powerful counterforce, while the FOMC stayed out of the way during most of this period. Over the entire time since the 1970s, however, the Committee deserves the lion's share of the credit for the restoration of price stability.

This section reviews the developments in the 1990s concerning the FOMC's approach to its legislative goals and the communication of its policy implementation to the Congress, the public, and financial markets. Perhaps a brief summary of the subjects in this section is warranted before the discussion starts in earnest.

As the decade got under way, the Committee's response to signs of economic contraction and then tepid expansion arguably was amplified by its reaction to weak M2 growth relative to the announced range. By February 1993, however, the behavior of M2 velocity had become so aberrant relative to short-term interest rates that the FOMC had to abandon communicating the thrust of its policy in important part through its annual M2 growth ranges. At that time, the Committee further downgraded this aggregate essentially to one among many information variables. The Humphrey-Hawkins testimony of July 1994 reported that the Committee had reinterpreted the monetary ranges as reflecting the behavior of the aggregates in a steady state, assuming stable prices, sustainable economic growth, and flat M2 velocity. The Committee retained that interpretation until the mandatory money and credit ranges died when the reporting requirements of the Humphrey-Hawkins Act themselves expired in 2000.

In the minds of some observers, the demise of money seemed to leave monetary policy devoid of an effective nominal anchor, leading to suggestions that the FOMC lengthen the period of its macroeconomic forecasts or establish multiyear quantitative inflation targets. After considering these proposals, the FOMC rejected them in 1994 and early 1995, electing instead to retain more flexibility. And throughout the 1990s, the Federal Reserve never had to follow up its testimony in 1989 on the Neal "zero inflation" bill by testifying on new legislation mandating long-run price stability as its primary objective. (Representative Neal's first bill in 1989 called on the Federal Reserve to cut the inflation rate at least 1 percentage point each year until zero inflation was achieved. His replacement bill in the same year instead gave the Federal Reserve five years to get to stable prices.)

The FOMC considered the working definition of price stability and the appropriate strategy for approaching this objective at its midyear meetings in 1996 and 1997. Even without an explicit nominal anchor, the FOMC did implement monetary policy as if it had been aiming at a low inflation rate target while pursuing its other mandated goal of maximum employment. Indeed, Governor Janet Yellen had made a similar case in February 1995. She said that such an approach not only was possible in theory but also represented the essence of Committee conduct in practice. Although the evidence through 1996 is not decisive, the Committee also seemed to rely mainly on forecasts of inflation and economic performance rather than to look simply at prevailing circumstances. The FOMC's communication of its design framework emphasized the preemptive nature of monetary policy.

Tracking M2 While Being Overtaken by the Four Horsemen**July 21, 1992**

The 1990s began with a recession, which seemed to have as its proximate cause the jump in oil prices and the hit to confidence resulting from Iraq's invasion of Kuwait in early August. M2 was growing even more slowly than nominal spending. In the summer of 1991, the Division of Monetary Affairs sent an analytical memorandum to the FOMC on monetary weakness.¹⁴⁴ And the staff's research into the M2 slowdown intensified from there.

Chairman Greenspan's July 1992 Humphrey-Hawkins testimony analyzed the ongoing rise in M2 velocity in some detail. He concluded the monetary retrospective with the following:

Thus, the weakness in the broader monetary aggregates, which has been even more pronounced this year, can be seen as an aspect of the entire process of re-channeling credit flows away from depositories and of restructuring the public's balance sheets. However, the disintermediation and restructuring forces, which have acted powerfully to depress the growth of money, have exerted a less powerful constraint on spending; that is, slower money growth has not tended to show through percentage point for percentage point to reduce expansion of nominal gross domestic product. Accordingly, these disintermediation and restructuring forces have tended to boost the velocity of the broader aggregates. Increasing M3 velocity has been evident for some years, but the tendency for M2 velocity to rise was obscured until recent quarters by the opposing influence of declines in short-term market rates. Lower short rates reduced the potential returns given up by holding liquid M2 balances, thereby providing support to demands for M2 and countering the emerging tendency for its velocity to increase. But M2 velocity appears to have registered an appreciable increase in the first half of this year, and the Federal Reserve has had to take the emerging behavior of velocity into account in deciding how much weight to place on slow M2 growth in guiding its policy actions.¹⁴⁵

A condensed version reviewing the role of M2 and the emerging behavior of its velocity was prepared shortly thereafter in the same year for a staff member's paper.

Some of the properties of M2 demand over most of the post-war period strongly recommend it as a policy indicator. The velocity of M2 has tended to revert over time to its historical average value (of 1.6454 to be precise). This characteristic underlies the celebrated work of Federal Reserve Board staffers Messrs. Hallman, Porter, and Small on P-star. Their study demonstrates that, once accelerationist dynamics are accounted for, the statistical connection

144. Division of Monetary Affairs [drafted principally by William Whitesell], "The Weakness in M2," memorandum to Federal Open Market Committee, August 15, 1991.

145. Statement by Alan Greenspan before the Senate Committee on Banking, Housing, and Urban Affairs, July 21, 1992, *Federal Reserve Bulletin*, September 1992, p. 677.

between M2 and the average price level has been remarkably close in the United States. This model's forecast of inflation to date has been quite accurate, though in recent quarters a tendency to underpredict inflation is surfacing, perhaps as a result of a possible uptrend in long-run equilibrium velocity, for reasons I will turn to soon.

Causality tests extended through the 1980s suggest that M2 retained--though perhaps to a more attenuated degree--its leading indicator properties in predicting future nominal spending and real output. Through the 1980s as well, a satisfactory M2 demand function could be identified that contained only a few variables--as Milton Friedman long ago had contended in his restatement of the quantity theory of money. Moreover, its interest elasticity appeared neither too large nor too small to be useful for policy purposes, although it did vary over time after a change in short-term interest rates. It was relatively large for a while, but then declined as deposit rates gradually caught up with the initial move in short-term market interest rates.

In the last three years, this demand function has broken down. The very substantial decline in short-term market rates compared with the average rate paid on M2 balances did not generate a sharp pickup in M2 growth relative to that of nominal GDP. The reasons are varied, and for a more extensive discussion I recommend Chairman Greenspan's July Humphrey-Hawkins testimony and a forthcoming study by Messrs. Feinman and Porter of the Federal Reserve Board's staff. Suffice it here to recount the main forces that seem to have depressed the demand for M2 relative to nominal GDP and imparted the uptrend in its velocity that has become evident in recent quarters. The Board staff has identified four of these forces, which we have dubbed the "Four Horsemen of the Apocalypse." They are 1) Outlays of the Resolution Trust Corporation (as well as of the bank regulatory agencies) in resolving insolvent thrifts (and banks), which transferred a sizable amount of assets to the government's books and lessened the need for depository funding; 2) The so-called "credit crunch," which reduced bank loan growth and further lessened the need for banks to aggressively price retail deposits; 3) The process of household de-leveraging, which involved drawing upon liquid money balances to repay or avoid debt; and 4) The steepening of the yield curve, which made longer-term market instruments, including bond and stock mutual funds, more attractive relative to retail deposits.

Despite the evident uptrend in M2 velocity of recent quarters, note should be taken that weakness in M2 relative to its annual ranges in 1991 and 1992 did turn out to portend sluggish economic growth. This was not a coincidence, as some of the same forces depressing M2 demand also were acting to hold back spending, though to a lesser degree. In this sense, the Federal Reserve's continued easing of its policy stance over the last two years, which at times

was prompted in part by weakness in M2 as well as by other factors, surely seems vindicated in retrospect.

Nonetheless, confidence in the short- and intermediate-run relation between M2 and nominal GDP, which has never been high, can only be lessened further by the evidence of the last couple of years that the demand for M2 relative to spending is much more complex, is dependent on more variables, and is more difficult to predict than believed previously. This emerging characteristic would add conceptual support for Federal Reserve willingness to tolerate shorter-run deviations of M2 growth from its anticipated path before necessarily acting to adjust its funds rate policy instrument.¹⁴⁶

Downgrading Broad Money to Information-Variable Status

February 2–3, 1993

By February 1993, the FOMC must have had enough. The continued unusual increase of M2 velocity through 1992 finally caused the Committee to demote this aggregate from its precarious perch atop the pantheon of monetary policy guides. Chairman Greenspan expressed his frustration with monetary relationships at the February FOMC meeting:

Chairman Greenspan. . . . What is the policy role of targets[?] Targets were imposed on us in the Humphrey-Hawkins legislation and we have been employing them ever since, first with M1 and then M2 and M3. . . .

I frankly don't think that whatever targets we agree to today are going to make the slightest difference in the way this Committee functions in the next year because whatever is going on we will respond to it. What we decide today will be an interesting thing to look at, but I would be very surprised if anybody here really is driven by the fact that we are on one edge of this target [range] or the other. I may be exaggerating for some of the people around this table, but I'm not exaggerating for myself!

Having said all of that, I then ask myself: "What should we be doing?" Well, we have a statute out there. If we didn't have the statute, I would argue that we ought to forget the whole thing. If it doesn't have any policy purpose, why are we doing it? By law [we have] to make such forecasts. And if we are to do so, I suggest that we do them in a context which does us the least harm, if I may put it that way.¹⁴⁷

After an extended analysis of the causes of recent monetary developments, Chairman Greenspan's February Humphrey-Hawkins testimony reported:

146. David E. Lindsey, "Evaluation of Policy Indicators in the United States," November 2, 1992, 19th SEANZA Central Banking Course, Bank of Japan, Tokyo, pp. 365–66.

147. Transcript of the February 2–3, 1993, FOMC meeting, pp. 38–39.

In the past few years, the broader aggregates, in turn, have become much less reliable guides for the conduct of policy. . . . The FOMC necessarily has given less weight to monetary aggregates in the conduct of policy and has relied on a broad range of indicators of future financial and economic developments and price pressures. . . .

This use of a broad range of indicators is appropriate because achievement of the ranges for growth of particular measures of money and credit is not, and should not be, the objective of monetary policy. Rather, the ranges are a means to an end. The Humphrey-Hawkins Act, incorporating this view, does not require that the ranges be attained in circumstances in which doing so would not be consistent with achieving the more fundamental economic objectives.¹⁴⁸

Rejecting a More-Distant Horizon for the Semiannual Macroeconomic Forecasts February 3–4, 1994

For the early February 1994 meeting, the staff had requested the 1995 projections of the individual Board members and Reserve Bank presidents six months early because of congressional suggestions to add another year to the coverage of the Committee members' macroeconomic forecasts. On the first day of the meeting, Michael Prell described the results:

Mr. Prell. . . . In broad terms, most of you are projecting that growth will be sufficient to achieve small to appreciable further declines in unemployment, and no further progress toward price stability.¹⁴⁹

Specifically, the central tendency forecasts for CPI inflation were 2½ to 3 percent for 1994 and 2½ to 3¼ percent for 1995.

The ensuing discussion included the following:

President Jordan. . . . [T]he numbers we now have for 1995 are higher than the numbers we had for 1994 a year ago; 1993 similarly was progressively moved up. So, it's a pattern that implies becoming accustomed to accepting no further progress on inflation, and I find that very disturbing. If those numbers are accurately based on current policy or the assumption about what policy will be, then I think the conclusion would have to be one of two things: Either we have changed our objectives with regard to inflation or we have to change our policies. Otherwise we're going to send the wrong message to people who look at these numbers to gauge the Committee's real intent.¹⁵⁰

148. Statement by Alan Greenspan before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, February 19, 1993, *Federal Reserve Bulletin*, April 1993, p. 278.

149. Michael J. Prell, "FOMC Chart Show Presentation—Conclusion," appendix to transcript of February 3–4, 1994, FOMC meeting, February 3, 1994.

150. Transcript of the February 3–4, 1994, FOMC meeting, pp. 24–25.

The next day, Donald Kohn laid out the issues regarding the suggestion of announcing these forecasts for 1995 at the February 1994 hearing.

Mr. Kohn. . . . Members of Congress and their staffs have asked whether the Committee could supplement money ranges with other methods of explaining important intermediate-term considerations guiding the conduct of policy. One possibility is to stretch out the forecast period, and it was with this in mind that we asked for your 1995 projections.

A key aspect of projections two years out is that they probably can be viewed as representing to an important extent Committee members' desired outcomes, within the constraints imposed by the starting point and the structural relationships embedded in the economy. That is, the lags in policy effects are probably not so long that if the Committee viewed the outcomes as not the best available, it would still have time to take actions to improve the situation. Seen in this way, the projections do contain some information about the Committee's preferences and its view of the short-run tradeoffs. Your 1995 projections, for example, show no deceleration in inflation from 1994 coupled with some further decline in the unemployment rate to the neighborhood of 6½ percent. This suggests that, on average, you share the staff's view of the level of the NAIRU, and hence, absent a sharp weakening in aggregate demand in 1996, would not anticipate further disinflation. You also have lower unemployment rates associated with roughly the same levels of inflation as the staff, perhaps indicating a more favorable slope in the short-run Phillips curve than assumed with staff projections.

The risks in giving long-run projections is that Congress may focus on these as targets--especially on the real variables, such as the unemployment rate. These forecasts tend to highlight short-run tradeoffs without focusing on longer-term consequences of trying to exploit these tradeoffs. Without the discipline of an explicit price stability goal for the central bank, we could find ourselves under greater pressure on real variables over which our power is limited over a period of years, and for which we have no authority to set objectives. What was once an adjunct to the monetary ranges could become the centerpiece; indeed, we would be giving projections for a year in which we had no monetary targets. If the forecasts are used, the report and testimony ought to emphasize both that the FOMC does not control the level or growth of potential GDP and would welcome the lowest possible unemployment rate consistent with sustainable growth, and that an attempt to exploit short-term tradeoffs can be counterproductive.¹⁵¹

151. Donald Kohn, "Long-run Policies," appendix to transcript of the February 3–4, 1994, FOMC meeting, February 4, 1994, pp. 6–7.

Because of the evident conflict between the projections and objectives for 1995, in the Committee's discussion the extended forecasts were deep-sixed faster than a decaying corpse.

Rejecting an Even-More-Distant Horizon for the Semiannual Macroeconomic Forecasts July 5–6, 1994

At the July 1994 meeting, when the projections for 1995 were routinely added to the report to the Congress, Senator Donald Riegle (Democrat from Michigan and chairman of the Senate Banking Committee) requested that 1996 be included in the central tendency forecasts—a full year sooner than usual. This time, the out-year forecasts were not included in the chart show, which already had incorporated the years 1994 and 1995, and so Donald Kohn's briefing introduced the topic. He said that in February of that year some FOMC members had noted

that the projections for 1995 did not seem to match the Committee's stated objectives, especially with regard to reducing inflation. Presumably, the Banking Committee is interested in what emphasis you are putting on that objective; they also seem to be trying to get your sense of the level and growth of economic potential, which they see as important influences on policy decisions. The central tendencies of the projections you turned in this time for 1996 closely resemble your outlook for 1995--real growth around trend and unemployment at recent levels, with CPI inflation at or just over 3 percent.

The information provided could be useful to Congress and the public in gauging the objectives and strategy of the FOMC. The risk is that it would be misunderstood--that the FOMC would be seen as having targets for variables not under its control over the longer run, such as the sustainable level of economic growth and unemployment. And, Congress could be tempted to hold the FOMC more accountable for misses in these variables than in inflation projections. The situation would be especially difficult in the case of an adverse supply shock or should the NAIRU turn out on the high side of current projections, particularly if the FOMC took timely action so that misses in inflation seemed smaller or were slower to develop than deviations from forecasts of output or unemployment.¹⁵²

Unlike the previous discussion of this issue in February, the Committee's treatment of the extended forecasts was, well, extended. Chairman Greenspan took the baton from Donald Kohn.

Chairman Greenspan. Don, let me sort of interpolate on what you ended up saying with respect to providing 1996 projections to Congress. I think our public policy posture always has to be in favor of either low or declining

¹⁵². Donald Kohn, "Long-run Ranges," appendix to transcript of the July 5–6, 1994, FOMC meeting, July 6, 1994, pp. 6–7.

unemployment rates or low or declining inflation. The truth of the matter is that while monetary policy matters, it obviously can't encompass as much as the committees up on the Hill would like to require us to accomplish. I think we have to indicate that we will accommodate as strong a growth as comes out of a non-inflationary environment. Indeed, we would foster such growth but argue strenuously that long-term stability and the sustainability of employment require that inflation be held in check. While we acknowledge the short-term Phillips curve, we can't acknowledge, because I think it doesn't exist, anything beyond the very short-term posture. Once we get into that, I think we are letting ourselves be led down a road of public policy perceptions that we can't meet and shouldn't meet. If Congress wants to impose certain requirements on us, that's their prerogative, but for us to get out there and make a projection, which we all do, we also have to recognize that projections are not goals. I will make a projection that I think the inflation rate will be "x" and I think "x" is unacceptable. That doesn't mean that I say "x" is unacceptable, therefore I will change it. A goal and a projection are two fundamentally different things. We don't make the distinction in our request for your projections. We merely ask what individual members are projecting. Some are thinking of them as goals and some are making them as forecasts. And that's fine; it's fine in the sense that it seems to be working. But once we get out beyond the intermediate period, I think we're in for some serious questions.¹⁵³

Board Vice Chairman Blinder defended the extra year.

Mr. Blinder. . . . I want to raise the possibility of being a bit more forthcoming about the 1996 projections than seems to be the consensus, at least based on what we have heard around the table so far. One of the things the Federal Reserve gets accused of by those who are looking to accuse it of things is being overly mysterious and secretive. Some things have to be secret, of course. But the kinds of numbers we were just speaking about for 1996 projections are very much in line with the consensus; they would put us right where the Administration is, right where the CBO is, right where the central tendency of private-sector forecasters is. I very much agree that we should qualify it, fudge it, make sure that these are viewed as projections, not goals. I couldn't agree with that more. But with broadening them into ranges, with the kind of prose that goes around it, I think our interests might be well served by saying a little more about where we think the economy is going in the slightly longer run. The second reason is, as we know and as we always stress, that monetary policy needs to be focused on a longer horizon than six quarters. I think any one of us around the table would say we couldn't make monetary policy if we closed our eyes to what was going to happen in quarters

153. Transcript of the July 5–6, 1994, FOMC meeting, p. 38.

7, 8, 9 and 10. All of us have some ideas about what's going to happen in those quarters, which are quite important to what we want to do about monetary policy today--probably a lot more important than what we think is going to happen in the next two quarters in fact. So, both in terms of clarifying our own thoughts for the broader public that is watching us closely in terms of meeting a little bit--this is a very small step--the request for more openness, I think there is at least something to be said for going public, so to speak, with these projections.

Chairman Greenspan. Let me ask you this. These numbers, if we could make sure they are conceived of as forecasts, are benign, but releasing them would set a precedent, which would then have to be continued in the future. There are going to be occasions when I would suspect the judgment of this Committee as economic forecasters, as professionals, would be to forecast a rising unemployment rate or some other unwelcome development, and I wonder how we would handle that at that point. You can argue that it's a forecast, but then the response will be that the Federal Reserve should prevent it from happening.

Ms. Minehan. Yes.

Chairman Greenspan. And we may not have the capability of doing so.

Mr. Blinder. I think that's a perfectly good question. I think it's likely--it wouldn't necessarily always happen--that in the event that we were forecasting a rise in unemployment over the coming two years, we would probably be easing monetary policy; possibly we wouldn't.

Chairman Greenspan. But maybe not.

Mr. Blinder. Yes, maybe not. I don't disagree with that.¹⁵⁴

Presidents Robert Forrester, Gary Stern, and Edward Boehne also spoke in the affirmative, but the sentiment of the Committee was better captured by Governors Susan Phillips, John LaWare, and Lawrence Lindsey, and, finally, Chairman Greenspan.

Ms. Phillips. . . . With respect to 1996 forecasts, I agree that more disclosure is better. I also think that if we are going to disclose more, we ought to disclose more but better things, and I am not sure that the numbers for 1996 would necessarily provide better information. So, I'd prefer more of a description of direction or even goals. I know for myself that when I sit down to do those projections and I look 2½ years out, I just don't think that the

154. Transcript of the July 5-6, 1994, FOMC meeting, p. 48-49.

numbers for 1996 represent quality disclosure; it's quantity but not quality. So, I think we would do better with some description.¹⁵⁵

...
Mr. LaWare. . . . With regard to the Riegle request, I ask myself: In July 1992, what would I have forecast the economy to look like in July 1994? And I can't believe that there is any real accuracy in a forecast that far out. We run the danger of not being able to forecast accurately and then having to explain later on why we were so far off and why we didn't do anything about it. If, for example, the forecast says one thing and the conventional wisdom is that it ought to be something very different, then why are we not doing something to make the forecast different. The forecast is always going to be interpreted however someone wants to interpret it when they've got us on the carpet. If it was an attractive forecast, then it will be assumed to have been a goal, and if it is an unattractive forecast, it will be assumed to be an admission of failure. I just think we are asking for trouble if we get into something that dicey. I doubt very much that the models that we are playing with here would have accurately forecast in July of 1992 where we are today. So, I just think it's dangerous to get that kind of thing in numerical form in front of the public.¹⁵⁶

Governor Lindsey recounted his experience in 1982 as a staff economist on the Council of Economic Advisers with a five-year-ahead forecast of real GDP.

Mr. Lindsey. . . . Marty Feldstein, who had sort of a baseline, said let's guess 4 percent a year, starting in the second quarter of 1983. Here is the dart thrown at the dartboard. It turned out that the 1987 real GDP forecast was off in fact in 1987 by a total of \$3 billion, which is as close to a bull's eye I have ever seen anyone make. But in the meantime, first it was criticized as wildly optimistic, and then it was criticized as wildly pessimistic as the economy went above and below the forecast. So anyone has to be crazy to make that kind of forecast even if it turns out to be right! [Laughter] Nobody ever remembers you were right. At the very least, I think Jerry Jordan's point is correct, that this is going to be interpreted somehow as our wish list. For us to put out numbers that have unemployment and inflation rising has to invite an attack. It's worse than forecasting 4 percent growth for five years. . . .¹⁵⁷

Chairman Greenspan. . . . The Riegle request gets turned down, but there is a general view that as best we can we should be more forthcoming. There is a sense in which Humphrey-Hawkins essentially sets the monetary aggregates as a signal that could be objectively evaluated by the Congress with respect to what it is we are doing. As the meaning of the aggregates falls away, there is

155. Transcript of the July 5–6, 1994, FOMC meeting, p. 53.

156. Transcript of the July 5–6, 1994, FOMC meeting, p. 54.

157. Transcript of the July 5–6, 1994, FOMC meeting, p. 56.

an obligation on our part to give the Congress some objective criteria. I happen to think that the one requested by Senator Riegle is potentially mischief-making, and I am not sure that it serves our purpose to do this in the way in which it is requested. What I do think we ought to be saying more about is what our goals are, what we are looking for, and what our outlook is for 1995 and 1996 in a qualitative sense. I mean to draw the distinction between goals and forecasts. I would judge that our forecasts as a group do not clash violently with those of either the Administration or the CBO, as Governor Blinder indicated. Perhaps noting that in the Humphrey-Hawkins text without putting numbers down per se would enable us to associate ourselves with the forecasts and still talk about broader questions such as where we think the goals of the Committee should be without putting the specific numbers down. . . .¹⁵⁸

Relegating the Broad Monetary Ranges to Benchmark Status

July 5–6, 1994

At its July 5–6, 1994, meeting, the FOMC adopted an interpretation of the broad money ranges that in effect converted them to benchmarks for price stability, assuming sustainable economic growth and stable M2 velocity. The Committee selected a range for the M2 growth rate of 1 to 5 percent for the current and the next year, as had been the case since July 1993 and would continue through the rest of the decade to satisfy the requirement of the Humphrey-Hawkins Act.

In his testimony, Chairman Greenspan initiated what would become a familiar refrain throughout the remainder of the 1990s:

The monetary ranges . . . are already low enough to be consistent with the goal of price stability and maximum sustainable economic growth, assuming an eventual return to more stable velocity behavior. From that point of view, we felt that maintenance of the current monetary ranges would give the clearest indication of the long-run intentions of policy.¹⁵⁹

Rejecting Multiyear Inflation Targets

February 1, 1995

The transcript of the December 1994 meeting contains the following:

Mr. Melzer. . . . I must say, though, that I'm not at all convinced that we have fully met the current challenge especially if our goal, as I think it should be, is price stability. Therefore, I think it is important that we give serious consideration at the February meeting as to how we might convey our long-

158. Transcript of the July 5–6, 1994, FOMC meeting, pp. 57–58.

159. Statement by Alan Greenspan before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, July 20, 1994, *Federal Reserve Bulletin*, September 1994, p. 797.

term intentions in this regard. The question that we had from Senator Riegle last July was indicative, I think, of the fact that perhaps on the outside there was some confusion as to exactly what we intended.

Chairman Greenspan. There has been some discussion that the new Congress would establish such a legislative goal.

Mr. Melzer. Yes. With regard to that issue, perhaps one thing we ought to think about would be to provide some longer-term inflation forecasts, say beyond 1995 or 1996, because, as an initial step in considering legislation, I think one could say that monetary policy is going to have its principal long-run impact on inflation. Eventually, I would be inclined to establish long-run inflation or price level objectives as some other central banks have done. Now clearly this is going to require a lot of further work, and I'm encouraged by the fact that the staff is looking into that issue. I would hope that we might have something, at least to start on, that we could talk about at the February meeting.¹⁶⁰

This subject was the special topic for a preliminary Committee discussion in February 1995.¹⁶¹ A staff background paper was distributed to the Committee laying out the pros and cons of strict multiyear inflation targets.¹⁶² It is worth recalling that the legislative initiatives in the United States, as well as President Melzer's original request for a discussion of "long-term intentions" did not embody the more eclectic concept of "flexible inflation targeting."¹⁶³ Indeed, that phrase had not yet been coined.

At the February meeting, President Broaddus and Governor Yellen conducted an informative debate on the issues. President Broaddus gave this overview of his remarks:

Mr. Broaddus. . . . I appreciate the opportunity to make a few comments about inflation targeting. Actually, I am going to use the term "inflation objectives," if I may, because I think that describes and reflects more accurately what I have in mind. To my mind, this is an idea whose time has definitely come. Let me cover just three things. . . . First, I will summarize as clearly as I can the analytical case for some kind of explicit inflation objective. Then, I want to comment on just one of the most frequently heard objections. Finally, I would like to say a little about what specific kinds of

160. Transcript of the December 20, 1994, FOMC meeting, p. 34.

161. Bonnie Garrett, "Summary of February 1, 1995, FOMC Discussion of Inflation Targeting," memorandum to FOMC Secretariat Files, August 24, 1995. This document has a compendium of useful attachments.

162. David E. Lindsey, "Multi-Year Inflation Targets," memorandum to Federal Open Market Committee, with an appendix by Richard Freeman, "Inflation Targeting in OECD Countries," January 20, 1995.

163. The bill sponsored by Senator Connie Mack, which was just starting to be discussed, could be read in its final version as embodying some attention to real variables only during the initial transition to price stability and not afterward.

objectives we might want to introduce and how we might proceed if the Committee decides, and I hope it will, that this is a good idea and wants to move in this direction. . . .¹⁶⁴

He argued that nailing down the long-term inflation goal quantitatively would have a variety of desirable consequences for the eventual trajectory to price stability. Governor Yellen came next:

Governor Yellen. I am strongly opposed to the adoption of formal multi-year inflation targets. I thought I would begin by outlining the case against them. This proposal has two distinct features. The first has to do with the number of goals we should be pursuing, a single goal or multiple goals. I am taking this proposal to be essentially the strong one that Dave Lindsey suggested in his memo, namely, that the inflation rate should be the sole objective of policy for current and future years with no weight being placed on achieving competing, ultimate goals for real variables. I am going to speak against that proposal, and I note that it is a somewhat stronger proposal than I heard Al just support. The second aspect of the proposal has to do with numerical as opposed to qualitative targets. Since I am particularly opposed to the single goal, that is what most of my remarks are going to focus on rather than the numerical character of it.¹⁶⁵

One of her points was that a Taylor rule contains a specified inflation target *and* it responds to the real side of the economy, consistent with what the FOMC had been doing; such a policy is not usefully termed “inflation targeting,” which implies that more priority is accorded to that goal, both in principle and in practice.

Although the entire transcript gives the Committee’s full-blown reaction to these presentations, only Chairman Greenspan and the minutes need to be quoted to give a flavor of the discussion.

Chairman Greenspan. Let me just say what I think the purpose of this discussion is. We do not have a Neal bill, but there clearly is going to be a Connie Mack bill that will be very close to the Neal bill, and we are going to be asked to comment on it. The basic purpose of this discussion is to get our first cut as to where this Committee stands for purposes of testifying on that legislation. My own judgment is that if we do not announce any specific inflation targets, our policy can actually be similar to what Al Broaddus was suggesting. If we do announce explicit inflation targets, they become in effect a statutory obligation for this Committee to adhere to; and I am not sure by any reading of the Humphrey-Hawkins statute that inflation targeting is consistent with it.¹⁶⁶

164. Transcript of the January 31–February 1, 1995, FOMC meeting, p. 39.

165. Transcript of the January 31–February 1, 1995, FOMC meeting, p. 42.

166. Transcript of the January 31–February 1, 1995, FOMC meeting, p. 20.

The minutes state:

The Committee also considered the potential advantages and disadvantages of setting specific targets for bringing inflation down and achieving price stability over time. Such targets might provide an alternative or supplemental approach to the monetary growth ranges, which had been found to be unreliable guides for monetary policy over the past several years. The members discussed a number of aspects of inflation targeting. On the one hand, such targeting would help to anchor the conduct of monetary policy and progress in meeting these objectives could enhance the credibility of the Federal Reserve and perhaps reduce the overall cost of attaining price stability. On the other hand, close adherence to present inflation targets could unduly constrain the Federal Reserve in its efforts to counteract the effects of cyclical shortfalls in the performance of the economy. The members agreed that the discussion had been helpful in outlining the issues and that the subject should be revisited. It was noted in this connection that the Committee might be asked to comment during the months ahead on specific congressional proposals for inflation targeting.¹⁶⁷

Finally, some of the concluding comments of Chairman Greenspan are as follows:

Chairman Greenspan. . . . My own view is that a general long-term view of price stability of the Neal form is a very useful conceptual anchor for us to do basically what we have been doing. This is essentially, as Bob McTeer mentioned just a moment ago, that we are sort of one cycle away from being there. But the problem is that we do not go in a straight line, to the extent that we are even focusing on it. You may recall that a couple of years ago, we all basically said we were going to have to move early on the upside or we will not achieve anything resembling price stability. Now, I submit to you that is exactly what we did. We did follow a price stability objective in a cyclical sense, that is, one where the inflation rate is going to be lower at each progressive cyclical peak and lower at each progressive cyclical low. But that objective is not being implemented in a straight line because we have recognized, and I think correctly, that the Congress would not give us a mandate to do that.¹⁶⁸

Senator Connie Mack (Republican from Florida), who was chairman of the Joint Economic Committee, and Representative Jim Saxton (Democrat from New Jersey), who was vice chairman, initially introduced “The Economic Growth and Price Stability Act” in September 1995. It would have repealed the Humphrey-Hawkins Act and made price stability the central

167. Minutes of the January 31–February 1, 1995, FOMC meeting, *82nd Annual Report*, 1995, p. 120.

168. Transcript of the January 31–February 1, 1995, FOMC meeting, p. 44.

focus of the Federal Reserve, requiring the FOMC to set an explicit numerical goal and effectively promote its attainment. Senator Mack reintroduced the bill in each subsequent Congress through 1999, and Representative Saxton reintroduced it in early 1997 and a stricter version of price stability legislation in late 1997 and in 1999. In the end, the Federal Reserve never formally testified on these bills, although in hearings before congressional committees, Chairman Greenspan was occasionally asked about the role of price stability. For example, he indicated in 1995 that price stability should be the paramount long-run goal but that the precise definition should be left to the Federal Reserve, as the meaning would change slightly from time to time.¹⁶⁹

Considering the Working Definition of, and Approach to, Price Stability July 2, 1996, and July 1, 1997

Despite having turned a cold shoulder to formal “inflation targeting,” the Committee did look at the precise meaning of its long-term inflation goal and the appropriate strategic approach to it on July 2, 1996. David Stockton and John Roberts had prepared memoranda framing the issues.¹⁷⁰ Once again Governor Yellen and President Broaddus began the Committee discussion by presenting differing positions in “point-counterpoint” fashion.

