

**DOES MONETARY POLICY MATTER?  
THE NARRATIVE APPROACH AFTER 35 YEARS**

**ONLINE APPENDIX A:  
NARRATIVE EVIDENCE**

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In this appendix, we describe in more detail our methods for identifying monetary policy shocks from the narrative record. We also provide detailed summaries of the evidence and reasoning behind our classification of the ten monetary policy shocks we identify in the period 1946–2016. We also discuss the evidence for our tentative identification of an eleventh shock in 2022.

## I. METHODS

### SOURCES

For this study of monetary policy shocks, we rely on the most detailed narrative sources of information available on the monetary policy decisions of the Federal Open Market Committee (FOMC).<sup>1</sup> For the period before 1967, this source is referred to as the *Historical Minutes* on the Federal Reserve website. It is titled *Minutes of Federal Open Market Committee* in the original bound volumes. These *Minutes* are highly detailed descriptions of the statements and discussion at each FOMC meeting. A typical one-day meeting would have approximately 50 to 75 pages of description. The *Minutes* also include the statements of various staff members, such as the open market manager and the staff economists, as well as occasional prepared statements by members of the FOMC. The descriptions read like lightly edited paraphrases of direct quotations. Until 1964, these *Minutes* were highly confidential and not released to the public.

In 1964, the *Minutes* for all FOMC meetings from 1936 through 1960 were released. Though not entirely formal, it was anticipated that the subsequent *Minutes* would be released with a five-year lag. In fact, the *Minutes* were released somewhat erratically; for example, those for 1962–1965 were all released in January 1970. In 1967, following the passage of the Freedom of Information Act (FOIA), the FOMC decided to separate out a small amount of the material in the *Minutes* and call them the Minutes of Actions. The remaining material, which as far as we can tell included everything in the previous *Minutes*, was put into a new document call the *Memorandum of Discussion*. This is the source we use for June 1967 through the March 15–16, 1976 FOMC meeting. There is no discernible difference between the *Minutes* and the *Memoranda of Discussion* in terms of content, style, level of detail, and frankness. The meeting records do grow in length somewhat over time, but that seems to correspond mainly to a growing length of meetings, not a difference in procedures. The understanding was that the *Memoranda of Discussion* would not be subject to FOIA requests, but would be released with a five-year lag.

In 1976, the Federal Reserve initially lost a court case involving a FOIA request for the *Memoranda of Discussion*. In response, the FOMC discontinued the *Memoranda*. It did, however, begin recording the meetings and preparing a transcript. Until the existence of the *Transcripts* back to 1976 was revealed by Alan Greenspan in October 1993, FOMC members either did not know about them or assumed they would remain secret. The Federal Reserve then adopted a policy of releasing the *Transcripts* with a five-year lag. The *Transcripts* are the narrative source we use for the March 29, 1976 FOMC meeting through the end of our sample in 2016.

For the period before 1964 and between 1976 and 1993, FOMC members would have expected the records of their deliberations to remain secret. As a result, it is reasonable to assume that FOMC members spoke frankly at meetings. We also have no evidence that the paraphrases used in the *Minutes* and the *Memoranda of Discussion* covered up or distorted what was said in

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<sup>1</sup> All of these materials are available on the Federal Reserve website, [https://www.federalreserve.gov/monetarypolicy/fomc\\_historical.htm](https://www.federalreserve.gov/monetarypolicy/fomc_historical.htm).

the discussion. These sources include many passages that one would likely not have included if the aim was to sanitize the record. Likewise, the only obvious deletions in the *Transcripts* are the names of some companies and individuals and some information about international monetary transactions.

For the period between 1964 and 1976 and after late 1993, FOMC members would have expected their deliberations to have eventually been made public. Our hope is that five-year lag ameliorated any discussion-limiting effects of the public release. It does, however, appear that the knowledge that verbatim transcripts would eventually be released resulted in longer, more clearly prepared statements by FOMC members. This does not necessarily suggest that the discussion was less frank—the statements may just be more polished. But it does mean that there was less informal back and forth and fewer spontaneous (and thus unguarded) statements.<sup>2</sup>

We limit ourselves almost entirely to these three sources: the *Minutes*, the *Memoranda of Discussion*, and the *Transcripts*. In the summaries of particular episodes below, we cite the sources of quotations just by the meeting date and page number; it is to be understood that we use whichever of the three sources is available for the period.<sup>3</sup> We also occasionally consult the annual report of the Manager of the System Open Market Account to check the final technical details implicit in the agreed-upon directive, because it can sometimes be difficult to piece together the final target for some variables.<sup>4</sup> Likewise, we occasionally find it helpful to consult the *Annual Report of the Board of Governors of the Federal Reserve System*, which contains discussion of legislation as well as the “Record of Policy Actions of the Federal Open Market Committee” for all meetings through 1992.