Governor Yellen argued that downward nominal wage rigidity is an aspect of human nature. As a result, as recent research had suggested, an inflation rate below 2 percent or so would begin to induce a noticeable increase in the NAIRU. In contrast, President Broaddus again defended specifying and disclosing the Committee’s choice of a particular numerical representation of its long-term inflation goal. Such a deliberate step would have many advantages for central bank credibility and discipline, as opposed to the approach of “opportunistic disinflation,” a term that he thought had a rather pejorative connotation.¹⁷¹

In the course of Committee discussion, Chairman Greenspan reiterated his own qualitative definition of price stability as prevailing when households and businesses have no need to take expectations of future inflation into account in their decisions.¹⁷² Then President McDonough spoke:

169. S. 1266, “The Economic Growth and Price Stability Act,” Congressional Liaison Files, p. 1.

170. David Stockton, “The Price Objective for Monetary Policy: An Outline of the Issues,” a report to the FOMC, June 16, 1996; John Roberts, “Recent Differences in Measures of Consumer Price Inflation,” memorandum to Members of the Board, both with a cover memorandum from Donald L. Kohn, “Price Objectives for Monetary Policy,” memorandum to Federal Open Market Committee, June 21, 1996.

171. See Athanasios Orphanides and David W. Wilcox, “The Opportunistic Approach to Disinflation,” *Finance and Economic Discussion Series*, the Board of Governors of the Federal Reserve System, May 1996. The paper ultimately was published in *International Finance*, vol. 5, no. 1, 2002.

172. Transcript of the July 2–3, 1996, FOMC meeting, p. 51. At Jackson Hole, Wyoming, in late August 1996, Chairman Volcker himself pointed out that he had articulated a similar definition in a speech entitled “Can We Survive Prosperity?” before the American Economic–American Finance Association on December 28, 1983:

A workable definition of reasonable “price stability” would seem to me to be a situation in which expectations of generally rising (or falling) prices over a considerable period are not a pervasive influence on economic and financial behavior. Stated more positively, “stability” would imply that decision-making should be able to proceed on the basis that “real” and “nominal” values are substantially the same over the planning horizon--and that planning horizons should be suitably long.

Vice Chairman McDonough. Mr. Chairman, I think price stability is a means to an end, and the end is sustained economic growth, which is how I resolve what appears to be the conflict in the Humphrey-Hawkins legislation and the Federal Reserve Act. I define price stability exactly the way you do. First of all, it is a very good working definition, and secondly, since you are the head of the Federal Reserve, using your definition makes a great deal of sense for all of us. If we each have a different definition of price stability, it certainly confuses the body politic. Since most of the speeches that I give are on price stability, because I think that is what we ought to be talking about, I would also argue that it has major sociological and therefore political benefits. Since most people can understand that more readily than the economic definition of price stability, I think it gets the point across better.

As long as you are willing not to put a number on this purely verbal definition of price stability, we in fact have a national consensus on it. Therefore, the question is whether it is to anybody's benefit to define it more exactly. I am reminded of my days at Holy Cross College studying scholastic philosophy, which had been debating more or less the same major points for seven centuries by the time I came along. Some of those points on which absolute truth had not been defined are probably easier to resolve than an exact numerical definition of price stability. I am not sure that we are ever going to find the absolute truth here or that the search for this absolute truth is anything other than something that would give the FOMC something to do for the next seven centuries. [Laughter] Therefore, why would we want to have anything other than the informal consensus that we have?¹⁷³

In subsequent Committee give and take, numerous members indicated at least an informal preference for an inflation rate in the neighborhood of 2 percent.

Chairman Greenspan. Can I switch the subject? Since we have now all agreed on 2 percent, my question is, what 2 percent? Let me present the issue more specifically. You can ask the question, what is the inflation rate as appropriately measured, which implies that we can measure it. Or you can ask what is the appropriate inflation indicator that we should focus on, recognizing that it is not appropriately measured and has various biases. . . .

Two percent of what? It is a perfectly credible argument to say, whatever the inflation rate is now, that it should be lower. That is an unambiguous statement. Members can have their own particular measure and say, I think it is 4, I want to go to 3 or I think it is 1, it should go to zero. Everyone is in agreement with that.

173. Transcript of the July 2–3, 1996, FOMC meeting, p. 53.

Speaker(?). Instead of choosing, let's use all of them.

Chairman Greenspan. If you put a number down, the question inevitably is raised as to what you are talking about unless you want a Jesuitical solution that bypasses the whole question. . . .

My own view, as I have stated many times, is that our goal should be price stability. But I do not think we should have a naive view as to what is required to get there or what it means when we get there and what we do when it is no longer rhetoric but action that we need to maintain it. I believe that we underestimate the productivity effects that occur at those levels. The analogy would be that as a particle moves to the speed of light, its mass changes. My own view, which is probably going to be determined to be correct eventually--in the year 2252--[Laughter] is that as the inflation rate goes down, the tendency for nominal wages not to come down will enforce cost-cutting improvements and technological changes. It is not that low or stable prices are an environment that is conducive to capital investment to reduce costs, but rather that it is an environment that forces productivity enhancements. It forces people who want to stay in business to take those actions--such as cutting down the size of the cafeteria, reducing overtime, and taking away managers' drivers--that they did not want to take before in the ordinary course of business in a modest inflationary environment because it was easier then just to raise prices to maintain margins. If you force the price level down, you induce real reallocations of resources because to stay in business firms have to achieve real as distinct from nominal efficiencies. That phenomenon is what price stability means to me, and I see it as a very complex issue. When we first talked about it in the context of a 10 percent or so rate of inflation, we could just have an academic discussion.

Vice Chairman McDonough. Sure.

Chairman Greenspan. But now we are getting there and the question is basically whether we are willing to move on to price stability. The question is whether we as an institution can make the unilateral decision to do that. I agree with you, Mr. Vice Chairman. I think that this is a very fundamental question for this society. We can go up to the Hill and testify in favor of it; we can make speeches and proselytize as much as we want. I think the type of choice is so fundamental to a society that in a democratic society we as unelected officials do not have the right to make that decision. Indeed, if we tried to, we would find that our mandate would get remarkably altered.¹⁷⁴

174. Transcript of the July 2-3, 1996, FOMC meeting, pp. 63, 65, and 67.

The Committee revisited the issue of the empirical counterpart of price stability one year later, on July 1, 1997. Board staff distributed a memorandum to the Committee summarizing the main issues.¹⁷⁵ This time David Stockton's briefing led off the FOMC's discussion. The following extract from the transcript is notable:

Chairman Greenspan. I would like to raise a more fundamental question about this whole issue. It is not something that we need to address in the shorter term, but it does come up when we look beyond a 5-, 8-, or 10-year horizon. If we start to focus on price stability now, we should try to be aware of the problems that we may be confronting over the longer term.

First, let me raise a heretical issue. Is price stability really what we are after or are we after financial stability? Even more generally, going back over time we have tended to argue, I think correctly, that the objective of monetary policy is to create maximum sustainable economic growth, and we have argued, again I think quite correctly, that price stability is a necessary condition to reach that goal. But price stability may indeed be a proxy for something else, which I suspect is financial stability.¹⁷⁶

He proceeded to point out that the widespread decline in the prices of the output of high-tech industries

involves very tough conceptual and measurement problems for us. It is by no means clear exactly how we should measure price stability, given the prospect that it will become increasingly difficult over time to define what constitutes output and prices. I raised the issue at an earlier meeting and suggested that it really didn't matter all that much from a policy standpoint because it may well be that what we are endeavoring to do is to stabilize the inflation premium in long-term interest rates. In short, as Jerry Jordan said, the question is whether we are looking at the inflation of prices or the decline in the purchasing power of money. In this context, even if we get to the point where we are not able to define very explicitly the unit of production or bundle of goods or services involved in particular nominal dollar sales and hence are unable to define exactly what constitutes price, there is no question that we will still have a nominal interest rate out there. An inflation premium is of necessity implicit in the nominal interest rate. We may not be able to define a particular price, but in the end we know that markets are operating on the basis of some notion of prices. When we move into the 21st century, what we will try to stabilize may in effect be the purchasing power of money, however that is measured.

175. David E. Lebow, Deborah J. Linder, Daniel Sichel, and Robert Tetlow, "Toward a Working Definition of Price Stability," memorandum to Federal Open Market Committee, June 19, 1997.

176. Transcript of the July 1–2, 1997, FOMC meeting, pp. 49–50.

The reason I raise these questions is not that we have to worry much about them in the current period, as I noted. All I wish to put on the table is the notion that, as we respond to the excellent paper by Dave Stockton and his colleagues, we bear in mind that it is a paper that really refers to the nearer term. The problems that we will be dealing with as we get beyond the turn of the century are going to be increasingly difficult to resolve and in fact to define. There is no conceptual problem involved in defining nominal GDP, and we can in principle calculate it down to the last dollar or even the last cent if we know how to measure it correctly. It is unambiguously defined. The unit of production is not; price is not. So, I think the problems that we will have to deal with in defining what we are stabilizing are going to increase in the years ahead. What I want to suggest is that we confront the question of whether we are trying to stabilize prices or trying to stabilize the financial system. That is where the issue of asset prices comes in; it is in a certain sense positioned on a continuum that begins with spot prices for units of goods and services.

In sum, I am speculating that we are going to have problems that are quite different from those that we have today. While I am not saying that these involve issues that we need to resolve today, I suspect that we will start to confront them in 5 years or certainly within 10 years, and they may very well affect our projections going out to, say, the year 2006. I also suspect that by around the year 2006, this very tricky question may involve what we are endeavoring to stabilize and may be the focus of our policy actions. My own guess is that we are going to be dealing with asset prices, the question of nominal long-term interest rates, and probably the outlook for nominal GDP as well. In any event, our task will surely be tougher than it is today, and the issue will be how we should proceed. For the moment, fortunately, that is not an issue. All this probably is violating President McTeer's view that we should just sit and enjoy it, but I did want to mention that I have a different set of worries. Tomorrow, I will raise the conventional worries.¹⁷⁷

Implementing Monetary Policy

1990-96

The effort by the Desk to return to adjustment plus seasonal borrowing as the main guide to open market operations was abruptly discontinued after November 22, 1989. Formally, the Committee continued to employ a borrowed reserves operating target and in effect to vote on changes to the borrowing assumption. But informally things had changed completely. All the members were aware of the implied intended federal funds rate that in practice would take precedence over the level of borrowing during the intermeeting period. In conducting daily operations, the Manager took care to follow established precedents to the letter to make the signals about the intended federal funds rate as unambiguous as possible to market participants.

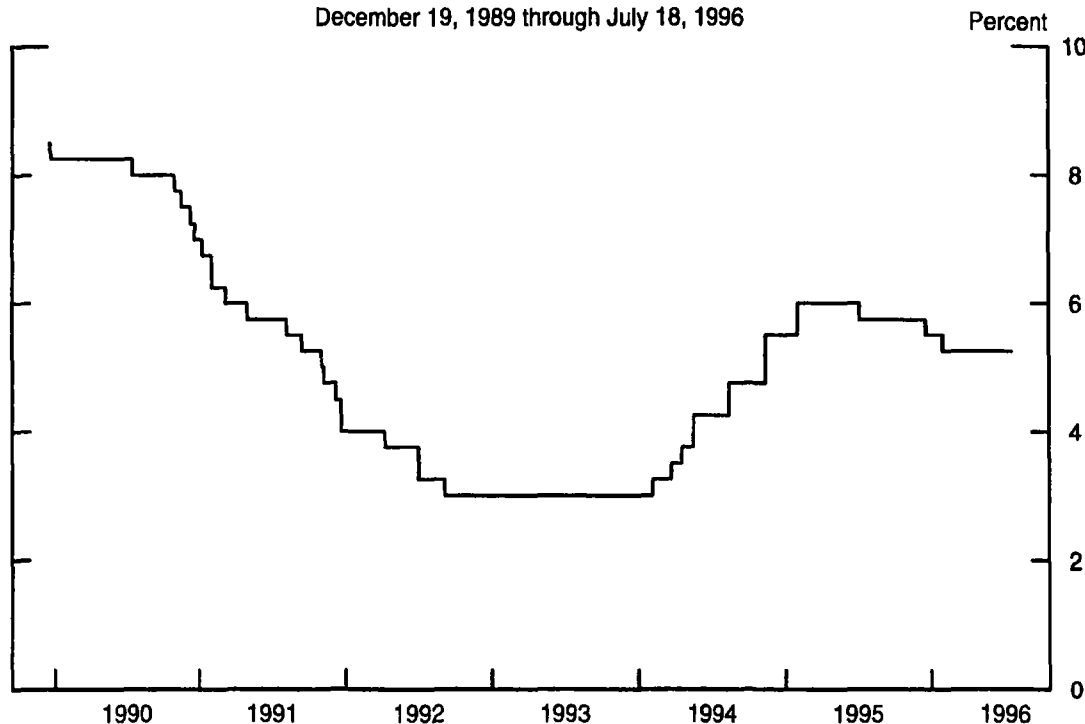
177 Transcript of the July 1-2, 1976, FOMC meeting, pp. 50-52.

Chart 4 shows the Committee’s intended level of the federal funds rate from December 19, 1989, through the Humphrey-Hawkins testimony of July 1996. The data used to construct the chart are taken from the Federal Reserve Board’s public web site, under “Open Market Operations.”¹⁷⁸ The Humphrey-Hawkins ranges of money and credit growth (table 12) had, by the middle of the decade, become unimportant as an influence on the determination of the funds rate, but the same cannot be said of the Committee members’ outlook for critical macroeconomic variables, as captured by the semiannual projections of the Board members and Reserve Bank presidents. Tables 13–16 show the central tendency of these projections for 1990 through 1996. As suggested by the statistical results discussed in chapter VI, the FOMC from 1990 through 1996 focused mainly on forecasts of inflation and resource use, while gradually adjusting the federal funds rate, in designing monetary policy. That is, through 1996, the FOMC appears to have acted, while exhibiting a preference for gradualism, as if it had been implementing a systematic response of its intended federal funds rate to changes in the outlook both for inflation relative to an implicit objective and for the unemployment rate relative to an implicit estimate of the sustainable natural rate of unemployment.

Chart 4

Intended Federal Funds Rate

December 19, 1989 through July 18, 1996



178. <http://www.federalreserve.gov/fomc/fundsrate.htm>

Table 12
Money and Debt:
Current-Year Growth Ranges in Humphrey–Hawkins Reports
and Monetary Policy Reports, and Actual Growth, 1990–2000
(Percent, fourth quarter to fourth quarter)

Year	M1		M2		M3		Domestic nonfinancial debt	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual
1990	n.s.	4.2	3–7	3.9	1–5 ¹	1.8	5–9	6.9
1991	n.s.	8.0	2½–6½	3.1	1–5	1.3	4½–8½	4.5
1992	n.s.	14.3	2½–6½	1.9	1–5	.5	4½–8½	4.6
1993	n.s.	10.5	1–5 ²	1.4	0–4 ²	.6	4–8 ²	4.9
1994	n.s.	2.3	1–5	1.0	0–4	1.4	3–7	5.3
1995	n.s.	-1.8	1–5	4.2	2–6 ³	6.1	3–7	5.3
1996	n.s.	-4.5	1–5	4.6	2–6	6.8	3–7	5.4
1997	n.s.	-1.2	1–5	5.7	2–6	8.8	3–7	5.2
1998	n.s.	1.8	1–5	8.5	2–6	10.9	3–7	6.7
1999	n.s.	1.9	1–5	6.2	2–6	7.5	3–7	6.6
2000	n.s.	-1.5	1–5	6.3	2–6	9.2	3–7	5.3

NOTE. Actual growth rates are as reported in the Monetary Policy Report to the Congress issued in February of the next year. Subsequent revisions to historical data (not shown) have altered growth rates by up to a few tenths of a percentage point.

1. At the February 1990 meeting, the FOMC specified a range of 2½–6½ percent. At the July 1990 meeting, this range was lowered to 1–5 percent.

2. At the February 1993 meeting, the FOMC specified a range of 2–6 percent for M2, ½–4½ percent for M3, and 4½–8½ percent for domestic nonfinancial debt. At the July 1993 meeting, these ranges were lowered to 1–5 percent for M2, 0–4 percent for M3, and 4–8 percent for domestic nonfinancial debt.

3. At the February 1995 meeting, the FOMC specified a range of 0–4 percent. At the July 1995 meeting, this range was raised to 2–6 percent.

n.s. Not specified.

Communicating Monetary Policy

1990–96

Needless to say, as these years passed the FOMC members did not have in mind an exact underlying structure of the Committee's implicit policymaking behavior, given that it acted only "as if" it were implementing a particular estimate of its reaction function, and even then only up to the error term. Still, the FOMC publicly emphasized the basically preemptive nature of its policymaking. For example, the following are extracts from Chairman Greenspan's Humphrey-Hawkins testimonies during the period:

Table 13
Nominal GNP/GDP Growth:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1990–96
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1990	5½ to 6¾	5½ to 6½	5½ to 6½	4.3
1991	5¼ to 6½	3¾ to 5¼	4½ to 5¼	3.2
1992	5½ to 6½ (GNP)	4½ to 5¼ (GDP)	5¼ to 6	5.4
1993	5½ to 6¼	5½ to 6	5 to 5¾	5.1
1994	5 to 6½	5½ to 6	5½ to 6	6.6
1995	5 to 5½	5 to 6	4¼ to 4¾	4.2
1996	4¾ to 5¾	4¼ to 4¾	5 to 5½	5.1

NOTE. Projections are for GNP through 1991 (including projections made in July 1991 for 1992); projections thereafter are for GDP.

February 22, 1994. [M]onetary policy affects inflation only with a significant lag. That a policy stance is overly stimulative will not become clear in the price indexes for perhaps a year or more. Accordingly, if the Federal Reserve waits until actual inflation worsens before taking countermeasures, it would have waited far too long. At that point, modest corrective steps would no longer be enough to contain emerging economic imbalances and to avoid a buildup of inflation expectations and a significant backup of long-term interest rates. Instead, more wrenching measures would be needed, with unavoidable adverse side effects on near-term economic activity.

February 22, 1995. Because the effects of monetary policy are felt only slowly and with a lag, policy will have a better chance of contributing to meeting the nation's macroeconomic objectives if we look forward as we act--however indistinct our view of the road ahead. Thus, over the past year we have firmed policy to head off inflation pressures not yet evident in the data. Similarly, there may come a time when we hold our policy stance unchanged, or even ease, despite adverse price data, should we see signs that underlying forces are acting ultimately to reduce inflation--to be willing to adjust our stance as the weight of new information suggests it is no longer appropriate.

Table 14
Real GNP/GDP Growth:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1990–96
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1990	1½ to 2	1¼ to 2	1½ to 2	.3
1991	1¾ to 2½	¾ to 2	¾ to 1	.2
1992	2¼ to 3 (GNP)	1¾ to 2½ (GDP)	2¼ to 2¾	2.9
1993	2¾ to 3	3 to 3¼	2¼ to 2¾	2.8
1994	2½ to 3¼	3 to 3¼	3 to 3¼	4.1
1995	2½ to 2¾	2 to 3	1½ to 2	1.5
1996	2¼ to 2¾	2 to 2¼	2½ to 2¾	3.1

NOTE. Projections are for GNP through 1991 (including projections made in July 1991 for 1992); projections thereafter are for GDP.

That flexibility applies to the particular stance of policy--not its objectives. We vary short-term interest rates to further the goals set for us in the Federal Reserve Act, namely promoting over time "maximum employment, stable prices, and moderate long-term interest rates."

July 18, 1996. In order to realize the benefits of low and declining inflation, Federal Reserve policy has, for some time now, been designed to act preemptively--as I indicated earlier--to look beyond current data readings and base action on its assessment of where the economy is headed. Policy restraint initiated in February 1994 followed from the judgment that unchanged policy would encourage subsequent inflationary imbalances that would ultimately cut short the economic expansion. The three easing steps in the past year were instituted when we anticipated that inflationary imbalances would be less threatening and that lower rates would be compatible with promoting sustainable economic expansion. Similarly, I am confident that the Federal Open Market Committee would move to tighten reserve market conditions should the weight of incoming evidence persuasively suggest an oncoming intensification of inflation pressures that would jeopardize the durability of the economic expansion.

Table 15
CPI Inflation Rate:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1990–96
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1990	4½ to 5	4 to 4½	4½ to 5	6.3
1991	3¾ to 4½	3¾ to 4	3¼ to 3¾	2.9
1992	3 to 4	3 to 3½	3 to 3½	3.1
1993	2¾ to 3¼	2½ to 2¾	3 to 3¼	2.7
1994	3 to 3½	About 3	2¾ to 3	2.7
1995	2¾ to 3½	3 to 3½	3⅛ to 3⅞	2.7
1996	2⅞ to 3¼	2¾ to 3	3 to 3¼	3.1

February 26, 1997. Given the lags with which monetary policy affects the economy, however, we cannot rule out a situation in which a preemptive policy tightening may become appropriate before any sign of actual higher inflation becomes evident. If the FOMC were to implement such an action, it would be judging that the risks to the economic expansion of waiting longer had increased unduly and had begun to outweigh the advantages of waiting for uncertainties to be reduced by the accumulation of more information about economic trends. Indeed, the hallmark of a successful policy to foster sustainable economic growth is that inflation does not rise. I find it ironic that our actions in 1994–95 were criticized by some because inflation did not turn upward. That outcome, of course, was the intent of the tightening, and I am satisfied that our actions then were both necessary and effective and helped to foster the continued economic expansion.

The practice of announcing a change in the FOMC’s policy stance right after the decision proved to be another critical step in communication, as noted earlier. It no doubt signified the FOMC’s desire to be more transparent. To some extent, it also may have reflected responses both to the earlier charges of “excessive secrecy” and to a climate in which stating explicitly that a rise in the funds rate target had occurred was unlikely to foster potentially paralyzing political pressure. Some criticism could well be heard, but without the credible threats of earlier decades of

Table 16
Unemployment Rate:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1990–96
(Percent, fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1990	5½ to 6	5½ to 5¾	5½ to 5¾	5.9
1991	5½ to 6	6½ to 7	6¾ to 7	6.9
1992	6¼ to 6½	6¾ to 7	7¼ to 7½	7.3
1993	6½ to 7	6¾ to 7	6¾	6.5
1994	6½ to 6¾	6½ to 6¾	6 to 6¼	6.1
1995	6 to 6¼	About 5½	5¾ to 6⅛	5.6
1996	5¾ to 6⅛	5½ to 5¾	About 5½	5.3

legislation that would circumscribe the FOMC's makeup or scope for action. The absence of such threats not only was good for the FOMC, of course, but it was good for the country as well.

Refining the Content of the Directive and the Immediate Announcement

Despite the change after Thanksgiving 1989 in the Desk's procedures to focus more single-mindedly in practice on funds rate targeting, the operational paragraph of the directive continued to refer to the Committee's selection of the "degree of pressure on reserve positions" as a reference to the Committee's formal choice of the amount of adjustment plus seasonal borrowing. Indeed, this reference in the directive, and in the forward-looking discussion in the minutes, was not replaced by the numerical funds rate target until August 1997. The minutes first characterized the "intended" numerical level of the federal funds rate over the previous intermeeting period in May 1997. This part of the minutes referred to "expectations" for the point estimate of the federal funds rate associated with the particular degree of pressure on reserve positions initially in September 1995. And the immediate announcement explicitly reported the numerical federal funds rate target first in July 1995.

Thus, official communications with the public only gradually came to transparently describe the Committee's funds rate operating procedures. Perhaps the Committee was reluctant to be forthcoming because rigid federal funds rate targeting had fallen into disrepute as too inflexible

when inflation took off in the 1970s, although the distinction between moving the target level flexibly in response to changing economic conditions versus allowing temporary day-to-day volatility was not always clearly drawn by FOMC members over the years.

This section describes the evolution of these disclosures. The operational paragraph of the directive at the December 18–19, 1989, meeting can be taken as the starting point for many of these reforms.

In the implementation of policy for the immediate future, the Committee seeks to decrease slightly the existing degree of pressure on reserve positions. Taking account of progress toward price stability, the strength of the business expansion, the behavior of the monetary aggregates, and developments in foreign exchange and domestic financial markets, slightly greater reserve restraint or slightly lesser reserve restraint would be acceptable in the intermeeting period. The contemplated reserve conditions are expected to be consistent with growth of M2 and M3 over the period from November through March at annual rates of about 8½ and 5½ percent respectively. The Chairman may call for Committee consultation if it appears to the Manager for Domestic Operations that reserve conditions during the period before the next meeting are likely to be associated with a federal funds rate persistently outside a range of 6 to 10 percent.

Deleting the Range for the Federal Funds Rate November 13, 1990

At its November 1990 meeting, the Committee decided to drop the last sentence, which after the October meeting was, as was typical, still unchanged from late 1989 despite the ¼ point policy easing, to 8 percent, in July 1990. Indeed, the basic meaning of the sentence, which contained a wide range for federal funds rate variation, dated to the operational paragraph agreed on at the October 6, 1979, meeting, when the change to a nonborrowed reserves operating procedure occurred.¹⁷⁹ At that meeting the Committee had widened the band from ½ percentage point to 4 percentage points, though in the subsequent three years it chose a band as wide as 7 percentage points. In December 1980, it had also modified the interpretation of the sentence from a statement of allowable funds rate variation to a mechanism in which persistent trading outside the range would trigger Committee consultation.

After the fall of 1982, when the Committee moved to borrowed reserves as a guide to operations, the sentence was devoid of operational significance because funds rate changes, both intentional and unintentional, were much smaller. The Committee instead relied on informal understandings of what reserve market, financial, or economic conditions would call for consultation, which in fact was reasonably frequent after that.

179. Messrs. Lindsey, Kohn, and Sternlight, "Last Sentence of Operational Paragraph," memorandum to Federal Open Market Committee, November 8, 1990.

Because operational changes even before Thanksgiving 1989 had rendered the sentence an obvious anachronism and because the Committee did not want to adopt a new sentence that could constrain its flexibility to make policy adjustments in the intermeeting period, the Committee decided to drop it altogether, although the background memorandum had provided four other options. The policy record made clear that the deletion had no implications for the ongoing conduct of monetary policy.

Considering More Automaticity in the Funds Rate

August 20, 1991

Although the Committee finally dropped the outdated last sentence on the funds rate band in the operational paragraph in November 1990, it obviously retained some nostalgia for automatic funds rate movements. Those movements had been pronounced from October 1979 to mid-1982, then muted but still present over the rest of the 1980s; they finally disappeared under the subsequent regime of solely discretionary changes in the targeted federal funds rate, which began in late 1989. As Donald Kohn noted in a memorandum to the Committee on August 14, 1991, the FOMC could make the funds rate operating target fuzzier to allow for random variations, for an intended range, or for a return to borrowed reserves targeting. The resulting ambiguity could defuse an “announcement effect” but would risk market misperceptions of FOMC intentions and inadvertent delays of policy implementation. Alternatively, the intended funds rate could be tied to imperfectly predictable reserve or money demand. However, no reserve or monetary aggregate seemed reliably enough connected with the objective variables to warrant such an approach.¹⁸⁰

The Committee discussed these issues at its August 20, 1991, meeting. Although it made no changes in operating procedures, it did support a conference at which research on the subject was reviewed. That conference was convened on July 18–19, 1992, at the Federal Reserve Bank of St. Louis.¹⁸¹

Amending the Ranking of Policy Factors

December 17, 1991

The next major rewording of the directive was the modification to the sentence in the operational paragraph listing the order of the factors that would guide possible intermeeting policy moves. The part of the sentence in the operational paragraph ranking these factors that was adopted at the previous meeting in November had reflected only minor editorial alterations since December 1989:

180. Donald Kohn, “Alternative Operating Procedures,” August 14, 1991, cover memorandum to Federal Open Market Committee for David Lindsey, “Alternative Operating Procedures,” memorandum to Mr. Donald L. Kohn, August 14, 1991, and for a letter from President Broaddus advocating more research into reserve-based operating procedures.

181. Marvin Goodfriend and David H. Small, Special Issue Editors, “Operating Procedures and the Conduct of Monetary Policy: Conference Proceedings,” *Finance and Economics Discussion Series*, March 1993.

Depending upon progress toward price stability, trends in economic activity, the behavior of the monetary aggregates, and developments in foreign exchange and domestic financial markets, . . .

The FOMC in December modified the language to imply more focus on long-term goals and the general factors affecting intermeeting adjustments and less focus in the directive itself on the ranking of the factors:

In the context of the Committee’s long-run objectives for price stability and sustainable economic growth, and giving careful consideration to economic, financial, and monetary developments, . . .

The FOMC had begun to rank the relative importance of the various factors affecting possible intermeeting policy adjustments at its March 26, 1985, meeting.¹⁸² As Governor Robert Heller explained in a speech in April 1988 and then in an article in the *Federal Reserve Bulletin* in July of the same year, the Committee had frequently adjusted the order of the list as their concerns about economic and financial developments varied.¹⁸³ From March 1985 until December 1991, the final date that Governor Heller used, the Committee had made nine changes to the order.

As shown in table 17, which updates Governor Heller’s table, the FOMC had changed the order of the factors only two times since his speech. Indeed, the order seemed frozen in place after August 1988, when the “behavior of the monetary aggregates” had been moved ahead of “developments in foreign exchange and domestic financial markets.” The subsequent years with an unchanged order, starting with “progress toward price stability,” included the recession from the peak in July 1990 to the trough in March 1991 and the following subdued expansion.

Governor Kelley wrote a memorandum to Chairman Greenspan in May 1991, which raised questions about this part of the sentence:

Earlier this spring, I suggested to the FOMC that the rank order currently in place might no longer be factually accurate. The notion received no support. Perhaps all members, other than myself, felt then and may still feel that this presentation continues to be accurate. If so, fine. However, other possible reasons for not considering any change may exist, and if this is the case, a review may be in order.¹⁸⁴

He offered another possible reason during the discussion on the issue at the FOMC’s August 20, 1991, meeting.

182. Matt Luecke, “FOMC Directive Wording: Order of Policy Variables Conditioning Reserve Pressure,” memorandum to Dave Lindsey, December 20, 2002.

183. H. Robert Heller, “Implementing Monetary Policy,” *Federal Reserve Bulletin*, vol. 74, part 2, July 1988, p. 428.

184. Edward W. Kelley, “Operational Paragraph of FOMC Domestic Policy Directive,” memorandum to Chairman Greenspan, May 20, 1991.

Chairman Greenspan. I'd just like to add that it doesn't necessarily follow that holding that list of objectives constant through that period of ups and downs is necessarily a contradiction.

Mr. Kelley. No, absolutely.

Chairman Greenspan. You can create that type of phenomenon. The issue is: Does that occur consciously or has it just become a mantra of some kind for us?

Mr. Kelley. Well, one rationale by which it could have been actively kept that way is for this Committee to have decided that it permanently wants to keep absolutely preeminent under any conditions this focus on price level stability. And if that's what we want to do, then to me there is a better way to express it rather than to continue to imply that there's a rank order and that somehow or other price stability inevitably comes first.¹⁸⁵

In a memorandum to Governor Kelley, however, Donald Kohn suggested another possible reason for the recent constancy of wording.

Members seem reluctant to modify directive language at FOMC meetings. In part, this may be because such suggestions typically are made at the very end of the meeting, after the decisions have already been made about the stance of policy immediately following the meeting and about the "tilt" to the intermeeting language. One concern may be that delicately balanced compromises among members and between members and their consciences may come undone in the process of debating changes in language.¹⁸⁶

When the FOMC discussed this issue at the August meeting, Vice Chairman Corrigan and Chairman Greenspan offered a similar explanation that focused on the practicalities of reaching a decision in the context of a large meeting:

Vice Chairman Corrigan. . . . I fear that if we got into the practice of managing the rank order as part of the normal deliberative process of the Committee, it could be disruptive to the policy process. For example, I think it would be terrible if we ended up with a situation in which the Committee couldn't reach a reasonable conclusion about the thrust of policy because of a great debate as to what should be number two versus what should be number three or number four versus number two. If we were going to move in the direction of what Mike Kelley has characterized as an active management of

185. Transcript of the August 20, 1991, FOMC meeting, p. 11.

186. Donald L. Kohn, "Implementation of Alternative Approaches to Intermeeting Adjustment Wording," memorandum to Governor Kelley, August 14, 1991, p. 1.

Table 17
Order of Variables Conditioning Reserve Pressure
in the Directive Issued at FOMC Meetings, 1985–91

Meetings	First	Second	Third	Fourth	Fifth
Mar. 1985 ¹ to July 1985	Monetary aggregates	Strength of expansion	Inflation	Credit market conditions	Exchange rates
Aug. 1985 to Apr. 1986	Monetary aggregates	Strength of expansion	Exchange rates	Inflation	Credit market conditions
May 1986	Monetary aggregates	Strength of expansion	Financial market conditions	Exchange rates	n.s.
July 1986 to Feb. 1987	Monetary aggregates	Strength of expansion	Exchange rates	Inflation	Credit market conditions
Mar. 1987	Exchange rates	Monetary aggregates	Strength of expansion	Inflation	Credit market conditions
May 1987	Inflation	Exchange rates	Monetary aggregates	Strength of expansion	n.s.
July 1987	Inflation	Monetary aggregates	Strength of expansion	n.s.	n.s.
Aug. 1987 to Sept. 1987	Inflation	Strength of expansion	Exchange rates	Monetary aggregates	n.s.
Nov. 1987 to May 1988	Financial market conditions	Strength of expansion	Inflation	Exchange rates	Monetary aggregates
June 1988	Inflation	Strength of expansion	Exchange rates	Financial market conditions	Monetary aggregates
Aug. 1988 to Nov. 1991	Inflation	Strength of expansion ²	Monetary aggregates	Exchange rates	Financial market conditions

1. The directive issued at the March 1985 meeting was left out of the article by Governor H. Robert Heller, "Implementing Monetary Policy," *Federal Reserve Bulletin*, July 1988. It was, however, included in the May 20, 1991, memo from Governor Edward W. Kelley, Jr., to Chairman Alan Greenspan.

2. Starting on December 18, 1990, "trends in economic activity" was used in place of "the strength in business expansion."

n.s. Not stated.

the rank order, the only way I can see that can be done without running the risk of disrupting the normal consensus-building process within the Committee would be in a context in which there would be a consensus on that point after the policy directive itself had already been voted on. The thought of inviting dissents over what is number three versus number two I think could be very disruptive.

Chairman Greenspan. Well, the problem there is that just procedurally, if you have, let's say, a list of five items and a Committee this large to make a judgment, the time frame required to solve that matrix--

Vice Chairman Corrigan. That's my point.

Chairman Greenspan. --goes way beyond lunch, dinner, and whatever else. . . .¹⁸⁷

After an inconclusive discussion, Governor Kelley was asked to prepare a memorandum giving alternatives based on the members' views.¹⁸⁸ This memorandum, dated September 25, reported an inconclusive result of the poll.¹⁸⁹ For the December meeting, a Bluebook annex presented three revised alternatives for Committee consideration, which included, besides the status quo and the wording chosen, deleting any reference in the operating paragraph to the reasons for possible intermeeting action. The Bluebook discussion of the status quo alternative of keeping the ranking of factors noted the possibility of

. . . moving the reference to trends in economic activity to the head of the list. Because the sentence on intermeeting adjustments is in the operational paragraph, a change in ordering could be viewed as desirable if the Committee had as its near-term priority promoting a pickup in the economy and wished to emphasize that point.¹⁹⁰

The Committee's decision in effect eliminated the Committee's choice at each meeting of wording in the operating paragraph about the order of these factors because the words "economic, financial, and monetary developments" were to remain unchanged. Of course, the understandings reached at meetings regarding their relative importance, the conditions that would warrant consultation, and reasons for the direction of the "tilt" itself would continue to be explained in the policy record of the meeting.

187. Transcript of the August 20, 1991, FOMC meeting, p. 12.

188. Normand Bernard, "Decision at December 1991 meeting to change intermeeting sentence in operational paragraph," memorandum to Secretariat Files, June 22, 1992.

189. Governor Kelley, "Survey of Views on Intermeeting Adjustment Sentence," September 25, 1991.

190. Bluebook Annex, December 13, 1991, p. 18.

Removing a Quantitative Short-Run M2 Range from the Operational Paragraph February 2–3, 1993

The FOMC meeting at which the monetary aggregates were further downgraded was also the one at which the quantitative short-run outlook for money growth in the last sentence of the operational paragraph of the directive was replaced by a qualitative description. The last sentence for the December 1992 meeting had read:

The contemplated reserve conditions are expected to be consistent with M2 growing at a rate of around 1½ percent and M3 about unchanged in the period from November through March.

The reason for initially dropping the quantitative money forecast appears to have been that the arrival of new data caused the projected growth rates for M2 and M3 both to be close to zero! The transcript of the February 2–3, 1993, meeting contains the following:

Chairman Greenspan. [Don Kohn has] suggested alternative language for the operational paragraph. . . . Norm, why don't you read it.

Mr. Bernard. . . . “The contemplated reserve conditions are expected to be consistent with . . .” And substituting for the rest of that sentence would be “little change in M2 and M3 over the period from January to March.”

Mr. Lindsey. How little is the change?

Mr. Kohn. In the Bluebook we had a small plus for M2 and a small minus for M3. . . . Now, I guess it probably would be about zero for M2 and -.8 percent or something like that for M3.

Mr. Lindsey. That's little.

Mr. Kohn. That's at an annual rate!¹⁹¹

Nevertheless, the revision to the wording in February 1993 was permanent in that, although expectations of positive monetary growth would return, explicit numerical growth rate specifications never reappeared in the entire time before the sentence was dropped in December 1998.

Introducing the Immediate Announcement February 4, 1994

The FOMC took a major step in communicating its current policy stance to the public by introducing an immediate announcement of a change in its policy stance in early February 1994,

191. Transcript of the February 2–3, 1993, FOMC meeting, p. 58. Mr. Lindsey here is Governor Lawrence Lindsey.

although the statement still did not refer explicitly to the numerical target for the federal funds rate. Just after the Committee's unanimous vote to tighten by 25 basis points, Chairman Greenspan read the draft announcement to the Committee:

Chairman Alan Greenspan announced today that the Federal Open Market Committee decided to increase slightly the degree of pressure on reserve positions. The action is expected to be associated with a small increase in short-term money market interest rates.

The decision was taken to move toward a less accommodative stance in monetary policy in order to sustain and enhance the economic expansion.

Chairman Greenspan decided to announce this action immediately so as to avoid any misunderstanding of the Committee's purposes, given the fact that this is the first firming of reserve market conditions by the Committee since early 1989.

These words were released to the public before 11:00 a.m. The minutes subsequently supplemented the rationale for the immediate announcement:

Because this would be the first tightening policy action in a long time, it was likely to attract considerable attention. The Committee did not intend this announcement to set any precedents or to imply any commitments regarding the announcement of its decisions in the future. That matter would be reviewed along with other issues relating to the disclosure of Committee information at a later meeting.

As background, it is also worth remembering that the debate with Representative Gonzalez had just occurred amid accusations of excessive secrecy. And as late as December 16, 1993, Governor Mullins in a cover note to a memorandum to the Committee indicated that his subcommittee favored an immediate announcement of policy decisions, though it was split on whether to include the tilt.¹⁹² As discussed earlier, of all the possible options considered, the Committee from the start had been most favorably disposed to an immediate announcement of the policy stance that it had just decided upon.

Using Immediate Announcements March 22, 1994–February 1, 1995

Immediate announcements of six more tightening actions were made over the next twelve months. The first two in March and April involved $\frac{1}{4}$ percentage point upward adjustments to the intended funds rate and were worded virtually identically to the first paragraph of the February announcement. Both May and August announcements indicated that an increase of $\frac{1}{2}$

192. David Mullins, "FOMC Information Release," memorandum to Federal Open Market Committee, December 16, 1993, pp. 1–3.

percentage point in the discount rate would “show through” completely to interest rates in reserve markets. The final two announcements were of increases of $\frac{3}{4}$ percentage point and $\frac{1}{2}$ percentage point in the discount rate on November 15, 1994, and February 1, 1995, respectively, that were to be “reflected fully” in reserve markets. Both announcements were longer and characterized either the current thrust of monetary policy or, obliquely, the possibility and timing of a future action.

Formalizing Rules for Immediate Announcements

February 2, 1995

One day after the last announcement, on February 2, 1995, the Federal Reserve issued a press release with the formal procedures for disclosing policy decisions that the FOMC had adopted at its recently concluded meeting. The FOMC had followed these procedures over the previous year. Concerning the immediate announcement, the Committee decided to

[a]nnounce each change in the stance of monetary policy, including intermeeting changes, the day they are made. When no change is made at a meeting, the Committee will normally just announce when the meeting ended and that there are no further announcements. However, in some infrequent circumstances, the Committee might decide to issue a statement even when no policy action is taken.

As the minutes of the meeting noted, the immediate announcement of a policy change

removes any uncertainty about the Committee’s intentions in regard to reserve conditions and enables all financial market participants and others to receive the information at the same time.

Giving the Funds Rate Target in the Immediate Announcement

July 6, 1995

This step, though heightening clarity, was somewhat of an anti-climax in that the public had already inferred the Committee’s funds rate target immediately from the announcements after early February 1994 and, before that, with a day or two lag from the Desk’s signals in conducting open market operations, especially after Thanksgiving 1989. Indeed, the transcripts reveal that the inclusion of the numerical funds rate target elicited no comment whatsoever on this feature from Board members and Reserve Bank presidents when Chairman Greenspan read the press release for July 6, 1995, to FOMC members. Similarly anti-climactic was the inclusion of an explicit federal funds rate in the minutes—in the retrospective part as an expectation in September of that year and as an intention in May 1997 and in the operational paragraph as an intention in August 1997.

Accelerating Release of the Directive by One Day

February 4–5, 1997

In a modification to the procedure for the minutes, and thus for the directives they contained, the Committee decided to move up the time of their release from the Friday to the Thursday after the next meeting and from 4:30 p.m. to 2:00 p.m. As Chairman Greenspan explained to the

Committee, this action was taken “to give more emphasis to a key policy report. . . .”¹⁹³ At a practical level, moving up the release ensured that it would be made public when more financial markets were open and liquidity was deeper.

Giving the Funds Rate Target in the Operational Paragraph August 19, 1997

In its operational paragraph in July 1997, the FOMC used, as before, the following words:

In the implementation of policy for immediate future, the Committee seeks to maintain the existing degree of pressure on reserve positions. . . . , somewhat greater reserve restraint would or slightly lesser reserve restraint might be acceptable in the intermeeting period. . . .

In August, it replaced those words with the following:

In the implementation of policy for the immediate future, the Committee seeks conditions in reserve markets consistent with maintaining the federal funds rate at an average of around 5-1/2 percent. . . . a somewhat higher federal funds rate would or a slightly lower federal funds rate might be acceptable in the intermeeting period.

As the minutes indicated, the changes to the first sentence served to “conform the directive wording with current public announcement practices regarding the Committee’s policy decisions.” A memorandum from Donald Kohn dated August 14, 1997, and the Bluebook of August 15, 1997, presented some more-complicated alternatives for the second sentence about possible intermeeting adjustments, involving deleting the choices of “somewhat” or “slightly” and “would” or “might,” but the Committee chose a simple adjustment. As the minutes further reported:

The Committee also modified the present sentence relating to the intermeeting bias in the directive to recognize that changes in the stance of policy are now expressed in terms of the federal funds rate. These changes were not intended to alter the substance of the directive or the Committee’s operating procedures.

Amending the Tilt Wording and Deleting the Qualitative Money Sentence December 22, 1998

The minutes released on February 4, 1999, for the December 1998 meeting conveyed the Committee’s decision to replace the “somewhat/slightly,” and “would/might” construction to express the type of tilt in the operational paragraph with an “equally likely/more likely” construction. The Committee members agreed that the new language, according to the minutes

193. Transcript of the February 4–5, 1995, FOMC meeting, p. 16.

of the December 1998 meeting, “would communicate more clearly and succinctly the substance of the Committee’s policy decisions.”

The status quo option for choosing the language of the operational paragraph would have been patterned on the paragraph used at the November 17, 1998, meeting:

In the implementation of policy for the immediate future, the Committee seeks conditions in reserve markets consistent with maintaining/increasing/decreasing the federal funds rate at/to an average of around ___ percent. In the context of the Committee’s long-run objectives for price stability and sustainable economic growth, and giving careful consideration to economic, financial, and monetary developments, a *slightly/somewhat* higher federal funds rate *would/might* or a *slightly/somewhat* lower federal funds rate *would/might* be acceptable in the intermeeting period. The contemplated reserve conditions are expected to be consistent with moderate/some moderation in/some pickup in the growth in M2 and M3 over coming months. [italics mine]

In the event, the Committee decided that henceforth it would select words from the following replacement paragraph:

To promote the Committee’s long-run objectives of price stability and sustainable economic growth, the Committee in the immediate future seeks conditions in reserve markets consistent with maintaining/increasing/decreasing the federal funds rate at/to an average of around ___ percent. In view of the evidence currently available, the Committee believes that prospective developments are [equally likely to warrant an increase or a decrease [(NO TILT)]; [more likely to warrant an increase/a decrease than a decrease/an increase [(TILT)]] in the federal funds rate operating objective during the intermeeting period.

The choices in the tilt sentence between “somewhat” or “slightly” and “would” or “might” had enjoyed an illustrious history at the Federal Reserve, having been introduced into the FOMC’s directive on November 15, 1983. The Committee’s transcript for its September 29, 1998, meeting contains the following comment from Governor Kelley on this matter.

Mr. Kelley. . . . On the rewording of the directive, truth to tell I like the existing language and I would be a little sad to see it go. Everyone who is interested and needs to know understands it perfectly well, and more importantly it constitutes a bit of quaint Americana that we should cherish. (Laughter)¹⁹⁴

194. Transcript of the September 29, 1998, FOMC meeting, p. 15.

However, Board Vice Chairman Alice Rivlin had already delivered the “kiss of death” to the wording at the July 1, 1998, meeting:

Ms. Rivlin. . . . I would amend the wording of this directive. I do not have a proposal right now, but it is mysterious in the extreme. Every time I hear it, I have a little difficulty not laughing. (Laughter) . . .

Chairman Greenspan. . . . If you can figure out a way to get the directive rewritten, everyone around this table, or a majority at least, would agree that would be a great accomplishment. We tried several times to improve the paragraph, but without success. The current wording is awful. We all agree it is awful, but the trouble is we all agree it is awful in different ways. (Laughter)

Ms. Rivlin. Let us try again!

Vice Chairman McDonough. If you succeed, you could be a candidate for one of three Nobel prizes: literature, economics, or peace. (Laughter)¹⁹⁵

In a memorandum prepared for that discussion, the staff had written: “The current [tilt] sentence doesn’t quite mean what it says and doesn’t quite say what it means.”¹⁹⁶

For the FOMC’s November 17, 1998, meeting, a staff memorandum and the Bluebook presented revised alternatives for the wording of the tilt sentence.¹⁹⁷ The Committee engaged at that meeting in a nearly final discussion of the issue.¹⁹⁸ At the December 22 meeting it then amended the wording of the “tilt.”

At the same meeting, the Committee agreed to delete the sentence containing a qualitative description of expected M2 and M3 growth, because, as the minutes indicated,

money growth had not had any special significance for some time in the formulation of monetary policy owing to often unexplained and unexpected changes in velocity. The rewording of the sentence on symmetry and the deletion of the sentence on money were not intended to imply any change in policy or the Committee’s approach to policy or its decisionmaking.

195. Transcript of the July 1, 1998, FOMC meeting, pp. 165, 166.

196. David Lindsey, “Alternatives for FOMC Disclosure Policy,” memorandum to Federal Open Market Committee, May 12, 1998, p. 29. (Donald Kohn actually originated this sentence.)

197. David Lindsey, “Directive Tilt Sentence Language,” memorandum to Federal Open Market Committee, November 5, 1998, and Bluebook, November 13, 1998, pp. 15 and 16.

198. Bonnie Garrett, “Summary of November 17, 1998, FOMC Discussion of Alternative Wordings for the Operational Paragraph of the Directive,” memorandum to FOMC Secretariat Files, March 31, 1999.

Changes like this one, or the modification of the bias sentence to refer to the intended federal funds rate in August 1997, or the elimination of the sentence with a wide funds rate range in November 1990 had no implications for the ongoing conduct of policy, as the minutes or policy records said. They were designed to bring public FOMC statements into conformity with long-standing Committee practice, but they were positive steps in the direction of transparency.

Announcing Major Shifts of View without a Policy Change Infrequently December 22, 1998

The Committee also indicated on February 4, 1999, in the minutes of this December meeting that it had decided to implement its policy stated after the February 1995 meeting of releasing in some infrequently occurring circumstances an immediate announcement even when its policy stance was unchanged.

The possibility of an immediate announcement without a policy action had been under consideration by the Committee for some time that year, having been raised by President Robert Parry at the March 31, 1998, meeting:

Mr. Parry. . . . I have a question. It relates to my recollection that when we talked about how we were going to handle the public announcement of a no-change decision, we discussed the possibility of making a statement to accompany such an announcement. If one thinks that economic developments are moving in a direction where it is likely that a change in policy would occur--say, at the next meeting--and given that you have stressed the importance of laying a foundation for a policy change, the adoption of asymmetry clearly could lay a foundation. But under our current procedures the asymmetry is announced two days after the next meeting, so the public is not put on notice on a timely basis. I wonder if there is some virtue to making a statement in our announcement about the strength of the economy.¹⁹⁹

Later in that meeting, several opinions on the subject were expressed by the various members, and Chairman Greenspan said that a further discussion of these issues at a later meeting would be “worthwhile.” (At the March 1998 meeting, the Committee also switched from a symmetric tilt to one that was asymmetric toward tightening, a decision that was prematurely disclosed to the *Wall Street Journal* and the *Washington Post*.)

Based on the discussion at the March meeting, the staff undertook a study of options for FOMC meetings at which the stance of policy was kept unchanged. Among the options considered were additional announcements of a few sentences and the release of the operational paragraph when the tilt was changed.²⁰⁰ These staff documents offered a background discussion of how the Committee had employed the tilt over the years.

199. Transcript of the March 31, 1998, FOMC meeting, pp. 77, 78.

200. Donald Kohn, “Agenda Item on Alternatives for FOMC Disclosure Policy for the May meeting,” a cover memorandum to Federal Open Market Committee, May 12, 1998, for David Lindsey, “Alternatives for FOMC Disclosure Policy,” memorandum to Federal Open Market Committee, May 12, 1998.

While the regular use of tilts in the directive was initiated in 1983, no intermeeting change in the FOMC's policy stance, apart from adjustments to the discount rate, was implemented until 1985; starting at that time, intermeeting changes in the assumption for borrowing at the discount window--with implications for the federal funds rate--began to be made upon occasion. Intermeeting policy moves soon became more common than actions at meetings, arguably helping to counter the tendency toward excessive inertia that had plagued monetary policy decisionmaking in the 1970s.

Especially before intermeeting moves fell into disuse after April 1994, the tilt in the operating paragraph of the directive was used to provide Committee guidance to the Chairman about its predisposition toward intermeeting policy actions. The Committee never spelled out exactly what the directive language expressing the tilt meant; indeed, the directive needed to be interpreted in light of the discussion at the meeting, which was one reason for delaying its release until the Minutes were published. In general, however, Committee members understood that:

- a. A symmetric policy directive was used to convey the Committee's sentiment that incoming information on the economy over the intermeeting period should be interpreted with no predilection as to the probable direction of appropriate policy response. With risks seen as balanced, a symmetric directive also frequently represented a Committee disinclination to move in either an easing or [a] tightening direction over the intermeeting period. Action was not ruled out, however, in response to significant and unexpected incoming information. Unless the information were very compelling and unambiguous, the Committee expected to be consulted before any intermeeting change.
- b. An asymmetric policy directive, toward either easing or tightening of the Committee's policy stance, was used to convey the Committee's intention that the Chairman should filter the incoming information with a predisposition toward either an easing or a tightening response. In other words, the Chairman would not have required as definitive a set of incoming evidence with an asymmetric tilt as with a neutral tilt to implement an easing or a tightening decision, and prior consultation with the Committee, especially for one small move in the expected direction, was not seen to be as warranted under an asymmetric directive.

Against this procedural background, the Committee believed that the immediate release of the tilt could have undesirable market consequences that could tend to feed back adversely on Committee decisionmaking by

hampering the Committee's willingness to adopt asymmetric directives. Instead, knowing that the directive would not be released until after the next FOMC meeting, the Committee did not need to worry that market participants would learn about a switch from symmetry to asymmetry, say toward tightening, and react by firming market interest rates immediately upon the announcement by building in greater odds of a policy tightening. Without immediate release, the Committee could switch the tilt, say toward tightening, before it had reached the point of deciding that an actual firming of financial conditions was warranted as yet. The Committee might prefer to wait for clearer economic signals before a decision was made to actually change its policy stance, but at the same time want to instruct the Chairman to be especially alert to evidence that would justify a policy tightening.²⁰¹

Donald Kohn led off the July 1, 1998, discussion by framing the issues. As he noted, "The desire for more explanation comes from within the Committee. There is no real outside pressure for more or earlier release of information."²⁰² The Committee's discussion at that meeting was inconclusive.²⁰³ (The Committee at that June–July meeting also switched back to a symmetric tilt, a decision initially revealed in a speech at Berkeley by Chairman Greenspan, after he had consulted with his colleagues at Jackson Hole.)

For the September meeting, the staff attempted to narrow the options.²⁰⁴ The FOMC again reached no conclusion about enhancing immediate announcements or publishing the minutes before the next meeting.²⁰⁵ In hopes of further narrowing the differences of the Committee, the Chairman asked the staff to examine other implications of changes in disclosure practices.

By the December meeting the Committee was ready to reach a compromise on the issue of greater immediate disclosure.²⁰⁶ Chairman Greenspan's introduction of the subject indicated that Committee members had staked out two different positions in their previous discussions:

Chairman Greenspan. . . . The Committee has had two very productive discussions this year on disclosure issues other than the tilt language, at the June–July meeting and the September meeting. However, the Committee's

201. David Lindsey, "Alternatives for FOMC Disclosure Policy," memorandum to Federal Open Market Committee, May 12, 1998, pp. 4–6.

202. Transcript of the June 30–July 1, 1998, FOMC meeting, p. 151.

203. A useful summary and compendium of memoranda and transcripts for this meeting are contained in Bonnie Garrett, "Summary of July 1, 1998, FOMC Discussion of Alternatives for FOMC Disclosure Policy," memorandum to FOMC Secretariat Files, March 26, 1999, and for later meetings that year in subsequent memoranda of hers.

204. Donald Kohn, David Lindsey, and Brian Madigan, "Timing of Tilt and Minutes Disclosure and Wording of the Tilt Sentence," memorandum to Federal Open Market Committee, September 24, 1998.

205. Bonnie Garrett, "Summary of September 29, 1998, FOMC Discussion of Alternatives for FOMC Disclosure Policy," memorandum to FOMC Secretariat Files, March 26, 1999.

206. Bonnie Garrett, "Summary of December 22, 1998, FOMC Discussion of Disclosure Policy Including the Operating Paragraph of the Directive," memorandum to FOMC Secretariat Files, April 1, 1999.

views seem to have evolved mainly into two disparate positions, both of which have presented very cogent arguments in their favor. One group, a small majority of the 18 governors and presidents, supports: (1) releasing the operating paragraph of the directive, which includes the tilt, immediately after every FOMC meeting; (2) releasing a brief announcement immediately after those meetings in which either the policy stance or the tilt is changed; and (3) releasing the minutes of the meeting as soon as feasible after every FOMC meeting, presumably a couple of weeks earlier than now.

Another group, a sizable minority, advocates keeping the status quo in all these respects. That is, the operating paragraph would continue to be released along with the minutes after the next meeting, and immediate announcements would routinely be made only after policy changes.

Finally, two presidents would drop the tilt entirely from the operating paragraph.²⁰⁷

The former group based its position on several perspectives. First, a vote to leave the stance of policy unchanged is as much a decision as one that alters the funds rate, and it also warrants an immediate explanation. Second, a selection as important as that of the tilt, which is voted on by the FOMC at each meeting as a part of the operational paragraph, should be disclosed immediately because, without a compelling case of a threat to the deliberative process, transparency both has value in itself in a democratic society and is the foundation for accountability. Third, markets work better with more information, and so by better revealing its thinking through immediate release of the operational paragraph, more frequent announcements, and earlier publication of the minutes, the Committee would aid market functioning. Fourth, the FOMC could more effectively “prepare the markets” for policy moves by having its intentions more accurately reflected in market prices, and market participants would interpret incoming data more in line with the FOMC’s current thinking. Fifth, immediate disclosure of the operational paragraph would solve the problem that had plagued the Committee for some time of unauthorized disclosure of the tilt—whether through an intentional leak or, more likely, through inadvertence. Sixth, enhanced disclosure could avoid the problem of market participants getting information at different times.

The latter group was represented initially by President Boehne and Governor Kelley, who were veterans of the subcommittee on disclosure. That subcommittee also included President Melzer and Governor Mullins, who was appointed its chairman in December 1992. In July 1994, Governor Blinder replaced Governor Mullins as chairman. On July 1, 1998, President Boehne and Governor Kelley opened the FOMC’s discussion with extended statements. They made a number of points in defending the status quo, some of which proved to be prophetic in 1999 when the FOMC began to release the tilt immediately.

207. Transcript of the December 22, 1998, FOMC meeting, p. 73.

In the various 1998 Committee discussions, the following reasons had been advanced by President Boehne and Governor Kelley and some other FOMC members in favor of the status quo: First, immediate release of the tilt, which describes the conditions under which a contingent decision would be made, would not be advisable because it could induce an immediate market reaction, when the Committee might not be ready to see interest rates change. Second, experience had revealed that the tilt did not provide a reliable guide to imminent policy actions, and so releasing it immediately, when it was still operative, could send a misleading message if conditions were to develop in a manner inconsistent with the implications of the tilt.²⁰⁸ Third, the meaning of the tilt is ambiguous, even among the members of the Committee; this ambiguity might not be consequential when delayed publication made the tilt “old news,” but it would border on “misinformation” if the tilt were released right away. Fourth, for both reasons, immediate release of the tilt would feed back on Committee deliberations by inducing the participants to avoid asymmetry altogether.²⁰⁹ Fifth, as a result, the Committee would lose a consensus-building tool that had helped avoid a hardening of positions, which is especially important for a Committee whose decisions are typically “collective” rather than “individualistic.” Sixth, another result might be that the Committee would become excessively slow in moving its policy instrument, as it was in the 1970s, because the absence of an asymmetry at one meeting would not encourage a change in the stance of policy through the next meeting.

The transcript of the meeting indicates that Chairman Greenspan proposed “a compromise solution, which we can try out on an experimental basis at least for the time being. That compromise . . . I may say was crafted by Don Kohn in a Solomonesque insight.”²¹⁰ The minutes of the meeting reported:

the members decided to implement the previously stated policy of releasing, on an infrequent basis, an announcement immediately after certain FOMC meetings when the stance of monetary policy remained unchanged. Specifically, the Committee would do so on those occasions when it wanted to communicate to the public a major shift in its views about the balance of risks or the likely direction of future policy. Such announcements would not

208. Governor Kelley noted that only 80 out of 152 decisions on the funds rate setting at or between meetings since 1984, or only some 53 percent, were accurately predicted by the direction of the tilt in force at the time. He asserted that “fifty-fifty would be perfectly worthless in this analysis.” (Transcript of the June 31–July 1, 1998, FOMC meeting, p. 158.) The judgment about the information content of the tilt depends on the perspective adopted. One is whether or not the policy stance is altered, that is, two options. Another is whether the policy stance is raised, lowered, or held steady, that is, three options. For an update of the facts cited by Governor Kelley, see tables 18 and 19.

209. As has been discussed, this case against the immediate disclosure of contingencies dates back to Chairman Volcker’s letter to Representative Fauntroy on August 24, 1984, composed soon after the contingent tilt was introduced in the operational paragraph on November 15, 1983. Subsequently, the argument was stated clearly in the letter from Chairman Greenspan to Representative Neal on September 23, 1991, and in the testimony by Chairman Greenspan to the House Banking Committee on October 13, 1993. See *Federal Reserve Bulletin*, December 1993, pp. 1105 and 1106.

210. Transcript of the December 22, 1998, FOMC meeting, p. 74.

be made after every change in the symmetry of the directive but only when it seemed important for the public to be aware of an important shift in the members' views. On the basis of experience with such announcements, the Committee would evaluate later whether further changes in its approach to disclosures would be desirable.

Announcing a Change in the Tilt Immediately

May 18, 1999

The Committee implemented the new announcement procedures after the May 1999 meeting. The announcement read:

While the FOMC did not take action today to alter the stance of monetary policy, the Committee was concerned about the potential for a buildup of inflationary imbalances that could undermine the favorable performance of the economy and therefore adopted a directive that is tilted toward the possibility of a firming in the stance of monetary policy. Trend increases in costs and core prices have generally remained quite subdued. But domestic financial markets have recovered and foreign economic prospects have improved since the easing of monetary policy last fall. Against the background of already-tight domestic labor markets and ongoing strength in demand in excess of productivity gains, the Committee recognizes the need to be alert to developments over coming months that might indicate that financial conditions may no longer be consistent with containing inflation.

The initial reaction in financial markets was limited, but later in the month an overreaction began to set in. On May 27, the Trading Desk's Afternoon Markets Briefing noted:

U.S. Treasury prices fell across the coupon curve after a prominent consultancy issued a report suggesting that the FOMC is likely to raise rates more aggressively than many previously believed.

The reference related to Richard Medley's "G7 Special Report" that came out on that day, entitled "Fed Targets Demand; Ready to Move":

Federal Reserve officials make it clear that their decision to move toward a bias was driven primarily by the relentless series of data showing that real demand in the U.S. economy is outstripping the combination of productivity gains and population growth. . . .

Only slowing economic growth or a clear indication that productivity increases can finance the continued growth will keep the Fed on hold. . . .

[A]nother repeat of the CPI shock would guarantee hikes. . . .

[U]nless the data in June give Fed officials good reason to believe the long-awaited slowing has arrived, the “hard bias” of last Tuesday makes it likely rates will rise and there is nothing ruling out a move as soon as June.