The final subsection of this appendix presents a preliminary analysis of monetary policy in 2022. Because the transcripts of the 2022 meetings are not yet available (and will not be released until 2028), we rely on the “Minutes of the Federal Open Market Committee” released three weeks after each meeting, plus an overview speech given by Federal Reserve Chair Jerome Powell in August 2022. The modern “Minutes” are distinct from the historical *Minutes* we use for the early part of our sample. They are much shorter, considerably less detailed, and not confidential, and are analogous to the “Record of Policy Actions of the Federal Open Market Committee” through 1992. Because of the change in source, our analysis of what appears to be a monetary policy shock in 2022 is tentative.

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<sup>2</sup> Meade and Stasavage (2008) and Hansen, McMahon, and Prat (2018) find some changes in the meetings after participants learned that transcripts would eventually be released, but no clear changes in the frankness of the discussion.

<sup>3</sup> Because the *Minutes* and *Memoranda of Discussion* are paraphrases rather than verbatim, in quoting from them we generally say that a speaker “said that” (or “commented that,” and so on) rather than “said,” followed by the quotation. In cases where we quote from a prepared statement that the speaker read and that was included in the *Minutes* or *Memoranda of Discussion*, we use just “said” (or “commented,” and so on) followed by the quotation.

<sup>4</sup> These reports are available in different places at different times. In the more distant past, they were published in the *Annual Report of the Board of Governors of the Federal Reserve System*. In the 1970s and 1980s, an edited version of the report was published in the *Federal Reserve Bank of New York Monthly Review* (later the *Federal Reserve Bank of New York Quarterly Review*) or the *Federal Reserve Bulletin*. After 1988, the annual reports are available on the Federal Reserve Bank of New York website, [https://www.newyorkfed.org/markets/annual\\_reports](https://www.newyorkfed.org/markets/annual_reports).

## APPROACH

An important step in narrative research is to read the sources in their entirety—not just around expected interesting periods. While we have done this, we did not read them in strict chronological order. Rather, we divided the source into multi-year batches, and assigned them to one of us to read. We thought it desirable to mix up the decades so that we each had experience with the entire sample. For a number of years, we both read the narrative source.

Our approach was to take notes on each meeting and to highlight quotations in the document. For periods where we saw a potential shock, we copied our highlighted quotations into a new document. This step enabled the person not doing the full reading to have a lengthy compendium of the most important narrative material. We then discussed the evidence until we agreed on a classification.

We then wrote a summary of each episode in which we identify a monetary shock. The summaries include a subset of the quotations that led to our conclusion, as well as our analysis and interpretation of the material. We try to make clear where we saw ambiguities and complications. We also discuss alternatives to the particular month that we assign to the shock. These summaries are presented in Section II of this appendix.

In evaluating the narrative record, we strove to identify the reasoning that carried the day. That is, we look for the prevailing majority view, not the view of members with unusual or extreme beliefs. Because the Federal Reserve Chair tends to be very influential, we put particular emphasis on the reasoning expressed by the Chair. In many eras, the Board staff made policy recommendations. Since these recommendations likely reflected the views of the Chair and influenced the views of FOMC members, we typically also consider them when deducing the prevailing view of the FOMC.

## DEFINITION AND CRITERIA

***Negative Shock.*** For a negative monetary policy shock, we look for times when monetary policymakers decided the current level of inflation was unacceptable, and they took actions to reduce it. We also look for signs that policymakers were willing to accept output consequences to bring inflation down. Each of these criteria serves a purpose.

The requirement that policymakers find the current rate of inflation unacceptable is designed to screen out policy actions taken when other factors are affecting output and inflation. We are not looking for times when policymakers see forces acting to raise inflation, and try to counteract them. Rather, we are looking for times when policymakers, at a relatively stable level of inflation, decide to try to reduce aggregate demand to lower it. Such episodes are less likely to suffer from omitted variable bias than situations where policymakers were trying to offset other influences on inflation, and so can provide more accurate estimates of the impact of changes in monetary policy.

The requirement that monetary policymakers take actions to reduce inflation is designed to ensure that policymakers are serious and not just engaging in ritual handwringing. The requirement that policymakers express a willingness to accept output consequences is similarly aimed at detecting seriousness. If policies such as a reduction in money growth or a rise in the federal funds rate are being used to reduce the prevailing level of inflation in a serious way, policymakers following conventional macroeconomic models should expect adverse consequences for output and unemployment. Thus, statements about possible output effects

imply non-trivial aggregate demand contraction. The behavior of output following such serious shocks is likely to provide a cleaner test of the effects of monetary policy contraction.

***Positive Shock.*** Our criteria for a positive monetary policy shock are that policymakers feel the current rate of unemployment is roughly stable, but too high, and they decide to take actions to reduce it. Furthermore, policymakers acknowledge that the actions could cause inflation to rise.