Finally, officials note that “we saw nothing definitive in the numbers going into last week’s meeting or we would have moved to raise rates. Now we’re on heightened alert and the bias is that we are more likely to raise rates at the next meeting than to leave them steady, unless the data show us that slowing of demand is finally happening.” . . .²¹¹

The last paragraph in this quotation was especially damaging because it was misleading. The operating paragraph of the directive adopted by the FOMC on May 18 had said:

In view of the evidence currently available, the Committee believes that prospective developments are more likely to warrant an increase than a decrease in the federal funds rate during the intermeeting period.

Although the interval covered may have become imprecise since July 1993, the meaning of an upward tilt in terms of the probability of a subsequent policy move had always been that a tightening was more likely than an easing instead of more likely than leaving rates steady. The latter construction clearly has a more hawkish cast.

In terms of market reaction, the rocky introduction of the new disclosure policy did not seem to get smoother as the rest of the year unfolded. As the *Wall Street Journal* reported in December:

“This has pretty much been a failed experiment,” said David Jones, chief economist with Aubrey G. Langston & Co., a New York investment bank. “This may have been a step too far in transparency. . . .”²¹²

Jones just before had recounted the reception in financial markets from the point of view of an investor to the succession of immediate tilt announcements:

Much to Fed officials’ dismay . . . financial market participants responded to the immediate announcement of an asymmetrical directive negatively, with bond and stock market selloffs as though the Fed had actually changed its policy stance. Partly to compensate for this market overreaction and partly to fulfill the wishes of a narrow majority, the Fed announced a shift to a symmetrical directive at the following June FOMC meeting while, at the same time, hiking its funds rate target by one-quarter percentage point. Again financial market participants overreacted, this time with contrasting vigorous

211. Richard Medley, “G7 Special Report,” May 27, 1999, p. 1.

212. Jacob M. Schlesinger, “Fed to Revise Approach to Rate ‘Bias,’” *The Wall Street Journal*, December 12, 1999, p. A3.

rallies in both the bond and stock markets on the incorrect assumption that no further Fed tightening moves would be forthcoming.

At the succeeding August FOMC meeting, the Fed hiked both its funds rate target and the discount rate each by an additional one-quarter percentage point while maintaining the same symmetrical directive agreed upon at the June meeting. Moreover, Fed officials again misled market participants into believing this was the last of the Fed tightening moves by indicating in their official statement that the two tightening steps in June and August, combined with a general firming in financial market conditions over recent months[,] “should markedly diminish the risk of rising inflation going forward.” Again market participants grossly overreacted in rallying in both the bond and stock markets, pushing 30-year Treasury bond yields sharply lower to 5.86% and lifting stock prices to a new record level the day after the August FOMC meeting.

At the October FOMC meeting, Fed policymakers decided . . . to maintain an unchanged policy stance but to shift to a tighter policy bias. However, in an extremely misleading official statement, FOMC members emphasized that such an asymmetrical directive did not signify commitment to near-term action. What was not revealed until the minutes of the October meeting were released nearly six weeks later was that, although Fed officials did not intend to act during the intermeeting period, they believed that they would “need to move to a less accommodative policy stance in the relatively near future possibly at the November meeting.” Perhaps even more importantly, the October minutes stated that, “given the Committee’s recently adopted practice of immediately announcing its decision to change the symmetry of the directive, an asymmetrical directive would help convey the message that policy adjustments might not yet be completed for the balance of the year and the Committee remained concerned about potential inflationary developments in coming months.” The main implication is that the shift to an asymmetrical directive necessarily increases the odds of Fed action at the next one or possibly two policy meetings.²¹³

At its August meeting, the Committee formed a subcommittee to review its disclosure policies. Chairman Greenspan indicated at the meeting that “most of us are at least slightly uncomfortable with how the new announcement policy has been working out in practice.”²¹⁴ He asked Board Vice Chairman Roger Ferguson to head up a subcommittee to analyze the issues and report back to the Committee with alternative choices. Governor Ferguson formed a working group by adding Governors Gramlich, Kelley, and Meyer and Presidents Moscow, Parry, and Poole.

213. David M. Jones, “Monthly Market Commentary,” memorandum to all customers, November 29, 1999, p. 3. Also see Jacob M. Schlesinger, “Fed to Revise Approach to Rate ‘Bias’: Yes, But What Does It Mean?” *The Wall Street Journal*, December 12, 1999, p. A3.

214. Transcript of the August 24, 1999, FOMC meeting, p. 103

A background memorandum sent to the working group covered some of the same ground that David Jones would later, as quoted above, but instead from a policymaker's perspective. It identified four developments stemming from the immediate disclosure of the tilt that had soured Committee attitudes:

1. The immediate announcement of the switch to an asymmetric tilt after the May FOMC meeting initially received a muted reception in financial markets, but subsequently seemed to engender an overly strong reaction in those markets to data releases and statements by Federal Reserve officials. This experience was interpreted by some FOMC members and market participants as suggesting that increased market skittishness is an inherent consequence of the immediate announcement of an asymmetric tilt. Such an interpretation fostered a recognition on the part of the Committee at subsequent meetings that it needed to exercise particular caution in adopting asymmetries.
2. The announcement of the switch to a symmetric tilt after the late June FOMC meeting induced an immediate rally in financial markets as market participants reduced the expected extent of the Federal Reserve tightening. Later on, however, market participants focused more attention on the last sentence of the announcement, and, based on the Chairman's subsequent Humphrey-Hawkins testimony, reassessed the Committee's position, concluding that the neutral tilt was in fact at least somewhat biased toward tightening. Despite its sense of unbiased risks to the outlook, the Committee came to be seen as having chosen a formal symmetry in part to forestall the potential for renewed market skittishness. The markets' perception was reinforced by the 1/4 point firming of the intended funds rate at the August FOMC meeting, combined with an announcement conveying an assessment of more balanced risks going forward. This experience has raised questions about the substantive content of symmetric tilts and about the clarity of the immediate announcements in communicating intentions to the public.
3. The disclosure policy that the Committee agreed to at the December 1998 FOMC meeting was to announce immediately only significant shifts in the Committee's tilt that reflected major changes in its thinking about future policy action and that would risk misleading market participants if not revealed right away. Some market participants inferred from this stated disclosure policy that the shifts in the tilt announced after the May and June FOMC meetings must have been major changes in Committee thinking, which may have contributed to the extent of market reaction. Also, the announcement after the August meeting referred to the symmetric tilt, even though it was not altered from the formal symmetric tilt chosen at the June FOMC. (To be sure, some announcement was necessitated by the change in policy, and the wording of the announcement in August indicated more balance than in late June.) The question arises as to whether a change in formal tilt, let alone whether it is significant or not, should remain the

triggering device for an immediate announcement under the new disclosure policy when the intended funds rate is unchanged, or whether instead an immediate announcement should follow every FOMC meeting.

4. Finally, the disparate understandings of the exact meaning of the tilt sentence by individual FOMC members, although having been the case for some time, recently have surfaced in public as a result of the increased attention now that it is released immediately. The heightened tension between the literal words that refer to potential adjustment of the funds rate operating objective “during the intermeeting period,” on the one hand, and the sense of risks to the outlook and the Committee’s predisposition toward policy action over a longer horizon that also has crept into the meaning of the tilt sentence, on the other hand, is troublesome to some FOMC members. They believe that the Committee should reach an agreement on the meaning of the tilt sentence and reflect this agreement in its wording. Until such an agreement is reached, a symmetric tilt seems less likely than an asymmetric tilt to raise sensitive issues of interpretation.²¹⁵

From the sentence’s inception in 1983 until July 1993, the tilt sentence had referred only to the intermeeting period. In July 1993, it began to incorporate a longer-run focus as well, covering the period at least through the next meeting.

The working group made enough progress before the November 16, 1999, FOMC meeting for the full Committee to have a preliminary, general discussion of its tentative findings.²¹⁶ The working group had reached agreement on nine reforms but had disagreed on whether the statement about likely future developments should focus on the risks to the outlook or on the FOMC’s predisposition about coming decisions on the federal funds rate. A clear majority of the FOMC in a straw poll favored the former approach because it would not directly signal the Committee’s inclination regarding future policy. In the words of Board members and Reserve Bank presidents, the Committee’s “finger would be a little further removed from the trigger.” The Committee also reached a consensus on the nine points, which are presented immediately below.

Agreeing on the Balance of Risks and Shortening the Directive December 21, 1999

After some further work, the working group issued a final report before the December 21, 1999, FOMC meeting.²¹⁷ The memorandum first listed the nine points of previous FOMC consensus:

215. David Lindsey, “Issues Regarding the Directive and Disclosure Policy,” September 17, 1999, memorandum to Governor Ferguson, pp. 2–4, with a cover memorandum from Roger Ferguson, “October 4 Meeting of the Working Group on the Directive and Disclosure Policy,” September 17, 1999.

216. Roger Ferguson, “Results of the Working Group on the Directive and Disclosure Policy,” memorandum to Federal Open Market Committee, November 10, 1999.

217. Roger Ferguson, “Further Committee Discussion of Disclosure Issues,” memorandum to Federal Open Market Committee, December 17, 1999, pp. 2–4.

1. An immediate announcement, even if rather perfunctory, should convey the Committee's basic thinking after every FOMC meeting, including some expression of the balance of risks. . . .
2. The FOMC's vote at every meeting should encompass both the intended federal funds rate and its assessment of the balance of risks. . . .
3. The operating paragraph of the directive should not contain any sentence referring to the Committee consensus about the balance of risks. . . .
4. After the Committee's vote, a draft copy of the immediate announcement should be passed out to each Governor and President, and an opportunity to offer substantive reactions would be provided. . . .
5. Drafts of possible announcements covering the realistic alternatives facing the FOMC should not be passed out on the day before the Committee meetings. . . .
6. The directive should be shortened by eliminating all backward-looking material describing recent developments. . . .
7. The shortened directive should continue to be released on the Thursday after the next FOMC meeting and not earlier. . . .
8. The minutes should continue to be released on the Thursday after the next FOMC meeting and not earlier. . . .
9. The Authorization for Domestic Open Market Operations, which is approved by the Committee at its February meeting, instead of the operating paragraph should be used to express the Chairman's latitude to make intermeeting policy moves. . . .

Then, the memorandum briefly contrasted the majority and minority positions on the working group (p.4):

All members of the Working Group share the objective of reducing the close connection between the choice of the bias and the perceived probability of near-term policy action.

The majority of the Working Group, however, continues to believe that the current tight connection between the announced bias and the market expectations of near-term policy action can most certainly be loosened by choosing entirely different words that make no explicit reference to future funds rate movements or even the Committee's predilection. They recognize that the assessment of the balance of risks has implications for future rate

movements, but they feel that the balance of risks more accurately represents what the Committee in fact anticipates about the future. They also believe that, because each Committee decision is made afresh on the basis of an evaluation of all the information available at the time, a reliable indication of the likelihood of future policy action is not possible.

A minority of members of the Working Group thinks that this purpose could be served by using language that retains a focus on the likelihood of federal funds rate movements. . . .²¹⁸

Before the meeting, President Poole sent to the FOMC a defense of his views.²¹⁹ At the meeting he continued to press them. He argued, among other things, that the balance of risks between the movements toward both the ultimate goals of price stability and maximum real activity implicitly rested on a dubious Phillips curve analytic framework. He thought the statement would simply be viewed as a “code” for the old tilt. He also did not see why preemptive policy could not avoid either rising inflation or economic weakness. Despite some support for the minority view from Governor Meyer and Presidents Parry and Broaddus, the majority view, which was briefly summarized by Governor Ferguson, prevailed in the end.

In light of the Committee’s final decision to replace the tilt, tables 18 and 19 present a post-mortem in the form of a statistical retrospective on its use by the FOMC.²²⁰

218. Roger Ferguson, “Further Committee Discussion of Disclosure Issues,” memorandum to Federal Open Market Committee, December 17, 1999, p. 4.

219. William Poole, “Minority opinion on balance-of-risks language,” memorandum to the FOMC, December 17, 1999.

220. Tables 18 and 19 are updates by Matt Luecke of the tables that originally were prepared by Bonnie Garrett and that appeared in David Lindsey, “Alternatives for FOMC Disclosure Policy,” memorandum to Federal Open Market Committee, September 12, 1998, table 1, p. 12, and table 2, p. 14.

Table 18
Type and Number of Monetary Policy Actions
and of Preceding Tilts to the Directive, 1985–99

Monetary policy action		Tilt to the directive at the previous scheduled FOMC meeting	
Timing and type	Number	Type	Number
<i>At a scheduled FOMC meeting</i>			
Tightening	15	Toward tightening	9
		Neutral	5
		Toward ease	1
No action	92	Toward tightening	28
		Neutral	44
		Toward ease	20
Easing	13	Toward tightening	0
		Neutral	6
		Toward ease	7
<i>Between scheduled FOMC meetings</i>			
Tightening	17	Toward tightening	12
		Neutral	4
		Toward ease	1
Easing	29	Toward tightening	0
		Neutral	12
		Toward ease	17

Table 19
Type and Number of Tilts to the Directive and of Subsequent
Monetary Policy Actions, 1985-99

Tilt to the directive		Subsequent monetary policy action	
Type	Number	Type and timing	Number
Toward tightening	37	Tightening	
		Before next meeting ¹	12
		At next meeting ²	9
		No action	22
		Easing	
		Before next meeting	0
At next meeting	0		
Neutral	56	Tightening	
		Before next meeting	4
		At next meeting ³	4
		No action	33
		Easing	
		Before next meeting ⁴	12
At next meeting ⁵	6		
Toward ease	27	Tightening	
		Before next meeting ⁶	1
		At next meeting ⁷	1
		No action	9
		Easing	
		Before next meeting ⁸	17
At next meeting ⁹	7		

NOTE. Meetings refer to scheduled meetings. Number of actions exceeds number of tilts because of multiple actions during some intermeeting periods.

1. Policy was tightened twice in each of three intermeeting periods and once in the other six.

2. Two meetings were each preceded by an intermeeting tightening, and one meeting was preceded by two intermeeting tightenings.

3. One meeting was preceded by an intermeeting tightening.

4. Policy was eased twice in each of two intermeeting periods and once in the other eight.

5. Two meetings were each preceded by an intermeeting easing.

6. The tightening was made on January 15, 1987.

7. The meeting was on February 13, 1985.

8. Policy was eased twice in each of two intermeeting periods and once in the other thirteen.

9. Five meetings were each preceded by an intermeeting easing.

V. 2000 TO 2002: THE CURRENT ERA

Implementing Reforms to the Immediate Announcement	185
Making an immediate announcement after each meeting, January 19, 2000	185
Announcing the balance of risks, January 19, 2000	186
Announcing the FOMC vote immediately, March 19, 2002	192
Reassessing and Retaining Disclosure Methods	194
Continuing the rules and understandings for the blackout period and speeches, March 19, 2002	194
Continuing the schedule for the minutes, March 19, 2002	194
Complying with Legislative Goals and Changing Reporting Requirements	195
Replacing the expired reporting requirements of the Humphrey–Hawkins Act, December 27, 2000	195
Implementing monetary policy, 1997–2002	196
Communicating monetary policy, 1997–2002	197

V. 2000 TO 2002: THE CURRENT ERA

The current era has been marked by the implementation of the FOMC's decisions made in December 1999, its subsequent decision to immediately disclose each vote, and the expiration of the reporting requirements of the Humphrey–Hawkins Act of 1978. After the chapter covers these matters, it turns briefly to the implementation and communication of monetary policy since 1996, the year the previous discussion stopped. The uncertainties surrounding the surge in productivity growth and a rapid succession of crises seem to have made the Committee a little less preemptive.

Implementing Reforms to the Immediate Announcement

In the last three years, the FOMC has introduced the immediate announcement after each meeting of policy decisions, the Committee's assessment of the balance of risks, and the FOMC vote.

Making an Immediate Announcement after Each Meeting

January 19, 2000

The current era began with a press release on January 19, 2000, that described the modifications to FOMC disclosure procedures that were approved at the December 21, 1999, meeting. The first of these modifications, which were designed to enhance communications with the public, was the Committee's decision to issue a brief public statement after every FOMC meeting. The press release noted, "The previously stated procedure was to release a statement only in the event of a policy action or a major shift in the Committee's view of prospective developments."

The FOMC's immediate announcement has contained a summary rationale for its policy decision. It also has attempted to encapsulate the Committee's view of future developments. On two occasions, the announcement has directly hinted at the likelihood of an intermeeting move by saying that the Committee intends to "closely monitor" incoming data. Also, as the next section will discuss at length, the immediate announcement has conveyed the FOMC's assessment of the balance of risks. The statement has continued to garner considerable attention from the media and the markets, with the language still closely watched with regard both to the current decision and to clues about future policy settings. The exact words of the announcement have been parsed in exacting detail by market analysts, with special attention paid to any changes in wording since the last statement.

The statement has been kept brief, partly to improve the predictability of the market reaction: It would be more difficult to predict which parts of a much longer statement would attract media and market attention. In addition, the brevity of the statement has kept the FOMC meetings from becoming bogged down in too much detailed rewriting. In terms of procedure, a draft announcement has been distributed to the Committee members for review and comment just after their policy vote. Substantive comments have been rare. The announcement has continued to be issued around 2:15 p.m. on the day of the Committee's policy decision.

The Committee appears to have resolved most issues about the statement as they arose. Among the issues addressed during the past three years has been the length of the statement and, as

discussed below, the use of the balance-of-risks sentence, the inclusion of the vote, and the potential desirability of supplementing the announcement in the intermeeting period by releasing the minutes of the meeting more promptly.

Announcing the Balance of Risks

January 19, 2000

The FOMC's press release on January 19, 2000, also indicated that the policy inclination or "bias" or "tilt" was being replaced by an assessment of the "balance of risks." Effective with its February 2000 meeting, the FOMC began to announce immediately its consensus about the balance of risks to the attainment of its long-run goals of price stability and sustainable economic growth. The following paragraph, with the selection of one set of bracketed words, was to be included in the vote at each meeting and incorporated into the immediate announcement:

Against the background of its long-run goals of price stability and sustainable economic growth and of the information currently available, the Committee believes that the risks are [balanced with respect to prospects for both goals] [weighted mainly toward conditions that may generate heightened inflation pressures] [weighted mainly toward conditions that may generate economic weakness] in the foreseeable future.

As the press release made clear, the phrase "heightened inflation pressures" was meant to convey the Committee's view that the risk was in the direction of rising inflation whereas the phrase "economic weakness" was meant to convey the view that the risk was in the direction of prospective real economic growth below the estimated growth rate of its potential.

Using the balance of risks in practice. Four issues were settled in practice by using the balance-of-risks assessment. These issues, of course, are subject to Committee reassessment at any time, but they have come to represent "givens" for the selection of the balance of risks. These settled issues are:

1. A focus in the balance-of-risks assessment on the relative risks of changes in both the inflation rate and the output gap, that is, actual real growth relative to growth of potential output, rather than the relative risks of levels of the inflation rate and the output gap differing from their long-run objectives.
2. The reference of the balance-of-risks sentence to relative risks in the outlook for a higher inflation rate versus real growth below potential growth rather than to a possible change in the targeted funds rate, which instead may have been hinted at by the entire announcement.
3. The implication of this last point that the risk assessment is based on the existing federal funds rate target rather than an "appropriate" trajectory for the stance of policy going forward.

4. The meaning of “the foreseeable future” to which the balance of risks applies. The period was intended to extend beyond the next meeting and to be an elastic concept that depends on economic circumstances. Even so, its precise meaning, even at a particular time, was left somewhat uncertain until the November 2002 meeting. The announcement and minutes of that meeting made clear that the horizon was far enough away for a sufficiently large change in the current policy stance to have a material effect on the relevant risks.²²¹

Experience, however, did not settle all outstanding issues with regard to the balance-of-risks statement. In particular, two other issues have not been addressed by the Committee:

1. The role of forecast expectations or means, most likely forecast outcomes or modes, forecast asymmetries or skews, and forecast ranges. One interpretation might be that the balance-of-risks assessment reflects the weighing of the members’ forecast means for changes in the inflation rate or for output growth relative to that of potential. Another interpretation might be that the assessment instead reflects the weighting of members’ forecast modes for these magnitudes. Still another interpretation might be that the members adjust their forecasts for the perceived skews. A final possible interpretation is that the assessment reflects the distribution or range of all possible outcomes rather than a single center of gravity. Of course, the exact interpretation for each member is freely arrived at by that member.
2. The relative weights to be placed on the risk of an increase in inflation versus the risk of real growth below that of potential. The original Taylor rule would give 3 to 1 weights to the prospective inflation versus real output variables, though a more recent variant advanced by Taylor would produce 3 to 2 weights. The actual weights used of course are at the discretion of each member.²²²

How markets interpreted its settings. Since the balance-of-risks sentence was initiated, market participants presumably have based their interpretation of it not only on the original description in the press release but also on the FOMC’s use of it. Table 20 presents the balance-of-risks settings chosen by the FOMC after the sentence’s inception together with the Committee’s policy choice. Chart 5 shows a time series since January 2000 of the FOMC’s choice of the actual level of the federal funds target (the bold solid line) with the market’s expectation of the federal funds target to be chosen at the next FOMC meeting based on the relevant federal funds

221. The announcement prefaced the sentence indicating balanced risks by the phrase “With this action, . . .” The minutes reported as follows:

All the members indicated that, in light of the contemplated 50 basis point easing action, they could support a shift in the Committee’s assessment of the risks to the economy from tilted toward economic weakness to balanced for the foreseeable future, although some voiced reservations about the need for such a shift. The economy probably would continue to underperform in the period immediately ahead, but in the absence of unpredictable adverse shocks this sluggish performance was more likely to be balanced by subsequent economic strength in light of the policy action. . . .

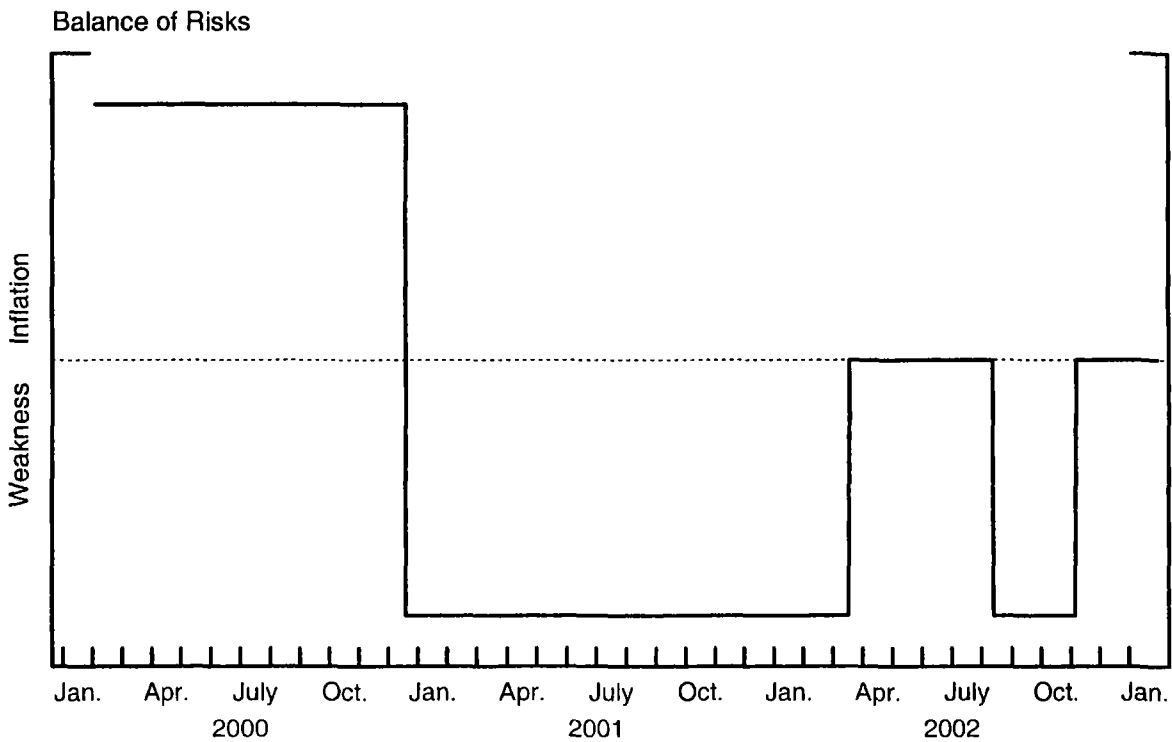
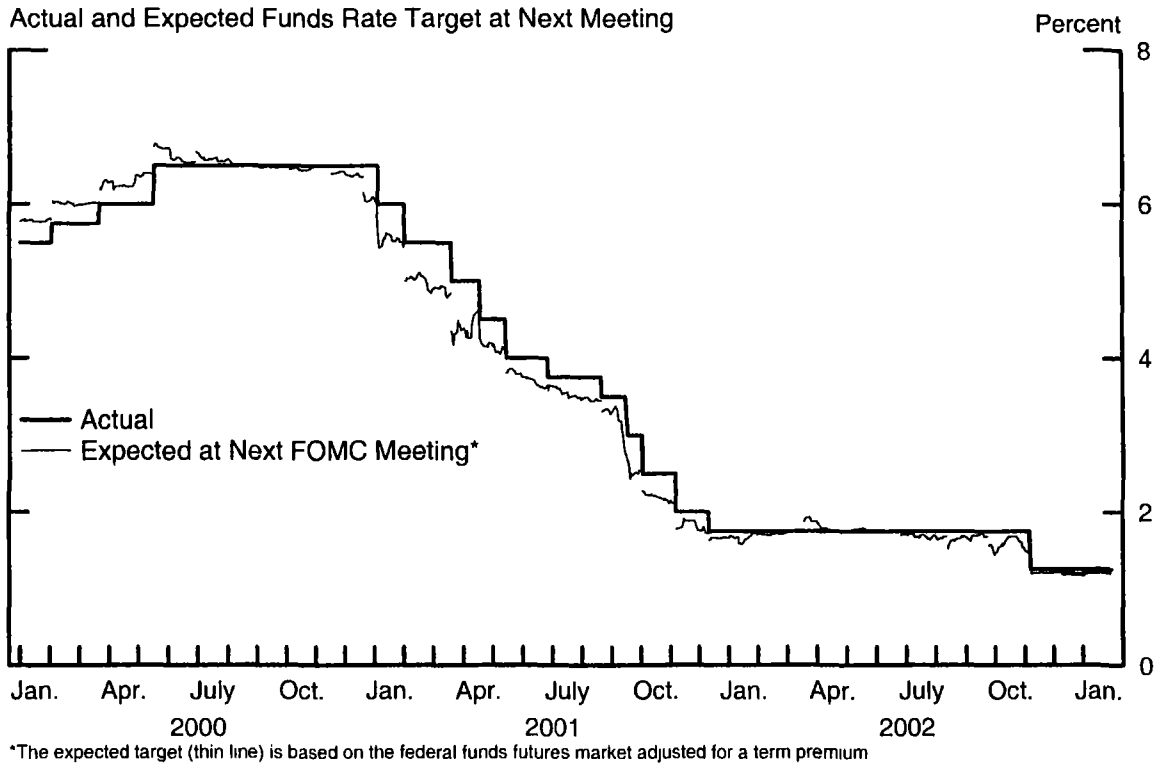
222. These two sets of issues are analyzed in considerably more detail in David Lindsey, “A Rationale for the Balance-of-Risks Statement,” memorandum to Vice Chairman Ferguson, May 21, 2002.

Table 20
FOMC Announcements of the Intended Federal Funds Rate
and the Associated Balance-of-Risks Statements,
February 2000–January 2003

Date	Level (percent)	Change (percentage points)	Balance of risks
2000			
February 2	5.75	.25	Inflation
March 21	6.00	.25	Inflation
May 16	6.50	.50	Inflation
June 28	6.50	.00	Inflation
August 22	6.50	.00	Inflation
October 3	6.50	.00	Inflation
November 15	6.50	.00	Inflation
December 19	6.50	.00	Weakness
2001			
January 3 ¹	6.00	-.50	Weakness
January 31	5.50	-.50	Weakness
March 20	5.00	-.50	Weakness
April 18 ¹	4.50	-.50	Weakness
May 15	4.00	-.50	Weakness
June 27	3.75	-.25	Weakness
August 21	3.50	-.25	Weakness
September 17 ¹	3.00	-.50	Weakness
October 2	2.50	-.50	Weakness
November 6	2.00	-.50	Weakness
December 11	1.75	-.25	Weakness
2002			
January 30	1.75	.00	Weakness
March 19	1.75	.00	Balanced
May 7	1.75	.00	Balanced
June 26	1.75	.00	Balanced
August 13	1.75	.00	Weakness
September 24	1.75	.00	Weakness
November 6	1.25	-.50	Balanced
December 10	1.25	.00	Balanced
2003			
January 29	1.25	.00	Balanced

1. Intermeeting action.

Chart 5
Actual and Expected Funds Rate Target at Next Meeting and the Balance of Risks



futures contract (the thin line). An assumed term premium of 1 basis point per month has been subtracted in calculating the expected funds rate target.

Market participants may have been somewhat skeptical at first that the FOMC had made a clean break with the past and would not use the balance of risks as a code for its intended future policy course. However, as time passed, this skeptical interpretation tended to recede, especially once the Committee began to stay its hand, rather than continuing to firm policy from the May meeting through the rest of 2000, while maintaining upside risks through the November meeting. In December 2000, the Committee kept policy unchanged but shifted the risks from the upside to the downside.

During 2001, when the FOMC continued to assess the risks as weighted to the downside, market participants generally anticipated a further easing at the next meeting. After the January 2002 meeting, however, when the FOMC again chose downside risks, market participants did not translate this sentence into a prediction of high odds of another policy easing at the March meeting. Indeed, the Committee adopted balanced risks in March, but it returned to downside risks in August. Even so, the market did not anticipate high odds of further easing until late September and again in early November.

By the time of the November 2001 meeting, participants in federal funds futures markets had come to expect a 25-basis-point reduction in the funds rate target. In the event, the Committee reduced the funds rate by 50 basis points and moved back to balanced risks. The return to balanced risks also surprised market participants, as both of the surveys taken before the meeting by Money Market Services and Stone and McCarthy showed unanimous expectations that the Committee would select downside risks even if the minority view of a 50-basis-point easing proved to be correct. “Many financial analysts were puzzled by [the assessment of balance] because the risks of continued weak growth appeared to the analysts to be much greater than the risk that inflation would worsen.”²²³ Some market participants interpreted the unusual combination of the large easing and the switch to balanced risks as an intentional signal that no further policy action was likely at the December meeting, though right after the November meeting some odds of further easing were built into futures quotes for February 2003.

The release of the minutes on December 12, 2001, of the November FOMC meeting confirmed that the FOMC had been mindful of the effect of the balance-of-risks assessment on market expectations for future policy actions:

A 50 basis point move would tend to have a more pronounced effect than usual in financial markets, at least initially, because it would be largely unexpected and would come after an extended hiatus in implementing policy changes. In the view of many members, retaining the assessment that the risks were tilted toward weakness would raise the odds of an overreaction in

223. John M. Berry, “Fed Aimed to Avert a Long Slump,” *The Washington Post*, Friday, December 13, 2002, p. E3.

financial markets, which might well misread the Committee's decision as a sign that the members were more concerned about the potential for greater economic weakness than was in fact the case and that therefore the Committee currently saw a likely need for further easing later. . . . While the possible market response was not a primary factor determining the desirability of a policy action, the Committee needed to take it into account in gauging the potential effects of particular policy moves.

FOMC experience in using it. The FOMC's experience with the balance-of-risks sentence may be seen in some quarters as having generated some negatives. The meaning of the balance-of-risks sentence is somewhat vague, giving rise to differences of opinion even among FOMC members and possibly leading to difficulties among outsiders in understanding its subtleties. Indeed, as a hypothetical example of a somewhat confusing application of the balance-of-risk statement, consider what could occur when the economy is well into the recovery stage of the cycle. Real growth tends to exceed that of potential but, because the level of output still falls short of the level of its potential, the inflation rate tends to continue declining. The literal words of the sentence, in which the Committee balances "heightened inflation pressure" and "economic weakness," are not directly applicable in this case. The reason is that the balance-of-risks sentence avoids literally referring to the risks of falling, though still positive, inflation and real growth above that of potential as "bad" outcomes that could warrant easing or tightening, respectively, since a central bank would have difficulty in publicly advancing such rationales for policy moves. Even so, the risks of these outcomes need to be incorporated into the balancing decision along with all the other possibilities.

The fact that the sentence refers to the outlook for only the two general elements of the Committee's long-run goals rather than to more-complex features in the evolving outlook for the economy may be seen as a limitation of the current construction. The statement has only three settings and thus cannot embody the full range of shadings characteristic of Committee discussions. This simplicity accordingly could be viewed as restricting its information content. Partly as a result of its simplicity, the sentence upon occasion has been kept unchanged for a considerable time in the face of variations in economic conditions, unlike other readings on Committee sentiment that contain a more flexible characterization of Committee views. This inflexibility may even slow policy moves if the FOMC judges that a change in the balance of risks in the upward or downward direction would normally be called for at least one meeting before a policy action is made. However, evidence that it has done so is not apparent.

On the other side, certain positives do seem evident. Much like their possibly differing rationales for the policy action itself, the FOMC members may have had alternative approaches to the unresolved issues regarding the balance of risks, but they still agreed on a particular statement of these risks. Though interpretations of the meaning of the balance-of-risks statement may have differed among members of the Committee, the statement has not prompted any formal dissents during its history of more than three years. Indeed, the statement may have been useful at times in forging a consensus among members on the overall stance of policy. It appears to be reasonably well understood by market participants. It has tied in well with the Committee's dual long-run objectives. Unlike the previous "tilt," which attempted to express the

FOMC's predilection about future actions and apparently could be "contradicted" if future actions were to differ from the implications of that description, the announced weighing of the risks chosen by the FOMC cannot be shown to be misleading because it obviously expresses the Committee's existing assessment of the outlook.

The observation that the balance of risks has often been repeated from meeting to meeting actually could be a desirable feature of the statement. An argument can be made that the Committee should not feel compelled to alter its policy stance at each meeting by just enough to equalize upside and downside risks to the outlook. Such a strategy would excessively curtail the appropriate succession of policy moves in the same direction that is legitimately induced by gradualism, that is, interest rate smoothing.²²⁴ Strings of small tightenings or easings in the funds rate can be defended by considerations of uncertainty about the policy multiplier (Brainard uncertainty), forward-looking expectations in financial markets, financial market fragility, and mis-estimates of economic data, including potential output. Successions of identical risk assessments are consistent with such policy considerations.

Possible problems with the balance of risks. The balance of risks is intended to refer to the risks in the outlook concerning changes in inflation pressures and in real output relative to its potential rather than to the chances for adjustment of the intended federal funds rate. A question arises, however, as to whether a difference between the direction of the risks and the direction of policy moves for a protracted period would be misleading. For example, suppose the Committee initially needed to ensure that the real funds rate was well below its sustainable equilibrium in level terms to balance the risks of the performance of inflation and output relative to potential in terms of changes, as in the balance-of-risks statement chosen at FOMC meetings in mid- and late-2002 and early-2003. Then, at some future point, the FOMC might need to raise its nominal funds rate target over time to move toward restoring the real funds rate to its equilibrium level and, in the process of doing so, could just keep the risks related to the changes in the statement in balance. Even if the rest of the announcement were altered as needed to communicate the FOMC's predisposition for changing its policy stance, this example raises questions about whether the balance-of-risks sentence in the announcement would be helpful.

Announcing the FOMC Vote Immediately March 19, 2002

After the March 2002 meeting, the Committee for the first time immediately announced the vote, which was unanimous, along with the unchanged policy stance. The minutes of the meeting indicated that, besides identifying the voters, the announcement would indicate the policy preferences of dissenters, if any. The minutes went on to suggest that "such information could prove useful to market participants, who on occasion had employed indirect and frequently misleading information to gauge the Committee's vote before it was released as part of the minutes after the next meeting."

224. The FOMC discussed this issue at length at its January 28–29, 2003, meeting.

Governor Roger Ferguson had raised the same point in his memorandum to the FOMC for its January 2002 meeting:

The absence of any disclosure of the vote immediately following the meeting has led both market participants and journalists, on occasion, to use the number of Reserve Banks requesting discount rate changes as a proxy for the existence of dissents from the federal funds decision. This proxy has rarely been accurate and has sometimes been quite misleading.²²⁵

The FOMC decision to release the vote immediately represented a consensus among the Committee's working group on disclosure.²²⁶ The Committee recognized that, because full statements by dissenters would not be released until the minutes were disclosed after the next FOMC meeting, dissenters would be unable to provide the rationale for their dissents until after that time.²²⁷

The Committee's initiative resulted not only from the inaccurate proxy mentioned by Governor Ferguson but also from general considerations related to the desirability of prompt disclosure of all aspects of the policy decision in the absence of a compelling argument that a delay to maintain confidentiality for a time was critical. The Committee considered the possibility that immediate disclosure of the vote could somehow detract from FOMC decisions as reflecting a "consensus" of the group rather than an "individualistic" outcome of the votes of its members. The Committee, however, did not accord much credence to this concern. In addition, the Committee recognized that, once its decision had been announced, the vote could not be withheld in the event of a request under the Freedom of Information Act. Since early 1994, therefore, the vote would have been subject to disclosure well before the release of the minutes if anyone had asked for it.²²⁸

225. Roger W. Ferguson, "Further Transparency Discussion," memorandum to members of the Federal Open Market Committee, January 22, 2002, p. 1.

226. The composition at that time was Vice Chairman Ferguson, Chairman; Governor Gramlich; and Presidents Moskow, Parry, and Poole.

227. A summary of the main arguments appears in Roger Ferguson, "Disclosure of FOMC Votes," memorandum to Federal Open Market Committee, March 11, 2002.

228. No request under FOIA for accelerated disclosure of the vote had been filed, even though release of the February 3-4, 1994, transcript had placed the point in the public domain (p. 34):

Chairman Greenspan. Were we to come out and make a statement [that] the Committee made a decision, are we obligated to stipulate what the vote is?

Mr Mattingly. If somebody asked, you have to tell them. I mean it would be subject to disclosure.

Mr. Syron. Why?

Mr Mattingly. The Freedom of Information Act. Why is it confidential? How do you make it confidential? What's confidential about the vote?

Reassessing and Retaining Disclosure Methods

The FOMC's deliberations about other disclosure issues in these three years were limited to reassessing the rules and understandings regarding the blackout period and the schedule for the release of the minutes. Those discussions prompted no changes in the FOMC's practices.

Continuing the Rules and Understandings for the Blackout Period and Speeches

March 19, 2002

The working group also recommended and the full Committee chose to retain the existing Committee rules and understandings for the disclosure of certain information. Specifically, they chose to keep the blackout period that proscribed any public discussion of the economy or monetary policy from a week before the meeting through Friday in the week of the meeting. Even after that, members continued to be expected to make only general statements on monetary policy and the economy in speeches and interviews and to restrict their characterization of the content of FOMC meetings to what was available in the public record.

Continuing the Schedule for the Minutes

March 19, 2002

At the same time, the working group and the full Committee considered shortening the schedule for the release of the minutes from the Thursday in the week of the next FOMC meeting, but the consensus of both groups was to leave the schedule unchanged. In light of the decision to retain the rules for speeches and for press and other public contacts, the Committee recognized that neither those in the majority nor dissenters could discuss the rationale for their votes beyond the content of immediate announcement for six or seven weeks, when the minutes of the meeting were released and the reasons for the decision and for the dissents would become part of the public record.

The main option considered was to appreciably accelerate the release of the minutes.²²⁹ The FOMC Secretariat reported that the minutes could be prepared for release as soon as the Friday two weeks after the meeting, that is, seventeen or eighteen days later. The use of an outside service to attend the meetings and prepare transcripts was assumed, as was very short turnaround by staff and Committee members commenting on drafts. This option was thought to have the advantage of allowing members to discuss their votes more promptly. Perhaps more important, the faster public release of the information in the minutes would give market participants a firmer grasp of Committee thinking in forming the expectations embedded in financial market prices.

The working group and the FOMC, however, found the disadvantages of this option to be more persuasive. Earlier release would add another source of official FOMC information before the next meeting, giving rise to a possible second reaction among market participants some 2½ weeks after the original announcement of the decision at the previous meeting. The minutes would continue to contain a wide variety of information, and so predicting what particular

229. See Donald Kohn, Virgil Mattingly, and Michelle Smith, "Release of FOMC Votes," memorandum to Federal Open Market Committee, March 5, 2002, p. 4.

portion of them, if any, the markets would react to would be difficult. Because the next FOMC meeting would not yet have taken place, the minutes would be scanned for clues about the subsequent decision, despite the possible arrival of new and significantly different information that might affect policy. If economic circumstances changed materially in the interim, the information could be misleading regarding Committee intent.

Complying with Legislative Goals and Changing Reporting Requirements

This section looks at the way in which the expired reporting requirements under the Humphrey–Hawkins Act were replaced.

Replacing the Expired Reporting Requirements of the Humphrey–Hawkins Act December 27, 2000

The reporting requirements of the Humphrey–Hawkins Act—or more exactly, the Full Employment and Balanced Growth Act of 1978—expired on May 15, 2000. The Federal Reserve thus faced the normal July monetary policy report and testimony with no controlling legal authority. Still, the Federal Reserve reported ranges for money and credit along with ranges and central tendencies for projections of macroeconomic variables.

Not until December 27, 2000, was applicable new legislation passed. Public Law 106-569, Section 1003, deleted or substituted new provisions for all but the first sentence of Section 2A of the Federal Reserve Act, which contained the ultimate objectives introduced in 1977. The deleted material had required semiannual reports on ranges for money and credit and consultation. In its place, the new law inserted Section 2B requiring certain semiannual appearances and reports:

SEC. 2B—Appearances Before and Reports to the Congress

(a) *Appearances before the Congress.*

(1) The Chairman of the Board shall appear before the Congress at semi-annual hearings, as specified in paragraph (2), regarding—

(A) the efforts, activities, objectives and plans of the Board and the Federal Open Market Committee with respect to the conduct of monetary policy; and

(B) economic developments and prospects for the future described in the report required in subsection (b).

(2) The Chairman of the Board shall appear—

(A) before the Committee on Banking and Financial Services of the House of Representatives on or about February 20 of even numbered calendar years and on or about July 20 of odd numbered calendar years;

(B) before the Committee on Banking, Housing, and Urban Affairs of the Senate on or about July 20 of even numbered calendar years and on or about February 20 of odd numbered calendar years; and

(C) before either Committee referred to in subparagraph (A) or (B), upon request, following the scheduled appearance of the Chairman before the other Committee under subparagraph (A) or (B).

(b) *Congressional report.* The Board shall, concurrent with each semi-annual hearing required by this section, submit a written report to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Banking and Financial Services of the House of Representatives, containing a discussion of the conduct of monetary policy and economic developments and prospects for the future, taking into account past and prospective developments in employment, unemployment, production, investment, real income, productivity, exchange rates, international trade and payments, and prices.²³⁰

The need to give the Congress growth ranges for money and credit was gone. The FOMC finally could abandon what had already become a charade: going through the motions of selecting benchmark ranges for money growth in a hypothetical steady-state. The new law, however, required “a discussion of . . . economic developments and prospects for the future.” Arguably, ranges or central tendencies of the macroeconomic projections by Board members and Reserve Bank presidents, which have been included in the reports since mid-1979, are needed to satisfy this phrase.

Implementing Monetary Policy 1997–2002

Operating procedures in which the Committee selects a targeted federal funds rate that is immediately announced to market participants have remained the same as they were in July 1996. Chart 6 shows the extension of movements in the targeted federal funds rate from then to the present—again taking the series from the Board’s web page.

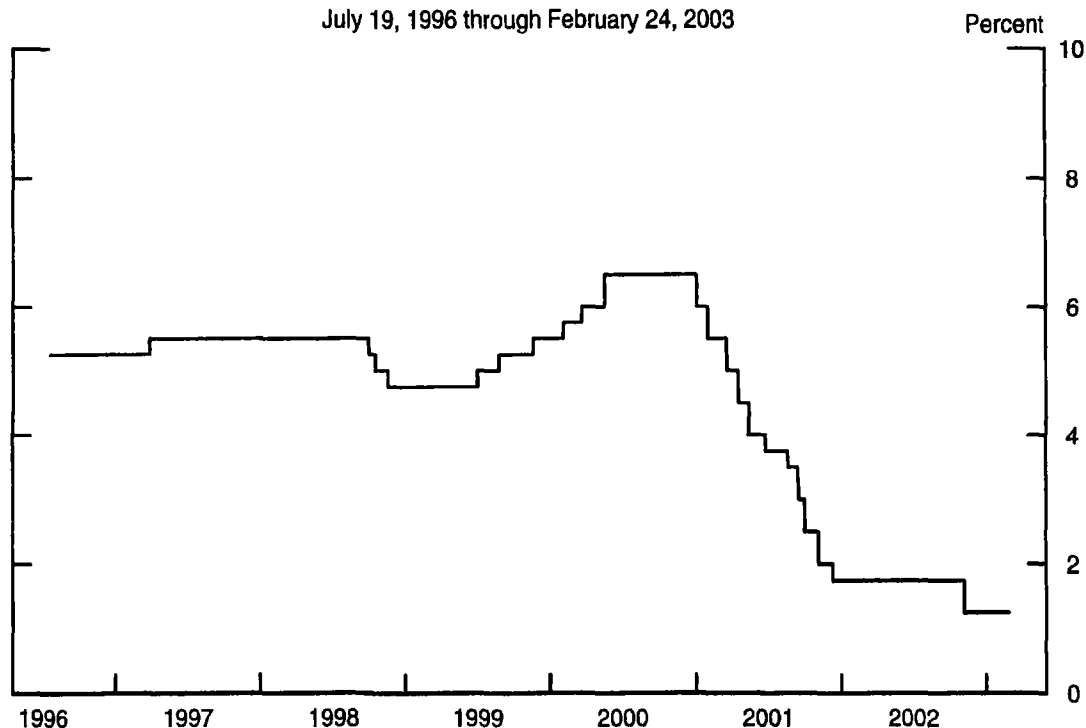
As economic conditions have evolved, the FOMC’s rationale for its policy implementation has also shown significant movement. The changing outlook for the economy, of course, was reflected in the semiannual forecasts of Committee members, which are presented from 1997 to 2003 in tables 21–24, along with the actual outcomes as reported in the first Greenbook produced in the following year.

230. Federal Reserve Act, Section 2B, “Appearances Before and Reports to the Congress,” *Federal Reserve Regulatory Service*, vol. 1, loc. no. 1–017.1

Chart 6

Intended Federal Funds Rate

July 19, 1996 through February 24, 2003

**Communicating Monetary Policy****1997–2002**

Since 1996 the FOMC in public statements has stressed the difficulties in forecasting and the importance of responding quickly to an evident change in economic trends. The reason has related partly to the surprising surge in productivity growth in that period. Also, the various special events—such as the Asian crisis, the Russian default, LTCM's problems, Y2K, the start of recession in March 2001, the attacks of September 11, 2001, the accounting scandals and the demise of Enron and WorldCom, the consolidation of high-tech and telecommunication industries, the stock price tumble, the surprisingly slow recovery of jobs, and the mounting uncertainties leading up to the war in Iraq—seemed to have arrived one after another. If the Committee's implicit weight on estimates of existing circumstances attained approximate parity with that of forecasts of likely economic developments, as some of the results in chapter VI suggest, then official statements understandably would have placed less emphasis on the cloudier outlook as opposed to harder reality as factors influencing policy setting. Whatever the statistical results in chapter VI are worth, this implication does seem to be borne out in the various testimonies, speeches, minutes, and meeting transcripts. For example, Governor Ferguson stated on July 9, 1998:

What should be done when uncertainties seem particularly acute? When we suspect that our understanding of the macroeconomic environment has

Table 21
 Nominal GDP Growth:
 Central Tendency of Projections in Humphrey-Hawkins
 and Monetary Policy Reports, 1997–2003
 (Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1997	4¼ to 5	4½ to 4¾	5 to 5½	5.8
1998	4½ to 5	3¾ to 4½	4½ to 5	5.0
1999	4¼ to 5	4 to 4½	5 to 5½	5.9
2000	4 to 5	5¼ to 5½	6¼ to 6¾	5.9
2001	5¼ to 6	4 to 5	3½ to 4¼	1.9
2002	5 to 5½	4 to 4½	4¾ to 5¼	4.1
2003	5 to 5¾	4¾ to 5	n.a.	n.a.

n.a. Not available.

Table 22
 Real GDP Growth:
 Central Tendency of Projections
 Presented in Humphrey-Hawkins Reports, 1997–2003
 (Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1997	1¾ to 2¼	2 to 2¼	3 to 3¼	3.8
1998	2 to 2½	2 to 2¾	3 to 3¼	4.0
1999	2 to 2½	2½ to 3	3½ to 3¾	4.2
2000	2½ to 3	3¼ to 3¾	4 to 4½	3.5
2001	3¼ to 3¾	2 to 2½	1¼ to 2	.1
2002	3 to 3¼	2½ to 3	3½ to 3¾	2.8
2003	3½ to 4	3¼ to 3½	n.a.	n.a.

n.a. Not available.

Table 23
CPI/PCE Inflation Rate:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1997–2003
(Percent, fourth quarter to fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1997	2¾ to 3	2¾ to 3	2¼ to 2½	1.9
1998	2½ to 3	1¾ to 2¼	1¾ to 2	1.5
1999	2 to 2½	2 to 2½	2¼ to 2½ (CPI)	2.0
2000	2 to 2½ (PCE)	1¾ to 2	2½ to 2¾	2.4
2001	2 to 2½	1¾ to 2¼	2 to 2¼	1.3
2002	1¾ to 2½	About 1½	1½ to 1¾	1.9
2003	1½ to 1¾	1¼ to 1½	n.a.	n.a.

NOTE. PCE chain-type price index used after 1999.

n.a. Not available.

Table 24
Unemployment Rate:
Central Tendency of Projections
Presented in Humphrey-Hawkins Reports, 1997–2003
(Percent, fourth quarter)

Year for which projection was made	Report in which projection was made			MEMO Actual, current year
	July of previous year	February of current year	July of current year	
1997	5½ to 5¾	5¼ to 5½	4¾ to 5	4.7
1998	4¾ to 5	About 4¾	4¼ to 4½	4.4
1999	4½ to 4¾	4¼ to 4½	4 to 4¼	4.1
2000	4¼ to 4½	4 to 4¼	About 4	4.0
2001	4 to 4¼	About 4½	4¾ to 5	5.6
2002	4¾ to 5¼	6 to 6¼	5¾ to 6	5.9
2003	5¼ to 5½	5¾ to 6	n.a.	n.a.

n.a. Not available.

deteriorated appreciably, as evidenced by strings of surprises difficult to reconcile with our earlier beliefs, I think that the appropriate response is to rely less upon the future predicted by the increasingly unreliable old gauges and more upon inferences from the more recent past, weighing incoming data more heavily relative to more distant data in trying to discern the new environment.²³¹

As we observed earlier, the FOMC's communications about policy implementation over this period also continued to evolve in the direction of enhanced transparency. The FOMC seemed to have reached a degree of communication that provided observers in the private sector with enough information to enable them to make an informed assessment of the rationale for, as well as the specific federal funds rate associated with, the current stance of monetary policy. And the balance-of-risks statement afforded market participants and others the Committee's assessment of the relative weight of the key risks affecting the outlook. Finally, the overall immediate announcement also sometimes offered further clues about the likelihood of future policy moves.

231. Roger W. Ferguson, Jr., "Exercising Caution and Vigilance in Monetary Policy," July 9, 1998, p. 6. A more extended treatment of related issues is in Laurence H. Meyer, "Structural Change and Monetary Policy," March 3, 2000.

VI. 1969–2003:Q1: EVOLVING DESIGN OF MONETARY POLICY

Designing Monetary Policy	203
1969–79	203
1980–82	207
1980–87	211
1988–96	223
1997–2003:Q1 or 1988–2003:Q1	231
Summary of Evolving Policy Design	237

VI. 1969–2003:Q1: EVOLVING DESIGN OF MONETARY POLICY

Economists usually do not stop after providing a narrative history—we go on to reduce those facts to numbers. The FOMC’s setting of its policy instrument can be related statistically to the recent macroeconomic outcomes, to its estimates of the current situation, or to its forecasts of the economy by estimating a policy “reaction function,” or “rule” in today’s misleading nomenclature. That function typically embeds objectives for inflation and resource use. Gradual adjustment of the funds rate can be captured with a term for the lagged funds rate. The resulting estimated reaction functions, especially when compared across various historical episodes, will help identify the nexus between communication policies and the setting of the policy stance.

Designing Monetary Policy

This chapter differs from those that have gone before in that it gathers in one place the analyses of the underlying principles of monetary policy design in each of the five main eras during the past three decades. Because of the nature of the material addressed, the chapter is more technical than the previous ones.

1969–79

For the first period examined, Athanasios Orphanides used quarterly data from 1969:Q1 to 1979:Q2 to estimate the following real-time, forward-looking Taylor rule, with a lagged nominal funds rate dependent variable to incorporate gradual adjustment.²³² With my notation, his equation is:

$$f_t = (1 - \rho) (a_0 + a_\pi \pi_{t+3|t} + a_u u_{t+3|t}) + \rho f_{t-1} + \epsilon_t.$$

He says (p. 115), again with my notation,

Suppose the policy objective is to maintain unemployment at its full-employment noninflationary level (i.e. the “NAIRU” [non-accelerating inflation rate of unemployment]) or “natural” rate, u^* , and inflation around a target, π^* . Let f denote the federal funds rate (the policy instrument), r^* the “natural” real rate of interest, $\pi_{t+3|t}$ the outlook for inflation, $u_{t+3|t}$ the outlook for unemployment, all expressed as percentages (and annual rates when applicable).

He argues (p. 116) that the estimated equation will be shown to contain

key elements frequently highlighted as reflecting good policy practice: a strong systematic response to inflationary developments in the economy, $a_\pi > 1$; a countercyclical response to the business cycle, $a_u < 0$ (with higher values of a_u [in absolute value] associated with a greater policy activism); and in light of the well known lags in the monetary transmission mechanism, a

232. Athanasios Orphanides, “Monetary-Policy Rules and the Great Inflation,” *American Economic Review, Papers and Proceedings*, vol. 92, no. 2, May 2002. He ends his sample period in 1979:Q2 rather than in Q3. His reading of the transcripts suggests that with the two tightenings in July and Paul Volcker’s becoming Chairman in August, leading the FOMC to decisive tightening before October, monetary policy in the third quarter resembled more closely what came afterward than the average reaction function over the 1969:Q1 to 1979:Q2 interval.

forward-looking policy approach, accommodated by using near-term forecasts of inflation and unemployment as summary indicators of the state of the economy.

Indeed, an optimal forward-looking Taylor rule of this form can be derived from a particular simple model with a social welfare function, a spending equation, and an accelerationist inflation equation. The model assumes that the central bank has a quadratic loss function. In this function, the social loss depends (1) on the output gap and the inflation gap both two years hence and (2) on the change in the funds rate next year. The model also incorporates a specific equation explaining aggregate demand, in which the output gap two years hence depends on the real short rate next year and on the output gap next year, and a specific Phillips equation, in which the inflation rate two years hence depends on the output gap two years hence and on the inflation rate next year.²³³

Ideally, the FOMC’s own forecasts would be used in the estimate, but as Chairman Burns was quoted above as saying, no such forecasts by the members of the FOMC were collected over those years. Therefore, Orphanides is forced to rely on an admittedly second-best alternative for capturing what the Committee had in mind—the staff’s Greenbook forecasts. He uses (p. 117)

the forecast of the rate of change in the output deflator from quarter $t-1$ to quarter $t+3$ [and] corresponding forecasts . . . for the average rate of unemployment over the current and next three quarters. . . .

The least-squares results for quarterly data are presented in table 25 and graphed in chart 7, which shows the prediction of the rule as well as the actual federal funds rate.²³⁴ Chart 8 plots the forecasts of inflation and unemployment used in the regression equation.

Table 25
Parameter Estimates and Regression Statistics for
the Policy Rule, 1969:Q1–1979:Q2

Parameter				Statistic	
a_o	a_π	a_u	ρ	\bar{R}^2	SEE
11.37	1.52	-2.04	.59	.89	.75
1.32	.24	.30	.05		

NOTE. Standard errors are shown under the parameter estimates.

233. This derivation originated in 1997. At that time, economists knew in general that a lag in the IS equation would produce central-bank reliance on forecasts in monetary policy. This specific derivation of a forward-looking Taylor rule was shown to me by Athanasios Orphanides. It reappeared in David Lindsey, “A Rationale for the Balance-of-Risks Statement,” memorandum to Vice Chairman Ferguson, May 21, 2002, pp. 19–20.

234. Athanasios Orphanides, “Monetary-Policy Rules and the Great Inflation,” pp. 117 and 119. For semiannual data in table 31 in this chapter, the estimate of the partial-adjustment ρ term with quarterly data (0.59) had to be squared, giving 0.35.

Chart 7
Actual and Predicted Federal Funds Rate

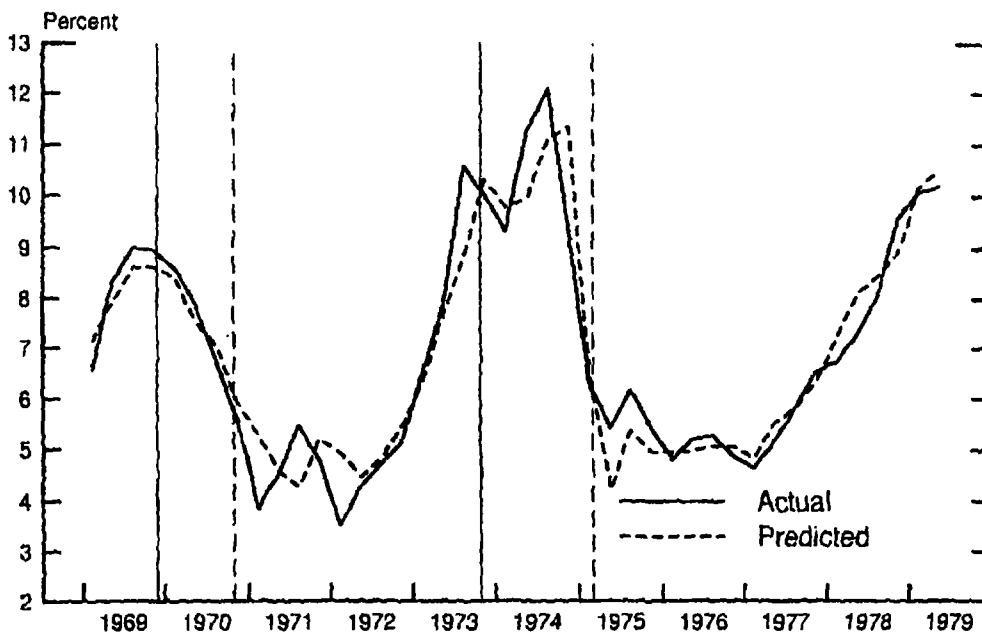
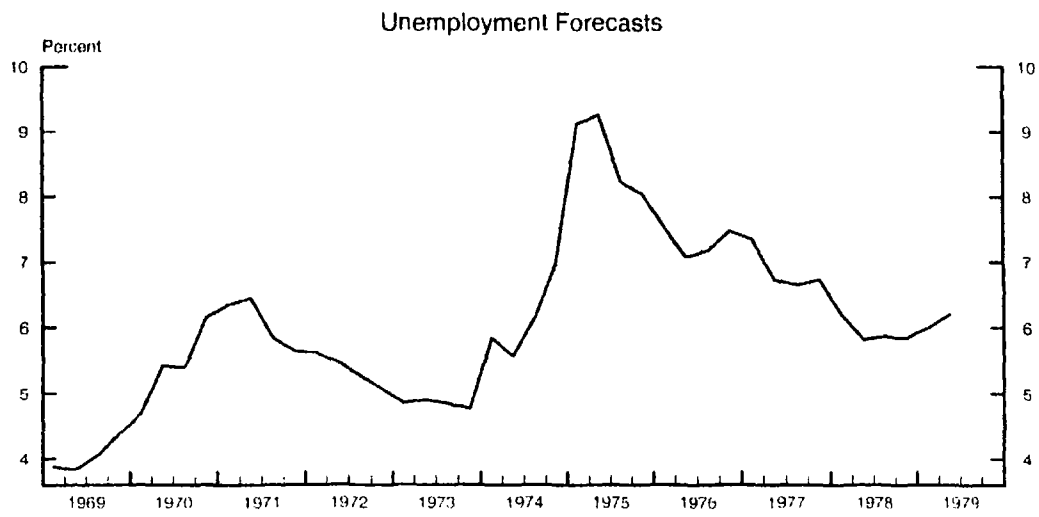
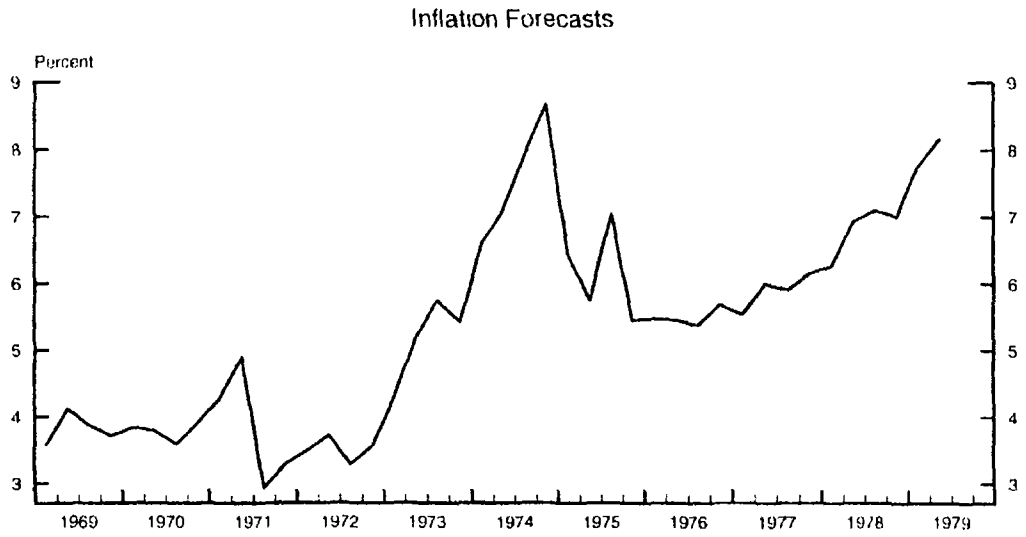


Chart 8
Inflation and Unemployment Forecasts
1969:Q1 - 1979:Q2



The FOMC seems to have acted at the time largely “as if” it had been implementing this rule. Based on the real-time forecasts at its disposal, the FOMC had an estimated long-run response of the nominal funds rate to a rise in the inflation rate that was indeed well above unity and that implied an increase in the real short-term interest rate. Orphanides commented on the plausibility of the estimates (p. 118–19):

Note that . . . $a_0 = r^* - (a_\pi - 1) \pi^* - a_u u^*$. Setting $\pi^* = r^* = 2$, for example, suggests that policy during the period was consistent with a perceived estimate of 5.1 percent for the natural rate of unemployment, not unreasonable for the period. . . .

Close examination of policy during the Great Inflation suggests that actual policy decisions were consistent with application of a “modern” systematic, activist, forward-looking approach to policy. Policy was consistent with an inflation target of 2 percent, which should have safeguarded the goal of reasonable price stability. Policy responded strongly to forecasts of inflation and the unemployment gap, which could have been reasonably expected to result in a high degree of economic stability. Policy was meant to guide the economy to its “optimum feasible path,” consistent with what some “modern” research emphasizing activist policy design would suggest would be the “optimal” strategy to follow. Yet economic outcomes were disastrous.

1980–82

The new monetary control procedures introduced on October 6, 1979, can readily be modeled, although a high level of abstraction is adequate for our purposes. Such modeling can demonstrate that an intermediate target for money growth together with an operating target for nonborrowed reserves can be reduced to an equation determining the level of the short-term interest rate by using rules of thumb linking money growth to reserve market conditions. The coefficients for the rules of thumb are implicit in staff research of the early 1980s. This derivation not only provides a better fix on the three-year monetarist experiment but also highlights how unpredictable shocks to M1 demand forced the FOMC subsequently to alter its policy design.

Using natural logarithms, actual M1 growth is $\Delta \ln M_t$. The new monetary control procedures allowed the FOMC to choose how quickly after a divergence the targeted level of M1 should return to its desired long-run growth path. Here we can ignore this intermediate step and just assume that the targeted growth is given by Milton Friedman’s k percent rule. This assumption is especially appropriate over the six-month intervals for which the model will be applied because such periods are long enough for the FOMC to plan to return money to its steady-state path, which we will assume to be embodied in the announced annual growth range. Thus, the targeted M1 growth rate is assumed to be the long-run steady-state value, $\Delta \ln M^*$.

Assume that money starts out on its targeted path, $M_{t-1} = M^*_{t-1}$, so $\Delta \ln M_t \neq \Delta \ln M^*$ implies a level divergence of $M_t - M^*_t$ when the period ends. In August 1980, for example,

M-1B was about \$400 billion. Therefore, a deviation of M-1B growth from its target path of 1 percentage point at an annual rate over a six-month period would imply a level divergence of \$2 billion. Thus, m equals 2 in the following expression:

$$M_t - M_t^* = m [(\Delta \ln M_t - \Delta \ln M^*) \times 200].$$

Assuming further for simplicity a constant discount rate for bank borrowings (B) at the window, the deviation of discount window borrowing from its steady-state level will equal the required reserve ratio on transaction deposits at member banks (at that time, $g = 0.12$) times that M1 divergence:

$$B_t - B^* = g (M_t - M_t^*).$$

It follows that the deviation of borrowing from its steady-state amount, $B_t - B^*$, is proportional at $mg = 0.24$ to the money growth miss:

$$B_t - B^* = mg [(\Delta \ln M_t - \Delta \ln M^*) \times 200].$$

A robust econometric result was that, in most of the 1980s, a change of \$100 million in adjustment plus seasonal borrowing would be associated with a 25-basis-point change in the same direction in the spread of the funds rate over the discount rate.²³⁵ The deviation of the federal funds rate (f) from its steady-state value (f^*) would be proportional at $h = 2.5$ to the comparable deviation for borrowed reserves expressed in billions:

$$f_t - f^* = h (B_t - B^*).$$

Now assume that the “judgmental” reduction in the nonborrowed path is just as large as the induced increase in the level of borrowing and total reserves. A more ad hoc adjustment in fact was made upon occasion from 1980 until mid-1982 for larger than de minimis moves in borrowing. Our assumed rule of thumb is more mechanical than actual practice, but on average it probably is in the ballpark. This allowance for a judgmental adjustment to nonborrowed reserves implies that h can be replaced by $2h$ in the equations below.

Therefore, the movement of the funds rate away from its steady-state level would be proportional at $2mgh = 1.2$ to the money growth miss:

$$f_t - f^* = 2mgh [(\Delta \ln M_t - \Delta \ln M^*) \times 200].$$

235. See David E. Lindsey and Gary Gillum, “Treatment of Special Situation and Seasonal Borrowings in Desk Operations,” October 29, 1987, memorandum to Mr. Kohn; sent to the Federal Open Market Committee with a cover note from Donald L. Kohn, “Definition of the Borrowing Objective,” October 29, 1987. This econometric estimate was derived from a regression of either the actual spread of the funds rate over the discount rate or the actual level of discount borrowings on an instrumental variable—either the FOMC’s borrowings assumption or the Desk’s expected federal funds rate, respectively—to avoid simultaneous equations bias. Also see exhibit 3 in chapter III.

Now consider a standard log linear money demand function:

$$\ln M_t^D = a + b \ln Q_t + c \ln P_t + 1/200 df_t + 1/200 \ln e_t,$$

where $1/200 \ln e_t$ is the equation's error, Q and P are the levels of real output and the price level, the coefficient b in the case of M1 is less than or equal to unity, the coefficient c equals unity, and the coefficient d is negative. Taking first differences and multiplying both sides by 200 yields

$$\Delta \ln M_t^D \times 200 = bq_t + \pi_t + d(f_t - f_{t-1}) + \Delta \ln e_t,$$

where q is the growth rate of real output and π is the rate of inflation, both at annual rates. The July 1980 Bluebook can be interpreted to have used the following values for M-1B for the June to December or Q2 to Q4 time spans in 1980: $b = 0.75$; $c = 1$; $d = -.22$.²³⁶

Now assume that for observations separated by six months, the money stock equals its demand:

$$M_t = M_t^D.$$

In the steady state the federal funds rate will be constant, and the error can be ignored. Assume for simplicity that the elasticities for real income and prices for six-month periods equal steady-state values. Thus, the FOMC's estimate of steady-state money growth will be given by the estimated growth of its equilibrium demand:

$$\Delta \ln M^* \times 200 = bq^* + \pi^*,$$

where q^* is the economy's estimated growth potential and π^* is the FOMC's implicit target for the inflation rate, both at annual rates.

Similar reasoning suggests that the nominal funds rate in the steady state will be the sum of the equilibrium real short-term interest rate, r^* , and this inflation target:

$$f^* = r^* + \pi^*.$$

Substituting the last four equations into the one for the federal funds rate gives the expression determining the funds rate under this simple version of M1 targeting:

$$f_t = \frac{1}{1 - 2mghd} [r^* + \pi^* + 2mgh(\pi_t - \pi^*) + 2mghb(q_t - q^*) + 2mgh \Delta \ln e_t - 2mghd f_{t-1}].$$

236. *Monetary Aggregates and Money Market Conditions*, July 3, 1980, pp. 11, 14, 17, and 18.

Now let

$$\rho = \frac{2mghd}{1 - 2mghd}.$$

Using 1980 Bluebook values gives $\rho = .264/1.264 = .21$.

This calibration implies that $1 - \rho = .79$.

Also, set $a_\pi = 2mgh = 1.2$ and $a_q = 2mghb = .9$. Of course, to the extent that the FOMC also reacted to other observed variables or responded within a more complex backward-looking framework, this equation determining the funds rate would hold with an additional error, η_t .

After all the substitutions, we have for six-month periods:

$$f_t = (1 - \rho)[r^* - (a_\pi - 1)\pi^* - a_q q^* + a_\pi \pi_t + a_q q_t + a_\pi \Delta \ln e_t] + \rho f_{t-1} + \eta_t,$$

or

$$f_t = (1 - \rho)(a_0 + a_\pi \pi_t + a_q q_t) + \rho f_{t-1} + (1 - \rho)a_\pi \Delta \ln e_t + \eta_t,$$

or calibrated values of

$$f_t = .79(a_0 + 1.2\pi_t + .9q_t) + .21f_{t-1} + .95\Delta \ln e_t + \eta_t.$$

The coefficient on the funds rate lagged six months is only 0.21, which implies that partial adjustment in these years of money targeting was not too significant. The interpretation is that over a six-month period in the model, the Committee almost, but not quite, fully moved the funds rate by its eventual adjustment following a divergence of the money stock from its steady-state growth path. Furthermore, the implied setting for the current funds rate in the model is automatically generated by an operating target for nonborrowed reserves derived from targeting M1 along its steady-state growth path, together with the assumed judgmental adjustments to nonborrowed reserves. The funds rate will differ from its steady-state value of r^* plus π^* only if the growth of output differs from its estimated potential growth, the inflation rate differs from its implicit target, or money demand is shocked by varying percentage errors— $\Delta \ln e_t \neq 0$.

In fact, the FOMC was plagued, as we have seen, by shocks to the error term, $\Delta \ln e_t$, in the demand function for M1 growth. It turns out that the central bank should fully accommodate positive or negative values of $\Delta \ln e_t$ to insulate output growth and inflation from such purely monetary shocks. Indeed, if the variance of money demand is large enough relative to the variance of spending, then in optimal policymaking the interest rate should replace the money

stock as the central banks's intermediate target.²³⁷ In the early 1980s the FOMC of the model was not concentrating on the size of forecast errors for spending. Macroeconomic forecasts do not even appear in the basic equation, just derived, that determined the federal funds rate from 1980 to 1982, when the FOMC was engaged in controlling M1 and operating on nonborrowed reserves. Only estimates of two-quarter rates of inflation and real growth ending in the current quarter appear in that equation, along with the lagged funds rate and the backward-looking monetary and nonmonetary errors.

1980–87

The last section suggests that it could not have been the errors in the macroeconomic projections that were the most problematic to the FOMC. What was really troubling the Committee over those three years was the error in the demand function for M1 growth, $\Delta \ln e_t$ in our equation. Therefore, it should come as no surprise that the Committee publicly dropped its primary focus on M1 in early October 1982 and began to target the broader aggregates more judgmentally, based on general economic indicators of prevailing conditions. In other words, the FOMC eliminated the $(1 - \rho) a_\pi \Delta \ln e_t$ component of the overall error in the equation for the funds rate and, at the same time, in effect began to set the funds rate more directly through the closely related borrowing target, with its functional connection with the funds rate spread over the discount rate.

In essence, with $\Delta \ln e_t$ gone, the structure of the implicit equation for the funds rate in the fall of 1982 was reduced to

$$f_t = (1 - \rho)[r^* - (a_\pi - 1)\pi^* - a_q q^* + a_\pi \pi_t + a_q q_t] + \rho f_{t-1} + n_t,$$

$$f_t = (1 - \rho)(a_0 + a_\pi \pi_t + a_q q_t) + \rho f_{t-1} + n_t.$$

Thus, the deterministic part of that equation did not necessarily differ after the abandonment of money targeting.

A Board staff paper prepared in 1997 compared the explanatory power over 1980–87 of this specification of the FOMC's implicit reaction function based on *outcomes* for inflation and real

237. William Poole, "Optimal Choice of Monetary Policy in a Simple Stochastic Macro Model," *Quarterly Journal of Economics*, vol. 84, May 1970. For M1 targeting to be given up in favor of interest rate targeting in the Poole framework, the money demand errors must be sizable enough to produce an LM equation that is much more unpredictable than the IS equation is because of shocks to spending. In fact, if the IS and LM equations are equally sloped (but opposite in sign) and have equally sized standard errors, then M1 targeting is optimal, and no attention whatever should be paid to unexpected interest rate movements. This point is demonstrated in Stephen F. LeRoy and David E. Lindsey, "Determining the Monetary Instrument: A Diagrammatic Exposition," *American Economic Review*, vol. 68, no. 5, December 1978.

growth with one relying on *forecasts* of the inflation and unemployment gaps—like the one presented in a previous section for the 1970s.²³⁸

Just as a reminder, the reaction function using forecasts that was fit in the earlier section for the 1970s had the following general structure:

$$f_t = (1 - \rho) \left[(r^* - (a_\pi - 1)\pi^* - a_u u^*) + a_\pi \pi_{t+3|t} + a_u u_{t+3|t} \right] + \rho f_{t-1} + \varepsilon_t,$$

or

$$f_t = (1 - \rho)(a_0 + a_\pi \pi_{t+3|t} + a_u u_{t+3|t}) + \rho f_{t-1} + \varepsilon_t.$$

The extended selections that follow are from pages 4–21 of that Board staff paper.

In our analysis, we use only information available to the FOMC at the time decisions were taken, carefully eliminating data contamination by subsequent data revisions and definitional changes. Doing so ensures that the systematic reaction we uncover is explicitly operational and is not subject to McCallum's (1993) justified critique regarding policy rules based on unrealistic information assumptions. We construct measures of forecasts from the projections of key macroeconomic indicators made by the Federal Reserve Board Governors and Reserve Bank Presidents and publicly released each February and July as part of the Board's semi-annual Monetary Policy Report to the Congress (the Humphrey-Hawkins report). These projections appear to be the only publicly available source of quantitative information regarding FOMC members' beliefs about the state of the economy over the next several quarters. . . . We assess the extent to which these measures of forecasts, combined with perceived outcomes, can explain the level of the federal funds rate set immediately after the February and July FOMC meeting. . . .

We take the midpoint of the . . . central tendencies from February 1983 on, and the midpoints of the ranges for previous years, to represent our point estimates of FOMC expectations. For this reason, in estimating reaction functions, we can only use variables for which the FOMC has provided forecasts. . . .

Since the FOMC's forecasts apply to quarterly data, it is convenient to describe our dataset in terms of a quarterly frequency although we have only two observations per year. Denoting time (measured in quarters) with t , we associate the February Humphrey-Hawkins report with the first quarter of the year and the July Humphrey-Hawkins with the third quarter. We construct a dataset containing two sets of forecasts for each year covering four-quarter

238. David E. Lindsey, Athanasios Orphanides, and Volker Wieland, "Monetary Policy under Federal Reserve Chairmen Volcker and Greenspan: An Exercise in Description," February 1997.

intervals that always end three quarters in the future. For any variable x , we let $x_{t+i|t}$ denote the estimated outcome (for $i \leq 0$) or forecast (for $i > 0$) of the value of the variable x at $t + i$ as of time t Thus, letting u denote the rate of unemployment, $u_{t+3|t}$ would represent the three quarter ahead forecast of the rate of unemployment formed during quarter t , and $u_{t-1|t}$ the estimate, as of quarter t , of what the outcome for the rate of unemployment was in the previous quarter. . . . [U]sing the rate of unemployment as an example, the forecasts reported to the Congress in February have exactly the desired timing. That is, when t is the first quarter, the three-quarter-ahead forecast of unemployment, $u_{t+3|t}$, corresponds to the Humphrey-Hawkins forecast for the rate of unemployment in the fourth quarter of the same year. . . . Similarly, for inflation and real GDP growth, when t represents the first quarter of a year, the three-quarter ahead forecast corresponds to the rate of growth of prices or of GDP from the fourth quarter of the previous year to the fourth quarter of the current year, exactly matching the horizon of the Humphrey-Hawkins forecast. . . .

For the July Humphrey-Hawkins reports, however, we need to estimate the forecast of the unemployment rate of next year's second quarter, and the corresponding forecasts of four-quarter growth rates for prices and output that end in the second quarter of next year, by combining available information. . . . We approximate the unemployment forecasts in the second quarter of the following year by simply averaging the forecasted levels for the current year's fourth quarter and next year's fourth quarter that are contained in the report. . . .

The desired second-quarter-to-second-quarter forecasts of growth rates of real output or prices are obtained by constructing two forecasted half-year annualized growth rates and then averaging them. . . .

The inflation forecasted for the second half of the current year . . . can be inferred from the reported inflation forecast for the whole current year from a base of last year's fourth quarter, . . . and the estimated inflation over the first half of the current year from a fourth quarter of last year base. . . . For. . . inflation over the first half of next year, we simply set it equal to the forecast for all of next year contained in the July Humphrey-Hawkins report. . . .

We apply the same procedures in constructing the data series we used to represent the forecast GDP growth, q . Much as before, we assume that GDP growth in each half of the following year equals the forecasted rate for the year as a whole contained in the July Humphrey-Hawkins report. . . .

In our examination of simple policy rules, we want to allow for a direct comparison of rules based on the forecasts described above, to rules based on

outcomes of these variables. To that end, we construct parallel variables reflecting the latest historical information available to the FOMC at the time of the meetings preceding the two Humphrey-Hawkins reports in every year.

Thus, for the unemployment rate, we create the variable $u_{t-1|t}$ which for the February observation reflects the average level in the fourth quarter of the prior year and for the July observation reflects the average level in the second quarter of the current year. Similarly, for real growth and inflation, we create the variable $q_{t-1|t}$ and $\pi_{t-1|t}$. These reflect the four-quarter growth rate of output or prices ending in the fourth quarter of the prior year for the February observation, and ending in the second quarter of the current year for the July observation.

To ensure that our definition of outcomes is not contaminated by delays in the initial release and subsequent updates of the data, we rely only on data which would have been available to the FOMC by early February or early July. This implies that the data we use correspond either to preliminary estimates, first reported quarterly data, or estimates based on partial data. . . .

For the federal funds rate, which we consider as the FOMC's policy instrument, we use the Committee's intended level as of the close of financial markets on the day after the final day of the February and July FOMC meetings. . . .

The reaction functions we estimate for the federal funds rate all share the following underlying structure. . . . [T]hey posit that the systematic component of monetary policy can be described as a notional target for the federal funds rate, \hat{f} , which increases with inflation, π , and real activity, x , as measured by real output growth, q , or [decreases with] the rate of unemployment, u . Restricting attention to a linear specification we posit that . . .

$$\hat{f} = a_0 + a_\pi \pi + a_x x .$$

In estimating our specification we need to take an explicit stand regarding the timing of the information about inflation and real activity that the FOMC takes into account. To that end, we set

$$\hat{f}_t = a_0 + a_\pi \pi_{t|t} + a_x x_{t|t} ,$$

where τ captures this timing. The explanatory variable $\pi_{\tau|t}$ and $x_{\tau|t}$, the latter of which stands for either $q_{\tau|t}$ or $u_{\tau|t}$, are meant to encompass the information variables to which the FOMC may be reacting. . . .

In the regression we allow for the possibility that the FOMC responds to both outcomes and forecasts by defining summary information variables that are weighted averages of outcomes and forecasts:

$$\pi_{\tau|t} \equiv (1 - \phi)\pi_{t-1|t} + \phi\pi_{t+3|t},$$

and

$$q_{\tau|t} \equiv (1 - \phi)q_{t-1|t} + \phi q_{t+3|t},$$

or

$$u_{\tau|t} \equiv (1 - \phi)u_{t-1|t} + \phi u_{t+3|t},$$

where ϕ effectively represents the weight that the FOMC assigns to forecasts relative to outcomes. Thus, if ϕ is set equal to 1, the information variable collapses to a forecast alone. By contrast, if ϕ is set equal to 0, the information variable comprises only an outcome.²³⁹ In principle, ϕ can assume any value between 0 and 1, and the value of ϕ best describing the data can be estimated. . . .

Finally, we allow for the possibility that the FOMC only partially adjusts the intended federal funds rate, f , towards its notional target, \hat{f} , instead of implementing the target in every period. To the extent that the FOMC responds to forecasts, a partial adjustment to the prescribed long-run value could represent an element of caution in its policy response in light of the remaining uncertainty about the future. Partial adjustment can be introduced by allowing the FOMC decision just prior to the Humphrey-Hawkins report to be influenced by the level of the intended federal funds decided at the FOMC meeting before the previous Humphrey-Hawkins report. With our timing convention, this can be written as

239. The outcome-based results use information that extends only through the previous, rather than the contemporaneous, quarter. From 1980 to 1982, when the FOMC was targeting M1 growth, monetary data extended far enough into the current quarter to render our assumption that the relevant outcome for four-quarter M1 growth ended in the previous quarter something of an oversimplification. But with the expected funds rate measured just after FOMC meetings held in late January or early February and in late June or early July, using Greenbook projections for the current quarter to end four-quarter growth rates would seem to be even more of an oversimplification. Similarly, from 1983 to 1987, the FOMC continued to de-emphasize forecasts, particularly those made by the staff. For outcomes, we rely on four-quarter values for real GNP growth and, through 1988, inflation of the implicit deflator of the GNP, which were published for a quarterly interval rather than a monthly one. Thus, real-time observations on the previous quarter seem much less subject to measurement error than staff projections of the current quarter. After 1987, though, as we shall see, the frequency of publication of the best-fitting variable became monthly, so we switch from outcomes to Greenbook estimates of the contemporaneous quarter.

$$f_t = (1 - \rho)\hat{f}_t + \rho f_{t-2},$$

where ρ provides a measure of the degree of partial adjustment so that $\rho = 0$ reflects an immediate adjustment of the intended federal funds rate to its notional target.

We use our data set to estimate least squares regressions explaining the intended level of the nominal federal funds rate on the day after the February and July FOMC meetings. Our data set starts in February 1980, just after the new operating procedures for monetary policy were introduced in October 1979.

We stopped the sample in 1987, giving sixteen observations.

We always enter an inflation rate information variable, and we use for the real activity information variable either four-quarter real output growth [table 26] or the unemployment rate as an index of resource utilization [table 27]. Appearing as the inflation and the real right-hand side variables are: the outcomes, setting ϕ at 0 in columns 1 and 2 of each table; the forecasts, setting ϕ at 1 in columns 3 and 4; and the weighted average of outcomes and forecasts, allowing the regression equation to determine the value of ϕ in columns 5 and 6. The partial adjustment parameter, ρ , is set to 0 in the odd-numbered columns, but estimated in the even-numbered columns. All regression equations that encompass the early 1980s also include a dummy variable for the credit controls episode affecting the July 1980 data point.

[Tables 26 and 27] give the results for the 1980-1987 period. Each of the [t]ables has an associated three panel chart [charts 9 and 10]. The top panel plots the actual federal funds rate together with the predicted funds rate from the best fitting equation on each associated table, while the middle and bottom panels show both outcomes and forecasts for the real variable and inflation, respectively. These figures facilitate “ocular regressions,” enabling one to relate the movements of the funds rate visually to the variations in the relevant explanatory variables in each subperiod. Recall that in each panel the points for a given date refer to different four-quarter intervals: The dotted outcomes line refers to four-quarter growth ending one quarter before the date on the horizontal axis, while the dashed forecasts line refers to four-quarter growth ending three quarters after the date on the horizontal axis.

For the [1980 to 1987 sample] the best fitting equation is shown in column 1, of [table 26], which contains outcomes alone for inflation and real output growth, with no lagged dependent variable. The following points concerning this equation are notable. First, the coefficient on the inflation term, 1.54, is significantly greater than 1. Second, comparing columns 1 in [tables 26 and

Table 26
Implicit Policy Reaction to Inflation and Real Growth, 1980:Q1–1987:Q3

Coefficient and statistic	Basis of regression					
	Outcomes		Forecasts		Both	
	(1)	(2)	(3)	(4)	(5)	(6)
a_0	1.69	1.55	-.70	-1.87	2.05	2.02
	.84	1.02	3.57	4.55	1.18	1.91
a_π	1.54	1.56	1.85	2.20	1.49	1.49
	.12	.15	.41	.55	.17	.28
a_q	.32	.34	.48	.25	.30	.30
	.13	.14	.55	.70	.13	.17
ρ	0	.04	0	.37	0	.00
		.12		.13		.17
ϕ	0	0	1	1	-.12	-.11
					.30	.44
\bar{R}^2	.92	.91	.73	.83	.91	.90
SEE	1.12	1.16	2.00	1.59	1.16	1.21
DW	2.54	2.63	1.52	2.10	2.66	2.66

NOTE. The regressions shown are least squares estimates of the equation

$$f_t = (1 - \rho)(r^* - (a_\pi - 1)\pi^* - a_q q^* + a_\pi \pi_{\tau|t} + a_q q_{\tau|t}) + \rho f_{t-2},$$

where $\pi_{\tau|t} \equiv (1 - \phi)\pi_{t-1|t} + \phi\pi_{t+3|t}$ and $q_{\tau|t} \equiv (1 - \phi)q_{t-1|t} + \phi q_{t+3|t}$. The term $r^* - (a_\pi - 1)\pi^* - a_q q^*$ is estimated as a constant a_0 . Here, f denotes the intended federal funds rate, π the inflation rate over four quarters, and q real output growth over four quarters. $q_{t-1|t}$ and $\pi_{t-1|t}$ indicate outcomes for the previous quarter, while $q_{t+3|t}$ and $\pi_{t+3|t}$ denote forecasts. In columns 1, 3, and 5, ρ is set to zero, while in columns 2, 4, and 6, the unrestricted partial adjustment specification is shown. In columns 1 and 2, ϕ is set to zero, and the regression uses outcomes only. In columns 3 and 4, ϕ is set to one, and the regression uses forecasts only. Columns 5 and 6 reflect an unrestricted ϕ . Standard errors are shown under the parameter estimates. A dummy variable for the 1980:Q3 observation (reflecting credit controls) is included in the regression but is not shown. Sixteen observations are used corresponding to the February and July FOMC meetings during 1980:Q1–1987:Q3.

27], using output growth in the regression equation yields a much better fit to the data than using the unemployment rate, with the coefficient on the outcome for economic growth a significant 0.32. Third, the results for the outcomes in column 1 of [table 26] evince much more explanatory power than those for the forecasts in column 3. Indeed, the equation in column 1 with the two outcomes alone has a little lower standard error of estimate than the equation in column 5 with weighted averages of outcomes and forecasts variables. In other words, . . . adding forecasts for inflation and output growth to an equation with their outcomes is not worth the loss of one degree

Table 27
Implicit Policy Reaction to Inflation and Unemployment, 1980:Q1–1987:Q3

Coefficient and statistic	Basis of regression					
	Outcomes		Forecasts		Both	
	(1)	(2)	(3)	(4)	(5)	(6)
a_0	3.29	3.60	-.37	3.47	3.39	3.45
	2.27	2.70	3.61	5.56	2.86	3.41
a_π	1.42	1.45	1.50	2.38	1.41	1.54
	.14	.18	.26	.64	.19	.39
a_u	-.03	-.09	.38	-.73	-.04	-.13
	.28	.36	.49	.96	.31	.42
ρ	0	.05	0	.45	0	.11
		.17		.15		.25
ϕ	0	0	1	1	-.03	.16
					.37	.58
\bar{R}^2	.87	.86	.73	.84	.86	.85
<i>SEE</i>	1.39	1.44	2.02	1.55	1.45	1.51
<i>DW</i>	2.17	2.21	1.64	2.18	2.18	2.23

NOTE. The regressions shown are least squares estimates of the equation:

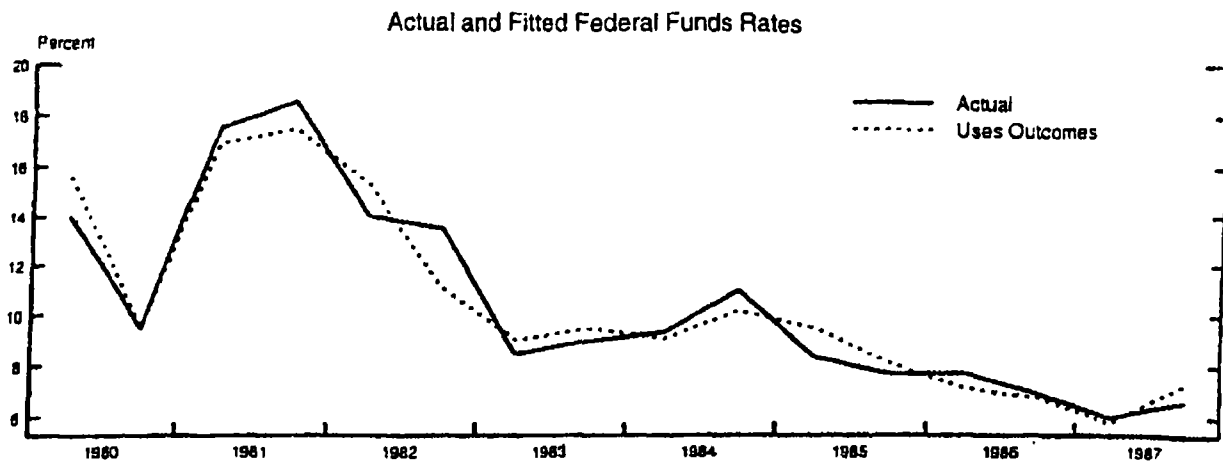
$$f_t = (1 - \rho)(r^* - (a_\pi - 1)\pi^* - a_u u^* + a_\pi \pi_{\tau|t} + a_u u_{\tau|t}) + \rho f_{t-2},$$

where $\pi_{\tau|t} \equiv (1 - \phi)\pi_{t-1|t} + \phi\pi_{t+3|t}$ and $u_{\tau|t} \equiv (1 - \phi)u_{t-1|t} + \phi u_{t+3|t}$. The term $r^* - (a_\pi - 1)\pi^* - a_u u^*$ is estimated as a constant a_0 . Here, f denotes the intended federal funds rate, π the inflation rate over four quarters, and u the unemployment rate. $u_{t-1|t}$ and $\pi_{t-1|t}$ indicate outcomes for the previous quarter while $u_{t+3|t}$ and $\pi_{t+3|t}$ denote forecasts. In columns 1, 3, and 5, ρ is set to zero, while in columns 2, 4, and 6, the unrestricted partial adjustment specification is shown. In columns 1 and 2, ϕ is set to zero, and the regression uses outcomes only. In columns 3 and 4, ϕ is set to one, and the regression uses forecasts only. Columns 5 and 6 reflect an unrestricted ϕ . Standard errors are shown under the parameter estimates. A dummy variable for the 1980:Q3 observation (reflecting credit controls) is included in the regression but is not shown. Sixteen observations are used corresponding to the February and July FOMC meetings during 1980:Q1–1987:Q3.

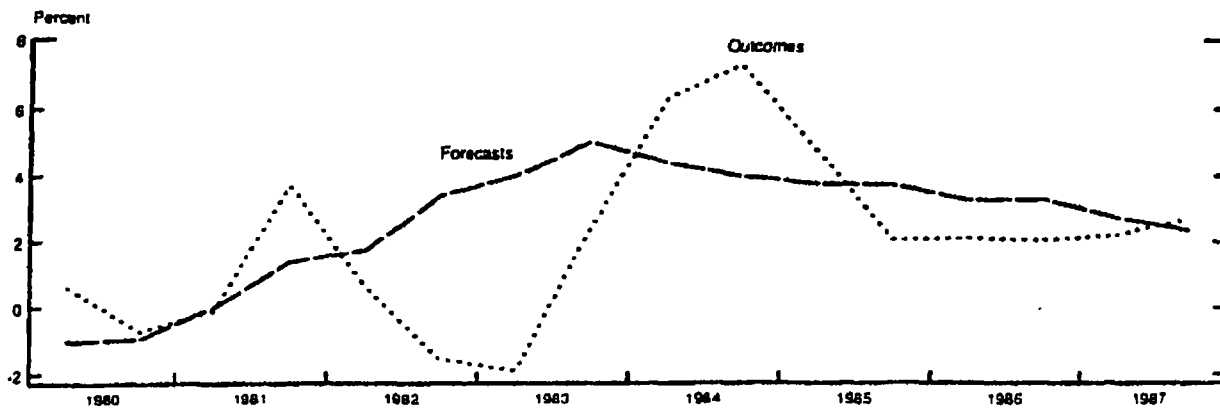
of freedom that results from estimating ϕ . The coefficient ϕ is not significantly different from zero, suggesting that the FOMC put virtually no weight on forecasts. And fourth, column 2 demonstrates the lack of significance for a ρ coefficient on the lagged dependent variable; policy actions evidently did not incorporate a partial adjustment process.

The top panel of [chart 9] charts the predictions of the specification using outcomes alone for real growth and inflation in column 1 of [table 26] shown by the dotted line—against the actual intended federal funds rate over the . . .

Chart 9
Fit Based on Inflation and Real Growth
1980:Q1 - 1987:Q3



Growth Rate of Output



Inflation Rate

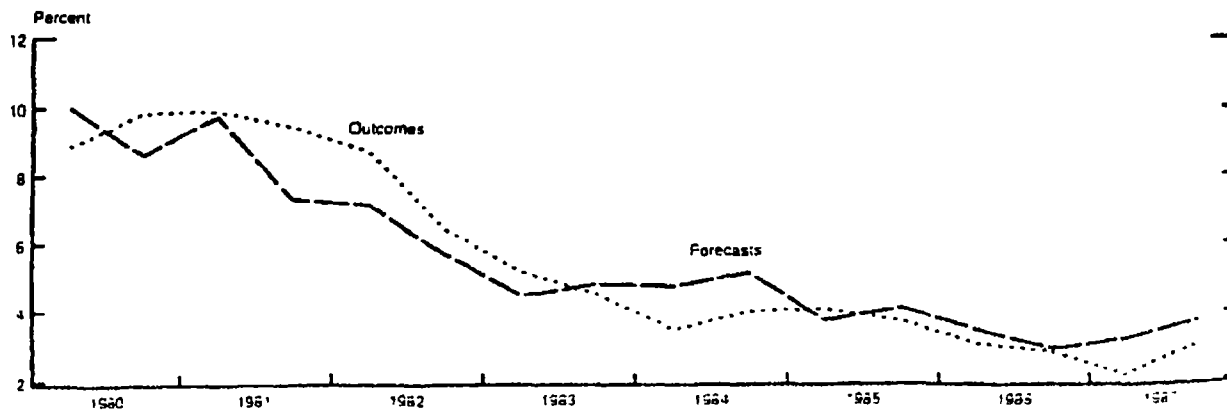
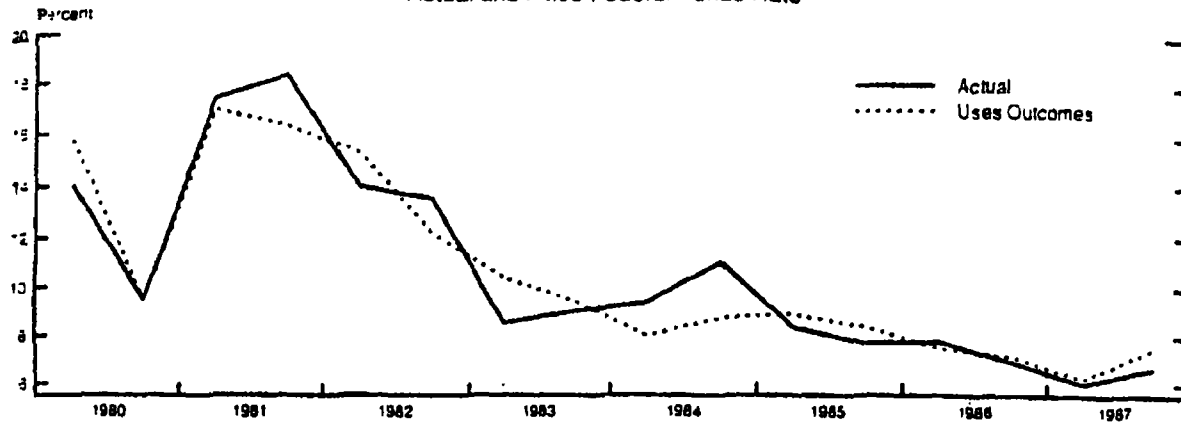
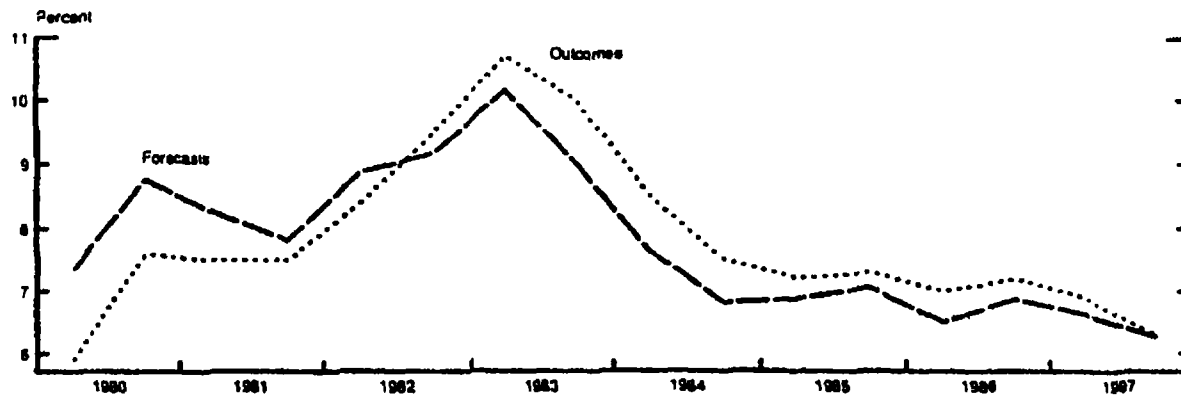


Chart 10
Fit Based on Inflation and the Unemployment Rate
1980:Q1 - 1987:Q3

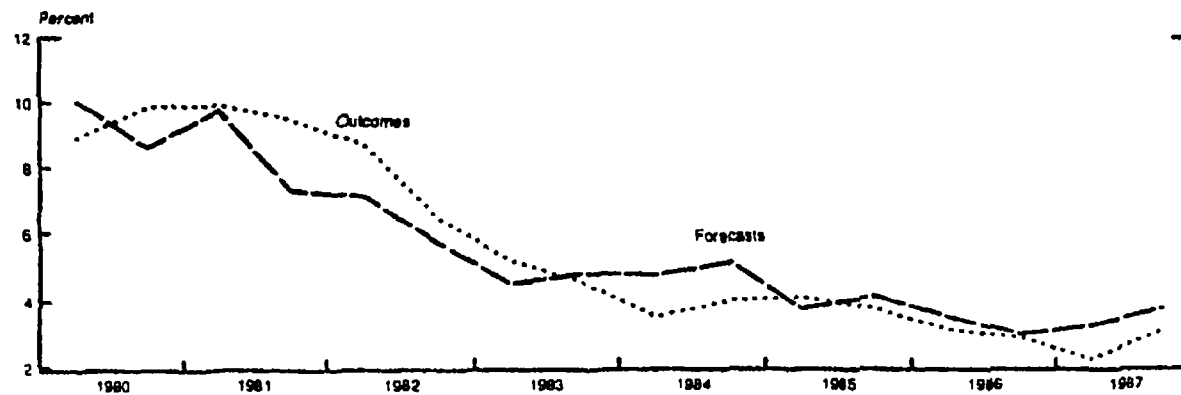
Actual and Fitted Federal Funds Rate



Unemployment Rate



Inflation Rate



subperiod—plotted by the solid line. The middle and bottom panels of [chart 9] graph the outcomes and forecasts of the output growth rate and the inflation rate over the . . . subperiod. Notice that the outcomes for the output growth rate vary considerably more than its forecasts. . . .

A useful check on our parameterization can be achieved by linking the parameters of our simple rules to the steady state values to which the federal funds rate, inflation and real activity would settle in the absence of any economic shocks. . . . Naturally, in a steady state, inflation would be expected to attain the FOMC's underlying target, π^* , and real activity would be consistent with sustained growth at potential, q^* , and unemployment would be equal to its natural rate, u^* . Further, the federal funds rate would equal the sum of inflation and the equilibrium real rate r^* . Thus, in steady state, our simple rules imply

$$r^* + \pi^* = a_0 + a_\pi \pi^* + a_x x^*,$$

where, once again, x stands for q or u depending on the specification. Solving for a_0 yields

$$a_0 = r^* - (a_\pi - 1)\pi^* - a_x x^*.$$

An intuitive interpretation of the expression for a_0 , the constant term in the regressions, is that the nominal federal funds rate would need to be higher, the higher is the Wicksellian natural real funds rate, the lower is the central bank's long-run inflation rate target, and the lower is the rate of growth of potential output or, recognizing that the coefficient on u^* in the expression for a_0 , that is, $-a_u$, is positive, the higher is the natural rate of unemployment. Our regression equations implicitly treat each of these components of the estimated regression intercept, a_0 , as itself a constant over the sample period.

Taking r^* , π^* , and q^* or u^* all to be constant over each sample period is an admittedly strong simplifying assumption. However, because r^* and q^* or u^* represent the FOMC's perception of their estimated values, it is certainly possible for them to be more stable over time than their actual counterparts in the "real world," which may well be subject to appreciable random variation as well as to secular changes. Furthermore, whether or not the implicitly adopted long-run inflation target π^* is constant is also a matter in the hands of the FOMC. On the other hand, the assumption of constancy in all the starred terms seems even stronger after recognizing that a change in q^* or u^* would

tend to induce a reinforcing change in r^* .²⁴⁰ Both the effect on q^* or u^* and the effect on r^* would tend to alter the intercept, a_0 , in the same direction.

With this understanding, some interpretive comments may place our regression results . . . in perspective. Solving the previously derived expressions for a_0 for π^* yields

$$\pi^* = \frac{r^* - a_q q^* - a_0}{a_r - 1}$$

for the best fitting reaction function [using outcomes for the 1980–1987 period]. . . .

Assuming that, owing to expansionary fiscal policy during the . . . subperiod, r^* is as high as 3 percent, while q^* equals 2-1/4 percent per year, a value of 1.1 percent per year for the long-run inflation target, π^* , when measured by the total CPI, is implied by the regression coefficient. The Boskin Commission (1996) recently estimated the upward bias of inflation measured by the total CPI to have been 1.1 percent per year. Adjusting [this] π^* estimate . . . by this amount converts [it] into a long-run “true” inflation target . . . of zero percent. . . .

In light of the inflationary crisis faced by the FOMC when Chairman Volcker assumed the chairmanship, for the FOMC to have adopted a “hard-line” anti-inflationary posture is understandable. As the Staff Director for Monetary and Financial Policy over much of the Volcker-era, Axilrod . . . noted, “The obvious problem--it was an easy period in that sense--was to control inflation. One way to do it was to impose an M1 rule on yourself, pay little attention to GNP forecasts, and just let the economy adjust. . . . [The FOMC] used M1 successfully as that bludgeon to receive a rapid reduction in inflation. . . .”²⁴¹

The negative regression results regarding partial adjustment in setting the funds rate over the whole seven years is reminiscent of the low value we saw for the early 1980s. Axilrod discussed the issues captured by the insignificant estimated value for the ρ term as applied to the earlier years:

“[T]he Great Inflation [of the 1970s] . . . came about because of an interaction of a culture of extreme policy caution and a number of unanticipated changes

240. For example, in many models, a rise in q^* , or a fall in u^* that raised potential output, ceteris paribus, would lower r^* to reestablish a higher long-run equilibrium level of real spending matching the higher level of potential output. [This footnote is in the original 1997 staff paper.]

241. Stephen H. Axilrod, “Comment,” *Financial Sectors in Open Economies: Empirical Analysis and Policy Issues*, Board of Governors of the Federal Reserve System, 1990, pp. 578–79.

in the economic environment. That is, in the culture of the time the policy instrument, say, the funds rate, was adjusted very carefully--slowly and in small increments. . . . In that context, you can think about the policy approach of 1979–82 as an effort to break the culture of excessive policy caution.”²⁴²

As the 1997 staff paper asserted, “The FOMC . . . evidently was willing to forgo gradual adjustment of the policy instrument in response to changing outcomes.”

The Committee, from 1980 through at least 1987, thus also had turned against interest-rate smoothing. It evidently believed that gradualism itself would contribute to the “too little–too late” policy syndrome that marked the 1970s. (A modern observer would say that this charge against gradualism was a bum rap because, if the basic policy stance is moved appropriately far enough and fast enough over time, there is no reason it cannot be done smoothly rather than abruptly.)

The three years 1987–89 are more difficult to characterize. The extension of the prescription of the reaction function fit from 1980 through 1987 into the post-sample period of the next two years is shown in chart 11 by the dotted line. Also plotted for these three years is another prescription from a reaction function with a very different structure fit from 1988 to 1996, shown by the dashed line, with a “backcast” of one year. Even though the latter prescription is shown for more years of its sample period, the fits of the two equations are reasonably similar. The 1997 Board staff paper (p. 23) said:

The similar prescribed settings for the funds rate over this interval, despite the quite dissimilar underlying structures of the two reaction functions, suggest that strong empirical confirmation cannot be provided for our choice of the exact date separating the two sub-periods, . . . Indeed, the data in this sense are unable to rule out a gradual rather than abrupt transition from the first to the second regime.

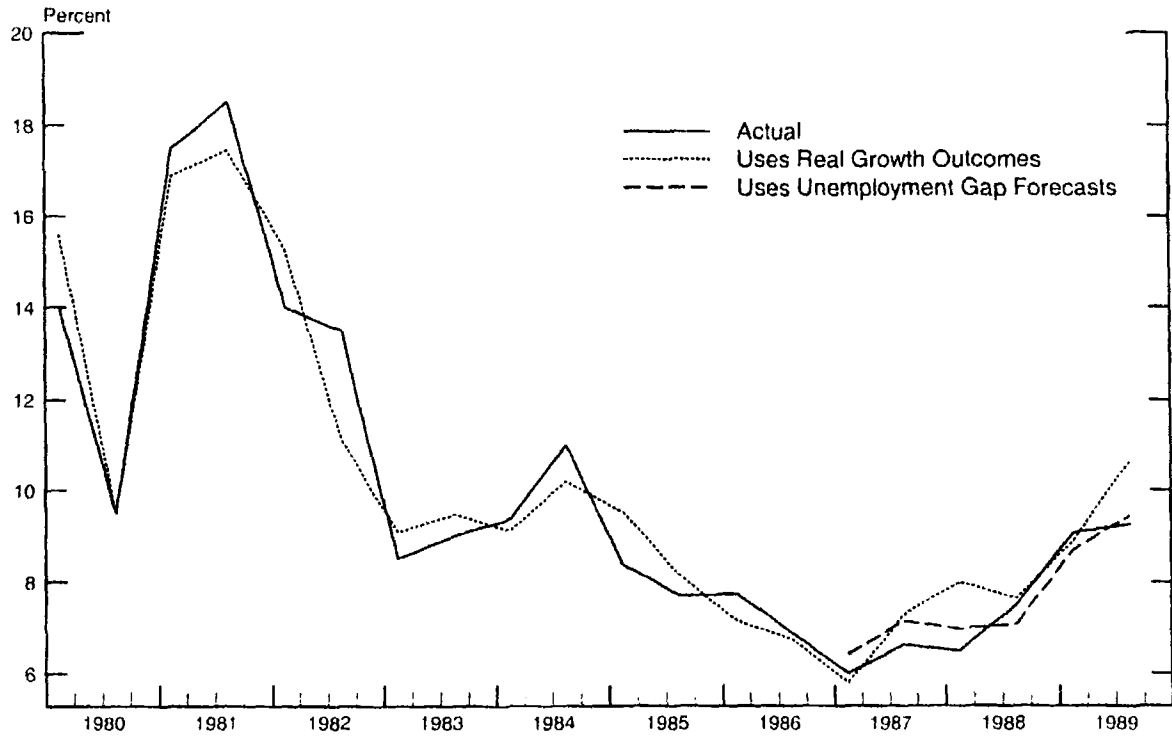
1988–96

The Board staff paper written in 1997 performed the same sets of tests of fits between outcomes and forecasts for the 1988–96 period as it had for 1980–87. Defining outcomes as ending in the previous quarter, the paper found that from 1988 to 1996 equations using FOMC forecasts of inflation and the unemployment rate fit much better than those using any measure of outcomes.

The present paper takes a very different tack. “Outcomes” are replaced by “estimates,” that is, results after 1987 given here, in contrast to those in that paper, switch from published values for the previous quarter to Greenbook estimates of measures in the contemporaneous quarter.

242. Stephen H. Axilrod, “General Discussion,” *Achieving Price Stability: A Symposium Sponsored by the Federal Reserve Bank of Kansas City*, 1976, pp. 232–33

Chart 11
Actual and Fitted Federal Funds Rate
Outcomes versus Forecasts



Although four-quarter real GNP growth now extends through estimates for the current quarter, by far the best-fitting regressions use instead the unemployment rate, which is released monthly rather than quarterly. Similarly, the series capturing the estimate for inflation is the core PCE, which also is released on a monthly schedule, rather than the implicit deflator of the GNP, which is a quarterly figure. Very preliminary estimates of the quarterly GNP output and price data through September 1985 were published for the first time only in the last month of the quarter in the so-called flash release. In December 1985, the flash was discontinued, with the first preliminary release even later, as now, in the first month of the next quarter. By contrast, the monthly data were, and are, put out in the subsequent month. Thus, enough inferential information bearing on the contemporaneous quarter was available from these alternative monthly data and other sources to warrant using Greenbook estimates of their current-quarter values for the relevant FOMC meetings in late January or early February and late June or early July in the post-1987 interval. Furthermore, by 1988 experience and turnover of FOMC personnel meant that the Committee probably viewed these near-term staff estimates as more reliable than they were viewed in the first seven years of the 1980s. In the 1988 to 1996 period, equations with these estimated measures fit nearly as well, as we soon shall see, as those with the macroeconomic forecasts of Board members and Bank presidents, although versions with estimates have some problems of interpretation.

The forecasts still end three quarters later, in the fourth or second quarters of the year, as dictated by the horizons of the central tendencies of the announced projections. The general findings reported here from 1988 to 1996 using these forecast-based measures in the reaction functions are similar to those originally reported in that paper. But two other minor refinements in the present study, which apply to estimates as well as forecasts, make the specific results for forecasts a little different. First, the staff's varying real-time estimates of the NAIRU rather than the assumption of a constant u^* are used during the 1988–96 sample period.

That is, equations for outcomes or forecasts in the 1997 staff paper assumed a fixed NAIRU, u^* , which was impounded in the constant term a_0

$$f_t = (1 - \rho)[(r^* - (a_\pi - 1)\pi^* - a_u u^* + a_\pi \pi_{\tau|t} + a_u u_{\tau|t})] + \rho f_{t-2} + \varepsilon_t,$$

or

$$f_t = (1 - \rho)(a_0 + a_\pi \pi_{\tau|t} + a_u u_{\tau|t}) + \rho f_{t-2} + \varepsilon_t,$$

where

$$\pi_{\tau|t} \equiv (1 - \phi) \pi_{t|t} + \phi \pi_{t+3|t}$$

and

$$u_{\tau|t} \equiv (1 - \phi) u_{t|t} + \phi u_{t+3|t}.$$

By contrast, the present paper uses the staff's time-varying value of the NAIRU estimated in real time, whether for the estimates or forecasts of $u^*_{t|t}$ or $u^*_{t+3|t}$. This estimate or forecast of the NAIRU is subtracted from the estimate or forecast for the unemployment rate, $u_{t|t}$ or $u_{t+3|t}$, to arrive at the estimate or forecast of the unemployment rate gap:

$$z_{t|t} \equiv u_{t|t} - u^*_{t|t},$$

$$z_{t+3|t} \equiv u_{t+3|t} - u^*_{t+3|t}.$$

Thus, the regression equations in this paper for 1988–96 take the form:

$$f_t = (1-\rho)[r^* - (a_x - 1)\pi^* + a_x\pi_{t|t} + a_z z_{t|t}] + \rho f_{t-2} + \varepsilon_t,$$

or

$$f_t = (1-\rho)(a_0 + a_x\pi_{t|t} + a_z z_{t|t} + \rho f_{t-2}) + \varepsilon_t,$$

where

$$\pi_{t|t} \equiv (1-\phi)\pi_{t|t} + \phi\pi_{t+3|t}$$

and

$$z_{t|t} \equiv (1-\phi)z_{t|t} + \phi z_{t+3|t}.$$

A second minor refinement to the inflation measure corresponding to π was made in this paper. The 1997 paper used the total CPI as the inflation index because the Committee in its semiannual inflation projections switched to this measure from the implicit deflator of the GNP in February 1989. The earlier paper transformed the February and July 1988 deflator measurements to a total CPI basis using the staff's estimate of the differential between the two inflation measures. The FOMC continued to use the total CPI until February 2000, when it converted its inflation projection to the chain-weighted total PCE deflator. In light of the Committee's switch to the PCE deflator, all the inflation data from 1988 to 2003 were converted for this paper to a consistent core PCE basis. This conversion was done for estimates and forecasts before 2000 by deriving from Board staff documents for current-quarter estimates or three-quarter-ahead forecasts the differential between total CPI data and core PCE data. For 1988, staff forecasts of the core PCE were not available, so the actual differential outcome for that year was used. From February 2000 forward, the total and core PCE estimates and forecasts were readily available in staff documents to convert total PCE concepts to a core PCE basis.²⁴³

In terms of the regression results, shown in table 28, in this paper the replacement of outcomes with the staff estimates of the current quarter does almost as well in the equations with gradualism as the measures of the Committee's forecasts (columns 2 versus 4). The standard error of this regression on estimates with gradualism is 0.40 percentage point, only 0.02 higher than the comparable result for forecasts. The coefficient on the estimate of inflation at 1.16 is statistically significant; it is above unity, as required for stability to ensure that the real funds rate

243. Use of the contemporaneous-quarter estimates, rather than lagged-quarter outcomes, of the staff's time-varying, rather than a fixed, estimate of the NAIRU, and of the core PCE, rather than total CPI, as the index of prices has been originated in stages since 1996 by Athanasios Orphanides, Volker Wieland, and Eric Swanson in various issues of the ongoing series of memoranda "Monetary Policy Rules." The only difference between the results in this paper and those in the memoranda is that equations with estimates or forecasts fit from early 1988 into the second half of the 1990s go through 1996 in this study and through 1998 in the memoranda, which makes a material difference only for estimates.

Table 28
Implicit Policy Reaction to Inflation and the Unemployment Gap, 1988:Q1–1996:Q3

Coefficient and statistic	Basis of regression					
	Estimates		Forecasts		Both	
	(1)	(2)	(3)	(4)	(5)	(6)
a_0	1.41	1.96	-.31	.17	.93	.70
	.65	.70	.8	.82	.97	.96
a_π	1.28	1.16	1.78	1.68	1.42	1.52
	.17	.18	.21	.22	.27	.26
a_z	-1.89	-2.41	-1.37	-2.20	-1.80	-2.28
	.20	.27	.25	.35	.25	.32
ρ	0	.42	0	.47	0	.44
		.08		.08		.08
ϕ	0	0	1	1	.24	.64
					.41	.36
\bar{R}^2	.90	.96	.88	.97	.89	.97
SEE	.66	.40	.72	.38	.68	.39
DW	1.20	2.59	1.04	2.71	1.09	2.68

NOTE. The regressions shown are least squares estimates of the equation:

$$f_t = (1 - \rho)(r^* - (a_\pi - 1)\pi^* + a_\pi \pi_{\tau|t} + a_z z_{\tau|t}) + \rho f_{t-2},$$

where $\pi_{\tau|t} \equiv (1 - \phi)\pi_{t|t} + \phi\pi_{t+3|t}$ and $z_{\tau|t} \equiv (1 - \phi)z_{t|t} + \phi z_{t+3|t}$. The term $r^* - (a_\pi - 1)\pi^*$ is estimated as a constant a_0 . Here, f denotes the intended federal funds rate, π the inflation rate over four quarters, and z the unemployment gap. $\pi_{t|t}$ and $z_{t|t}$ indicate real-time estimates of the current-quarter inflation rate and unemployment gap, respectively, while $\pi_{t+3|t}$ and $z_{t+3|t}$ denote forecasts. The current-quarter inflation term is the Greenbook's estimate of the 4-quarter change in the core PCE price index. The inflation forecast series is a core PCE measure constructed from the FOMC members' published (non-core) CPI projections. The real-time unemployment gap $z_{t|t}$ is the difference between the Board staff's estimates of the current-quarter unemployment rate and the NAIRU. The unemployment gap forecast $z_{t+3|t}$ uses the FOMC members' forecast of the unemployment rate and the Board staff's forecast of the NAIRU.

In columns 1, 3, and 5, ρ is set to zero, while in columns 2, 4, and 6 the unrestricted partial adjustment specification is shown. In columns 1 and 2, ϕ is set to zero, and the regression uses current-quarter estimates only. In columns 3 and 4, ϕ is set to one, and the regression uses forecasts only. Columns 5 and 6 reflect an unrestricted ϕ . Standard errors are shown under the parameter estimates. Eighteen observations are used corresponding to the February and July FOMC meetings during 1988:Q1–1996:Q3.

ultimately rises with an increase in the inflation rate, other things being equal. The coefficient on the estimate of the unemployment gap is similarly significant at -2.41, even larger than the coefficient on the forecast for this gap (columns 2 versus 4). The regression equation prefers a partial adjustment term, or ρ , of 0.42.

Even though the estimates now do much better than outcomes did previously, the previous paper's description of forecasts and the optimal combination of forecasts and outcomes (p. 16) still can be quoted, with a little judicious editing:

[T]he regression results reported in column 4 of [table 28], which incorporate forecasts alone for inflation and the unemployment rate, along with a lagged dependent variable, contain the lowest standard error of estimate. Some points regarding this equation are notable. First, the long-run coefficient on the inflation forecast in column 4, [1.68], of course remains significantly greater than 1. Second, the equation has a standard error of estimate of only 0.3[8] percentage point, . . . and the long-run coefficient on the unemployment [gap] forecast, -2.2[0], is highly significant. Third, in terms of fit, the equation in column 6 of the same table, which embodies an estimated ϕ coefficient that affords forecasts a [0.64] weight and [estimates] a [0.36] weight, is a close runner-up to the equation in column 4; . . . the estimate of ϕ is . . . significantly different from 1, which is consistent with [some] role for [estimates]. Fourth, the results reported in columns 3 and 5 of [table 28], which do not allow for a lagged dependent variable, display a [much] higher standard error of estimate than those of columns 4 or 6 using a lagged dependent variable with a significant ρ coefficient; interestingly, not permitting a partial adjustment process in column 5 yields a lower estimate of ϕ , [0.24], which signifies a greater weight on [estimates], than do the results for ϕ when a lagged dependent variable is used in columns 4 or 6. . . .

The estimates and forecasts of the inflation rate and the unemployment gap are plotted in chart 12.

[Chart 13] show[s] the good predictive performance in the . . . sub-period of the specification in column[s 2 and] 4 of [table 28] using [estimates and] forecasts of inflation and the unemployment rate, along with the lagged dependent variable.

We can generate an estimate of the inflation target, π^* , for core PCE inflation over the 1988–96 period from the results for both forecasts and estimates, given an assumption that r^* was constant at 2 percent, as Taylor originally posited.

VI. 1969-2003:Q1

Chart 12
Inflation and the Unemployment Gap
1988:Q1 - 1996:Q3

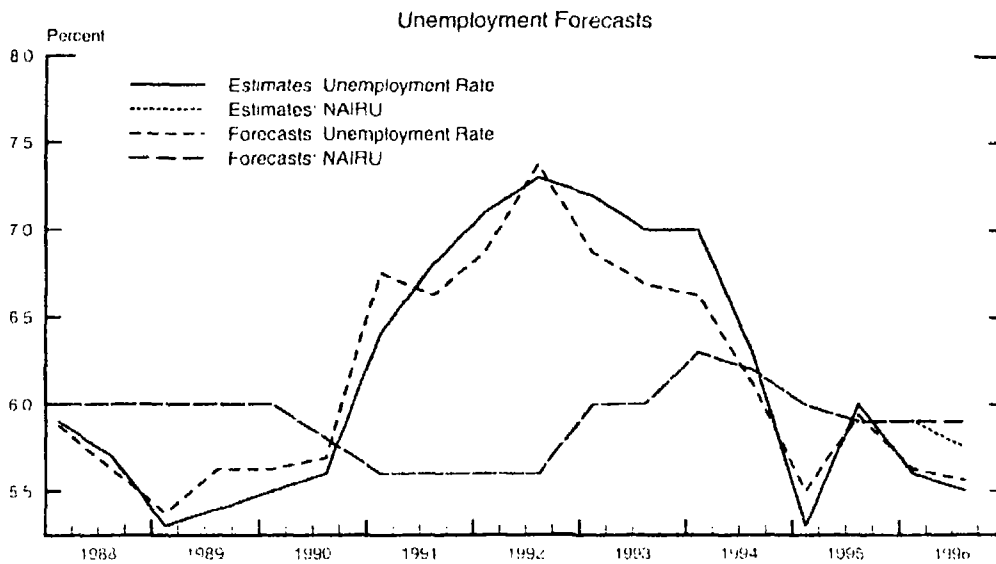
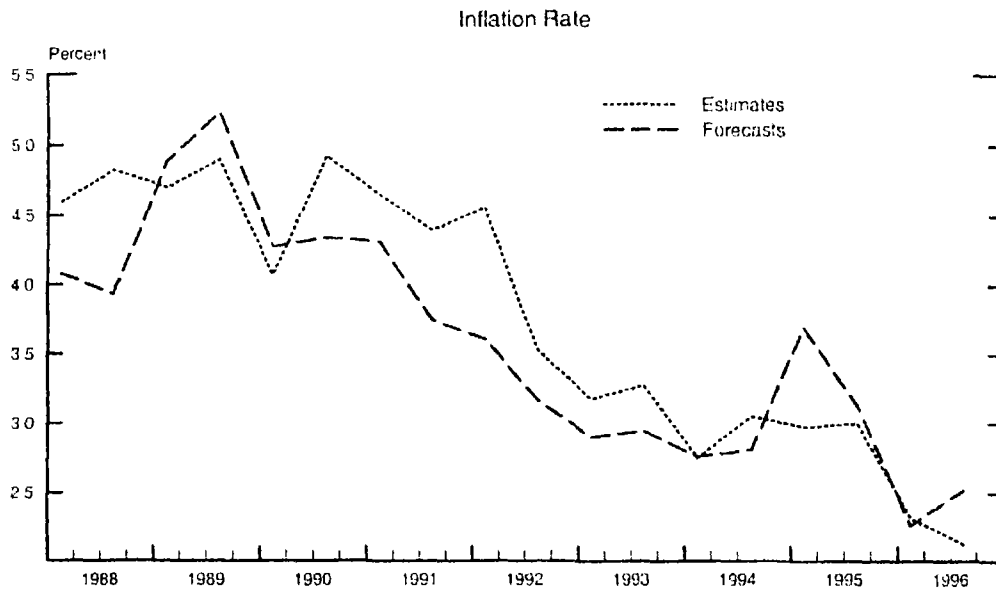
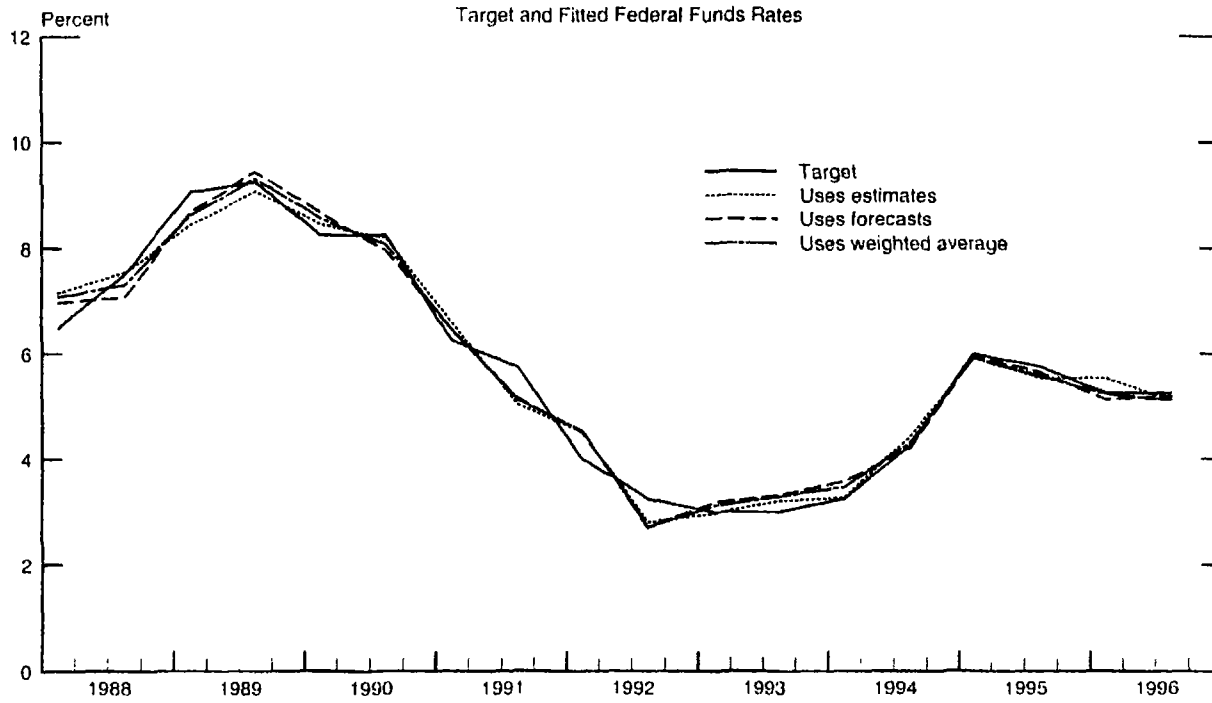


Chart 13
Fit Based on Inflation and the Unemployment Gap
1988:Q1 - 1996:Q3



For forecasts with gradualism (column 4), we have:

$$a_0 = r^* - (a_\pi - 1)\pi^*,$$

$$.17 = 2.0 - .68\pi^*,$$

$$\pi^* = 1.83/.68 = 2.7 \text{ percent.}$$

The Boskin commission's 1996 estimate of the upward bias for the total CPI was 1.1 percentage point. The staff's estimate for that year was a little higher at 1.3 percentage point. The staff also estimates that the comparable bias for the total or core PCE was 0.5 percentage point over 1988–96. Subtracting 0.5 from 2.7 yields an effective, albeit implicit, core PCE inflation objective of 2.2 percentage points for forecasts-based estimates, assuming that the FOMC in this period conducted policy as if it were following that estimated reaction function. Given the desirability of a cushion to help avoid problems associated with accidentally getting to the zero lower bound on the funds rate, this estimated figure arguably constitutes approximate “price stability.”

For estimates with gradualism (column 2), however, the results are less reasonable:

$$1.96 = 2.0 - .16\pi^*,$$

$$\pi^* = .04/.16 = .25 \text{ percent.}$$

This result for the implicit core PCE inflation objective seems too low to be plausible and casts doubt on the estimated coefficients for estimates, despite the nearly comparable fit in the sample period. The post-sample results for the prescribed funds rate target to be analyzed in the next section will be instructive in this regard because those predicted values would tend to be subject to overprediction if this estimated inflation objective underlying them is indeed too low.

1997–2003:Q1 or 1988–2003:Q1

Viewing 1997:Q1 to 2003:Q1 as a post-sample period for simulating the equations fit from 1988:Q1 to 1996:Q1 suggests that the outlook of the Board members and Reserve Bank presidents implicitly influenced to a significant degree how the FOMC has set policy since 1996 in much the same way as the outlook did before. From this perspective, the Committee again has acted as if it retained the same goal for inflation and preference for gradualism. The one important difference is that the Committee has evidently compared its outlook for unemployment to a generally lower and lower implicit estimate of the long-run equilibrium for unemployment—its natural rate or NAIRU.

The results of post-sample simulations over 1997:Q1–2003:Q1 in table 29 reveal that, in terms of minimizing the errors of the implicit reaction function fit over the previous nine years, the use of forecasts clearly outperforms the use of estimates. The out-of-sample root mean squared error for the equation using forecasts of inflation and the unemployment gap with gradualism (column

Table 29
Implicit Policy Reaction to Inflation and the Unemployment Gap:
1988:Q1–1996:Q3 Sample and Post-Sample Analysis for 1997:Q1–2003:Q1

Statistic	Basis of regression					
	Estimates		Forecasts		Both	
	(1)	(2)	(3)	(4)	(5)	(6)
Sample, 1988:Q1–1996:Q3						
Mean error	0	0	0	0	0	0
SEE	.66	.40	.72	.38	.68	.39
Post-Sample, 1997:Q1–2003:Q1						
Mean error	-.04	-.48	.71	-.08	.18	-.16
RMSE	.44	.66	.90	.48	.47	.47

NOTE. The columns of the table correspond to the columns in table 28. The specification of each reaction function also follows that used in table 28. Mean errors (ME) and standard errors of estimates (SEE) for reaction functions are estimated over 1988:Q1–1996:Q3. These reaction functions are simulated out of sample from 1997:Q1 through 2003:Q1. The out-of-sample mean errors and root mean square errors (RMSE) corresponding to each reaction function are then computed.

4) is only 0.48 percentage point, not much above the earlier in-sample standard error of 0.38 percentage point. The mean error is only -0.08 percentage point.

By contrast, the root mean squared error of the equation with estimates for these variables and gradualism is noticeably higher at 0.66 percentage point, with an appreciable mean error of -0.48 percentage point.²⁴⁴ The results for the equation that uses the two-to-one weights on forecasts versus estimates, as determined in the sample period (column 6, where $\phi = 0.64$), however, has summary statistics comparable to the forecasts alone (RMSE = 0.47 and ME = -0.16). This similarity suggests that estimates can play a supporting role.

Chart 14 gives the basic data, and chart 15 provides a visual rationale of the message of table 29. The prescription for the funds rate using estimates goes pretty far off in the late 1990s compared with the actual Committee behavior, whereas the prescription using forecasts is a lot closer. Both approaches overpredict the targeted funds rate during the sharp easing episode of 2001, but both out-of-sample simulations come back on track in the second half of 2002. The top panel of chart 16 repeats exactly these results over both the sample and the subsequent post-sample periods.

Given the Committee's dual legislative objectives, the desired inflation rate and estimated natural rate of unemployment are the implicit empirical representations of those dual goals.

244. The good out-of-sample summary statistics obtained for the equation without gradualism (column 1) seem to be a fluke.

Chart 14
Inflation and the Unemployment Gap
1997:Q1 - 2003:Q1

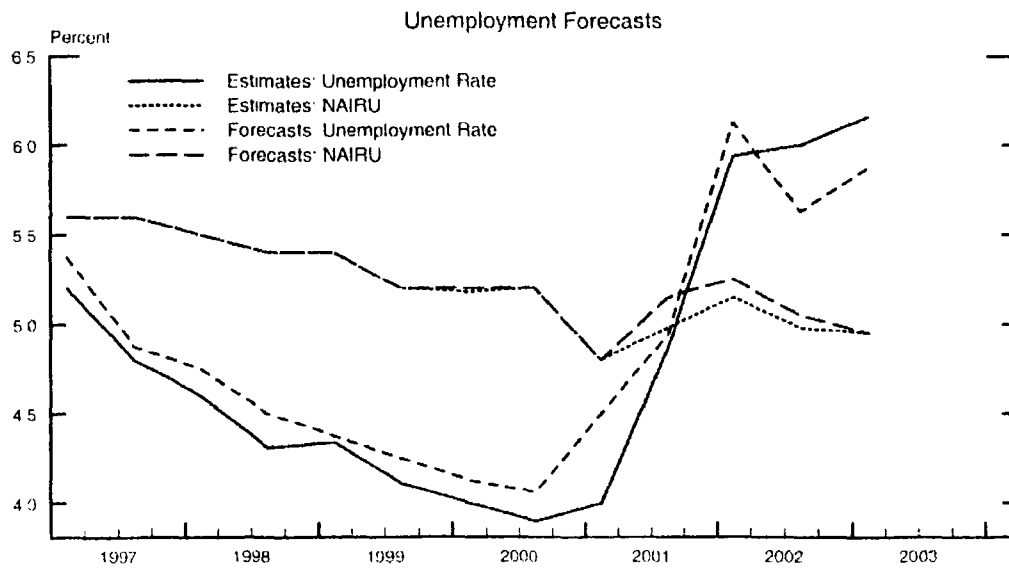
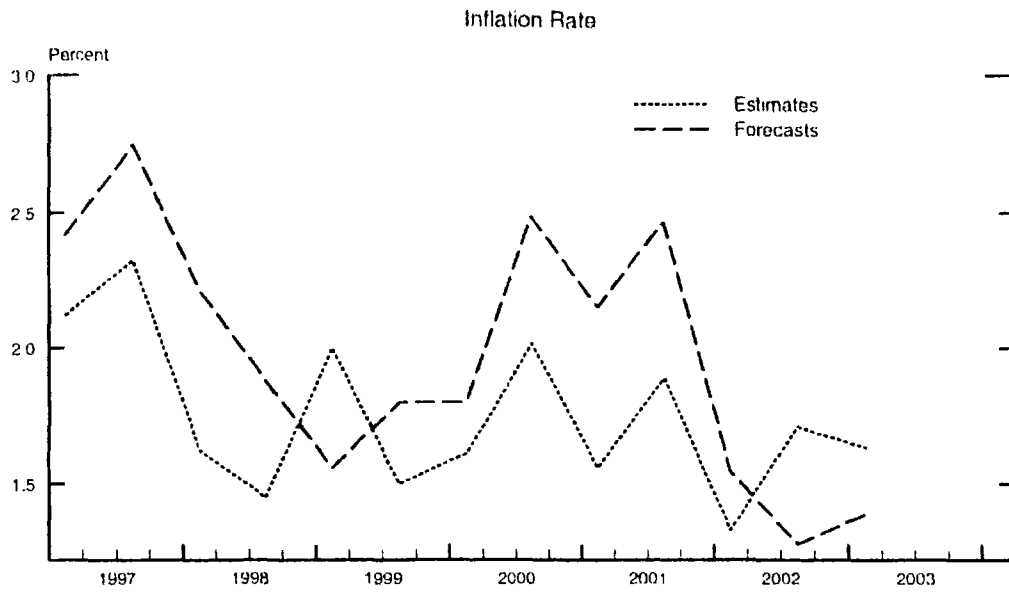


Chart 15
Fit Based on Inflation and the Unemployment Gap
1997:Q1 - 2003:Q1

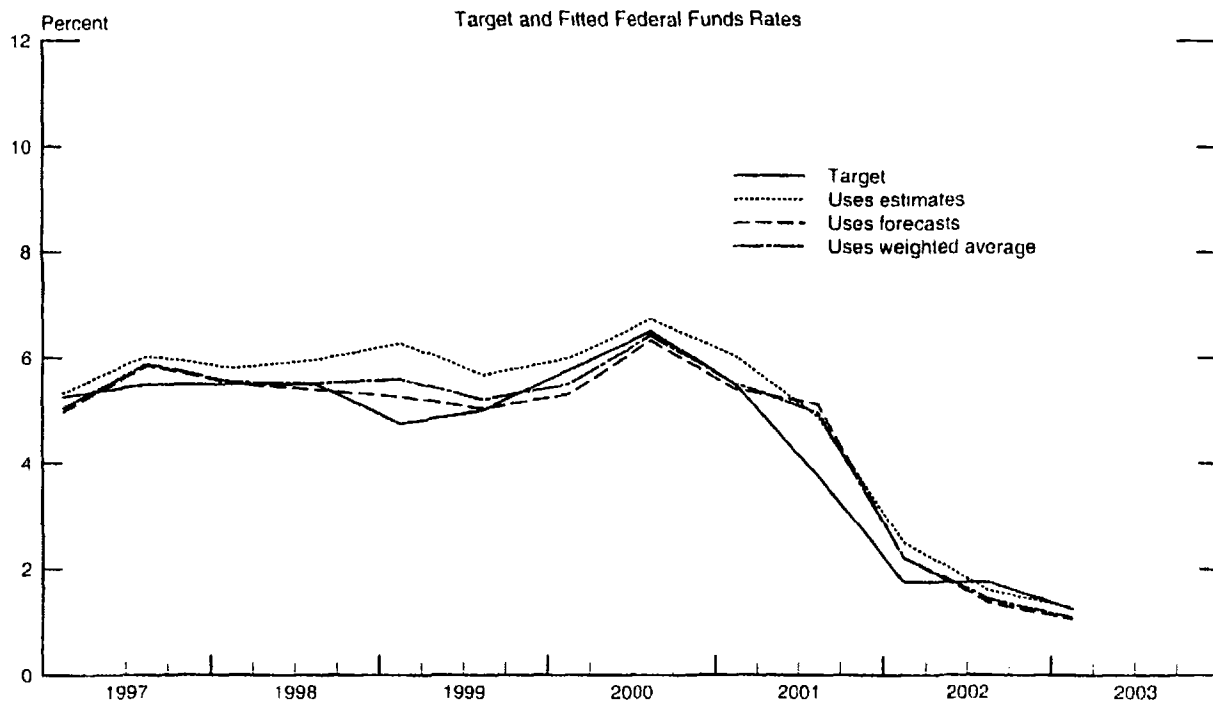
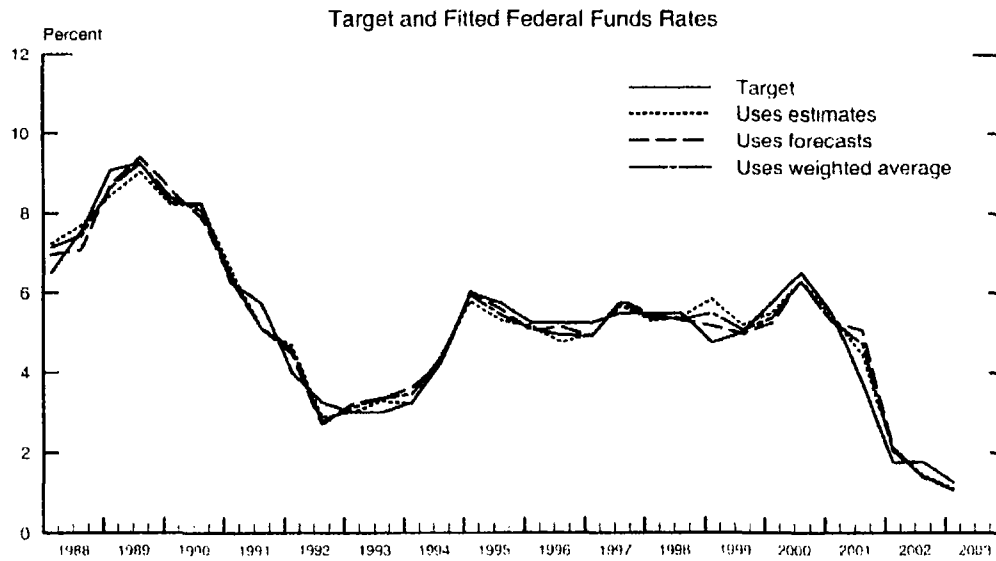
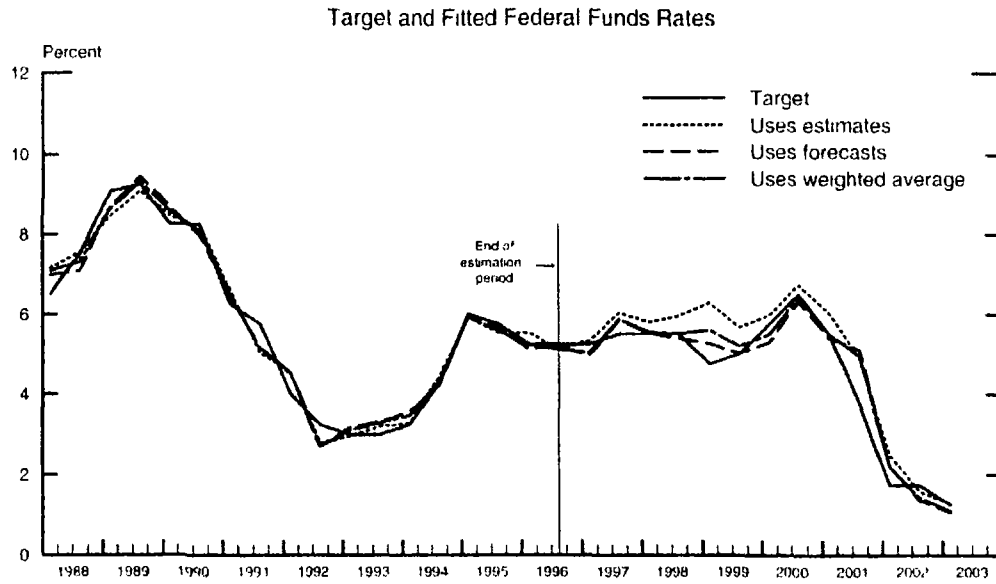


Chart 16
Fit Based on Inflation and the Unemployment Gap
1988:Q1 - 2003:Q1



Because the estimated implicit reaction functions use FOMC members' own forecasts out almost a year of inflation and unemployment relative to those two goals, it seems highly implausible that any important considerations about objectives have been excluded. Therefore, it is doubtful that any such omissions could give rise to serial correlation of forecast errors in some important, but unidentified, objective variables that could produce the type of strings of deviations of the funds rate from its long-run prescription that could masquerade as gradualism—that is, as true partial adjustment of the federal funds rate. To be sure, other phenomena could in principle give rise to a smoothly changing nominal funds rate, such as a long-run equilibrium real short-term interest rate (r^*) that has varied smoothly over time. However, in practice all the “reaction functions” estimated or simulated in the present study, which generally seem to provide an adequate “as if” explanation for policy settings, can be taken to assume that the FOMC’s perception of the equilibrium real interest rate remains at a constant r^* .

The earlier results, however, essentially are contradicted by the bottom panel of chart 16. This panel indicates that, when all the years since 1987 are used as the sample period, the equation with estimates now fits the actual funds rate just as well as the one with forecasts. Similarly, in the bottom panel, the prescription derived from an equation that uses an equally weighted combination of estimates and forecasts, which is estimated below, does just as well to the naked eye as using either one individually.

Table 30 contains the statistical results justifying these impressions. One notable finding is the *stability* of all the coefficients for the equation using forecasts (column 4) compared with the

Table 30
Implicit Policy Reaction to Inflation and the Unemployment Gap, 1988:Q1–2003:Q1

Coefficient and statistic	Basis of regression					
	Estimates		Forecasts		Both	
	(1)	(2)	(3)	(4)	(5)	(6)
a_0	1.41	1.09	.73	.18	1.26	.60
	.27	.33	.35	.43	.33	.41
a_π	1.28	1.35	1.52	1.66	1.33	1.52
	.09	.10	.11	.13	.11	.13
a_z	-1.84	-2.11	-1.60	-2.10	-1.82	-2.11
	.12	.16	.16	.22	.13	.18
ρ	0	.34	0	.43	0	.37
		.07		.07		.07
ϕ	0	0	1	1	.18	.52
					.24	.25
\bar{R}^2	.92	.96	.89	.96	.92	.96
SEE	.56	.43	.66	.43	.57	.41
DW	1.44	2.00	1.35	2.17	1.42	2.16

NOTE. This table shows estimates of the reaction function shown in table 28 but for a longer period.

coefficients we saw in table 28 for the first subperiod above. Another notable result is the appreciable *revisions* to the analogous coefficients for estimates (column 2), which are required to make the equation with estimates fit just as well as the one with forecasts over the entire period since 1987.

The estimate of the optimal weights on estimates and forecasts using all the years in the sample period is even ($\phi = .52$). Indeed, the standard error of this combination regression is the lowest of all. Thus, based on these results, it is impossible to reject the idea that the Committee since 1987 was acting as if it were implicitly weighting estimates and forecasts equally in setting the intended funds rate. This result is a rather startling, considering the out-of-sample performance we examined earlier, but it accords with my own intuition for the past six years or so.

In summary, based on statistical analysis, this section initially suggested that during the years from 1997 to early 2003 the Committee continued to design monetary policy mainly preemptively. Indeed, the section first indicated that the Committee acted as if it were following in the 1997–February 2003 period the same systematic policy structure based on the outlook for inflation and unemployment gaps that it seemed to have followed from 1990 to 1996, and perhaps even for a few years earlier as well. In post-sample simulations, the reaction function with gradualism that best captures the Committee's implicit behavior in terms of the closest prediction of the actual funds rate, as gauged either by the average miss or the squared deviation without regard to sign, is the one that relies on forecasts three quarters ahead. By contrast, the prediction of the funds rate based on contemporaneous-quarter estimates with gradualism goes astray in the late 1990s in post-sample simulation, and the relative out-of-sample performance of this approach is clearly wanting.

However, the section went on to point out that estimates attain an equal footing with forecasts when the whole 1988:Q1 to 2003:Q1 period is used as the sample period. The coefficients in the estimated equation for estimates for the entire period revise enough to give a fit that is just as good as that for forecasts, for which the coefficients are much more stable. Indeed, the estimated weight on each of the two is about 0.5 with this way of looking at the FOMC's implicit behavior; that is, according to this statistical analysis, the Committee seems to have examined both estimates and forecasts to about the same extent when the period of 1997 to early 2003 is added to the sample.

Summary of Evolving Policy Design

The reader who has gotten this far has demonstrated praiseworthy patience but may appreciate a concise summary of the reaction functions uncovered during the various eras. Table 31 summarizes the essential statistics detailed in the sections of this chapter. The table presents the design principles implicitly put into effect by the FOMC over time—that is, the reaction function that one would expect to find in the data if the FOMC had actually been implementing that particular one during each of the various periods. The table's separate columns, all of which apply to semiannual periods, represent the main stages of the FOMC's policy design. However, as we have seen, in some cases distinct borderlines between adjacent eras cannot be drawn:

Table 31
Implicit Policy Reaction to Inflation and Resource Use

Coefficient and statistic	1969:Q1–1979:Q2	1979:Q4–1982:Q2	1980:Q1–1987:Q3
	Regression on forecasts (1)	Calibration with estimates (2)	Regression on outcomes (3)
a_0	11.37		1.69
	1.32		.84
$a_{\pi_{t-1}|t}$			1.54
			.12
$a_{\pi_t|t}$		1.20	
$a_{\pi_{t+3}|t}$	1.52		
	.24		
$a_{\pi_{\tau}|t}$			
$a_{q_{t-1}|t}$			.32
			.13
$a_{q_t|t}$		.90	
$a_{u_t|t}$			
$a_{u_{t+3}|t}$	-2.04		
	.30		
$a_{z_t|t}$			
$a_{z_{t+3}|t}$			
$a_{z_{\tau}|t}$			
ρ	.35	.21	0
ϕ	1	0	0
\bar{R}^2	.89		.92
SEE	.75		1.12
DW			2.54
ME			
RMSE			

Notes appear after table.

Table 31—Continued
Implicit Policy Reaction to Inflation and Resource Use

Coefficient and statistic	1988:Q1–1996:Q3			1988:Q1–2003:Q1		
	Basis of regression			Basis of regression		
	Estimates (4)	Forecasts (5)	Both (6)	Estimates (7)	Forecasts (8)	Both (9)
a_0	1.96	.17	.70	1.09	.18	.60
	.70	.82	.96	.33	.43	.41
$a_{\pi_{t-1}|t}$						
$a_{\pi|t}$	1.16			1.35		
	.18			.10		
$a_{\pi_{t+3}|t}$		1.68			1.66	
		.22			.13	
$a_{\pi_{\tau}|t}$			1.52			1.52
			.26			.13
$a_{q_{t-1}|t}$						
$a_{q_{t|t}}$						
$a_{u_{t|t}}$						
$a_{u_{t+3}|t}$						
$a_{z_{t|t}}$	-2.41			-2.11		
	.27			.16		
$a_{z_{t+3}|t}$		-2.20			-2.10	
		.35			.22	
$a_{z_{\tau}|t}$			-2.28			-2.11
			.32			.18
ρ	.42	.47	.44	.34	.43	.37
	.08	.08	.08	.07	.07	.07
ϕ	0	1	.64	0	1	.52
			.36			.25
\bar{R}^2	.96	.97	.97	.96	.96	.96
SEE	.40	.38	.39	.43	.43	.41
DW	2.59	2.71	2.68	2.00	2.17	2.16
	Post-Sample: 1997:Q1–2003:Q1					
ME	-0.48	-0.08	-0.16			
RMSE	.66	.48	.47			

Notes to Table 31

Blank data cells are not applicable.

Regression results are taken from the estimation of the general reaction function

$$f_t = (1 - \rho)[r^* - (a_\pi - 1)\pi^* - a_x x^* + a_\pi \pi_{\tau|t} + a_x x_{\tau|t}] + \rho f_{t-2},$$

where $\pi_{\tau|t} \equiv (1 - \phi)\pi_{t-\tau|t} + \phi\pi_{t+3|t}$, $x_{\tau|t} \equiv (1 - \phi)x_{t-\tau|t} + \phi x_{t+3|t}$, $\tau = 0$ or 1 , and $0 \leq \phi \leq 1$. The term f denotes the intended federal funds rate; π , the inflation rate over four quarters; π^* , the constant inflation target; x , a measure of economic activity; and x^* , a measure of productive capacity. The term $r^* - (a_\pi - 1)\pi^* - a_x x^*$ is estimated as a constant a_0 when the measure of productive capacity x^* is assumed to be invariant (columns 1 and 3). If productive capacity varies over time (that is, $x^* \equiv x_{\tau|t}^*$), it helps form the term $x_{\tau|t} - x_{\tau|t}^*$, and the constant a_0 becomes $r^* - (a_\pi - 1)\pi^*$ (columns 4 - 9).

Two measures of resource use are employed: (1) the gap between the growth rate of real output and the growth rate of potential output and (2) the gap between the unemployment rate and the NAIRU. The coefficient a_q measures the long-run response of the policy rate to the difference between the rates of actual and potential output growth; a_u measures the long-run response to the difference between the unemployment rate and a *constant* NAIRU; and a_z measures the long-run response to an unemployment gap that includes a *time-varying* NAIRU. The choice of which resource measure to show in this table has been determined by the availability of real-time estimates of the NAIRU and the goodness of fit. The coefficient a_π measures the long-run response to the inflation term in the reaction function.

Each coefficient a_π and a_x in the table has a time subscript. In column 3, $i = 1$, and the subscript $t - 1|t$ denotes the one-quarter lagged value as available at time t to policymakers. Because it is a lagged value, this term is referred to as an outcome. In columns 2, 4, 6, 7, and 8, $i = 0$, and the subscript $t|t$ denotes the estimate of the current-quarter value made at time t . In columns 1, 5, 6, 8, and 9, $t + 3|t$ denotes the three-quarter-ahead forecast made on information available in time t . The parameter ρ indicates the weight placed on the intended funds rate lagged two quarters. The parameter ϕ indicates the weight placed on outcomes or estimates versus forecasts. In columns 2, 3, 4, and 7, ϕ was set to zero; in columns 1, 5, and 8, it was set to 1; and in columns 6 and 9, it was estimated. A weight closer to one suggests that forecasts are relatively more important, and a weight closer to zero suggests the opposite. Standard errors are shown below each coefficient.

For columns 3 - 9, the reaction functions were fit or simulated with semiannual data. The forecasts were taken from the Board's Monetary Policy Report to the Congress, which is released in the middle to the end of February and July. Real-time estimates of inflation, the output growth rate, and the unemployment rate were taken from the Greenbooks issued just before the publication of the Monetary Policy Report. Real-time estimates or forecasts of the NAIRU were taken from internal Board staff memoranda. The first column reports results estimated with quarterly data. In this period, 1969:Q1 - 1979:Q2, forecasts of FOMC members were not available, so Greenbook forecasts were used.

In columns 4, 5, and 6, results are reported from post-sample simulations for each specification of the reaction function. The mean error (ME) and the root mean square error (RMSE) are given.

In column 2, the results were derived analytically from a model in which policymakers target M1 via nonborrowed reserves. This reaction function was calibrated with estimates made in the early 1980s for a variety of relevant monetary relationships. The model implies a Taylor-like function that treats the federal funds rate as the dependent variable and two-quarter rates of inflation and output growth ending in the current quarter as the independent variables. The implied coefficients for the Taylor-like function are nonlinear combinations of the coefficients in the M1-targeting model.

- 1969:Q1 to 1979:Q2 (column 1): using implicit forecasts of inflation relative to a low implicit inflation target and of unemployment relative to an implicit estimate of the NAIRU, combined with gradually adjusting the federal funds rate, or employing interest-rate smoothing.
- 1979:Q4 to 1982:Q2 (column 2): attempting explicitly to reduce trend M1 growth to its steady-state rate by operating on nonborrowed reserves, while making judgmental adjustments to the path for nonborrowed reserves to reinforce the automatic mechanism and downgrading gradualism in policy implementation.
- 1980:Q1 to 1987:Q3 (column 3): concentrating, albeit more implicitly, on realized outcomes for inflation relative to a very low implicit inflation objective and for real economic growth relative to an implicit estimate of the growth rate of potential output, without any gradualism.
- 1988:Q1 to 1996:Q3 (column 6): still focusing on inflation relative to an implicit low objective while also gradually transitioning in the late 1980s to implicitly examining the level gap for unemployment relative to an implicit time-varying estimate of the effective NAIRU and putting somewhat greater weight on forecasts of inflation and unemployment gaps than on estimates of their current levels, while restoring the gradual adjustment of the funds rate target.
- Either 1997:Q1 to 2003:Q1 (two bottom rows of column 6) or 1988:Q1 to 2003:Q1 (column 9): in the former, continuing after 1996 to apply that somewhat higher implied weight on the implicit forecasts of gaps for inflation and unemployment compared with estimates of their contemporaneous values, while retaining gradualism; in the latter, while maintaining gradualism, continuing after 1996 to put equal weight on the outcomes versus forecasts of these two gaps, as in retrospect also turns out to have been the case from 1987 to 1996. The statistical tools of macroeconomics unfortunately are too blunt to distinguish which of the two best describes the design principles implicitly applied during the past fifteen years.

VII. CONCLUSION

The foregoing chronology of the evolution of FOMC communication procedures suggests that many of the reforms were motivated in important measure by a desire to communicate more clearly to the public and to the markets. But many steps through May 1999 also were motivated by a desire to avoid the repercussions of leaks, even inadvertent ones, of previously confidential FOMC information. One could argue that, because less is now left to leak, the communication policy now may come closer to a stable equilibrium from this perspective.

The fundamental approach to monetary policy of targeting the federal funds rate also seems well ensconced, which would preclude the type of alteration to operating procedures that could give rise to changes in transparency practices. This viewpoint, however, may be too oriented to the present time and circumstances. The history of the Federal Reserve is replete with changes in policy design and operating procedures from one decade to the next. One can envision the Committee moving toward new approaches to its policy, which may well involve revisions to its communication procedures. For example, adopting some variant of an "inflation targeting" regime would surely alter the nature of the FOMC's communication with the public and the Congress. Even a gradual evolution of design and operating procedures could at some point significantly affect the FOMC's transparency practices, although in ways that are now unknowable.