The requirement that policymakers feel the unemployment rate is stable, as well as unacceptably high, is important for avoiding severe omitted variable bias. If the unemployment rate were rising, the effects of monetary policy actions to lower unemployment would be hard to separate from the effects of the forces causing unemployment to rise in the first place. If unemployment were falling, it would be hard to separate the effects of monetary policy from the normal dynamics of cyclical recovery. Actions taken to reduce unemployment when the unemployment rate is reasonably stable are likely to provide a less biased test of the effects of expansionary monetary policy.

As with negative monetary policy shocks, the requirements that monetary policymakers take actions and express a willingness to accept a rise in inflation are designed to ensure that policymakers are serious. We are looking for times when policy is genuinely trying to shift out the aggregate demand curve. Concern that inflation may rise likely implies that the actions are being taken near full employment. As a result, if output rises afterward, it likely reflects the impact of monetary expansion, not normal cyclical recovery.

### **DATING THE SHOCK**

It is unusual for a shock to come out of the blue. Typically, one sees in the narrative record a somewhat gradual change in views about the acceptable rate of inflation or unemployment and desired policy actions. Our approach is to place the date of the shock at the earliest point where it is clear that our criteria are satisfied. The most common pattern is that it takes two or three meetings before views have shifted from general concern about inflation or unemployment to clearly satisfying our criteria. We also check that the criteria continue to be satisfied at least a few meetings afterward as well. This is a way of ensuring that the change is significant and not a one-time aberration.

We take into account various factors when choosing a particular meeting for the date of the shock. One is the clarity of the discussion. Do members make statements that clearly fit our criteria? A second is the strength of the policy action. Does the FOMC take aggressive action or make strong public statements? Do they change their operating procedures in some formal way? A third is whether a special meeting was called. This is sometimes a signal of a clear change in policy.

Another issue related to dating the shock is deciding what counts as a new shock. Our general rule is to not date a new shock if policymakers just continue meeting our criteria for a shock. However, if the objectives of policymakers change and policy changes direction strongly, and the new direction lasts for a sustained period (at least several months), we say that the next expression of views and actions that meet our criteria for a shock constitute a new shock.

Table A1 shows the dates of the monetary policy shocks we identify from the narrative sources.

Table A1  
Dates of Monetary Policy Shocks

Type	Monthly	Quarterly
Contractionary	October 1947	1947:4
Contractionary	August 1955	1955:3
Contractionary	September 1958	1958:3
Contractionary	December 1968	1968:4
Expansionary	January 1972	1972:1
Contractionary	April 1974	1974:2
Contractionary	August 1978	1978:3
Contractionary	October 1979	1979:4
Contractionary	May 1981	1981:2
Contractionary	December 1988	1988:4

Note: As described in the final part of the appendix, we also tentatively identify a contractionary monetary policy shock in 2022, most likely in July 2022 (and thus in 2022:3 at a quarterly frequency).

## II. NARRATIVE ANALYSIS OF PARTICULAR EPISODES

### OCTOBER 1947

It is clear that starting in roughly the middle of 1947, the Federal Reserve wanted to reduce inflation and was willing to accept significant output costs to do so. The first strong evidence for this conclusion comes from the June 1947 meeting of the full FOMC. (In this period, the full FOMC met only about five times per year, with frequent meetings of an executive committee at other times.) The *Minutes* described the views of Woodlief Thomas (the committee's chief economist) at length (6/5–6/1947, pp. 15–16):

Mr. Thomas stated that the picture painted by the four statements of the economists was one of inflation, the kind of condition that the System, in considering proper fiscal and monetary policies during the war, had sought to avoid. ... He also said that the question was what should be done about the existing situation, and that while it appeared that the country was approaching or had passed the peak of inflation the downturn was not evident enough at this time to justify concern about bolstering the economy against a recession. It was his opinion that throughout the war and postwar period there had been too many fears of postwar deflation, with the result that actions which should have been taken to counteract inflation were not taken, because of the fear that they would result in contraction, and that, although any downturn should be taken care of at the proper time, the important thing at the moment was to stop abnormal pressures on the inflationary side.

The views of an associate economist were similar: “Mr. John H. Williams shared Mr. Thomas’ view .... He thought that there would and should be a mild recession which would be corrective in nature and would set the stage for a long period of balanced prosperity” (pp. 16–17).

At this time, however, the Federal Reserve was still pegging the entire term structure of interest rates on government debt. As a result, it took no immediate actions. Monetary policymakers had no desire to let long-term interest rates move, but they had been in discussions with the Treasury about allowing short-term rates to change. The pegging of short-term rates ended in July—the *Minutes* from August refer to “the termination by the Federal Open Market Committee of the purchase and resale arrangements on Treasury bills at the fixed rate of 3/8 per cent applicable to bills issued on or after July 10, announcement of which was made on July 3, 1947” (Executive Committee, 8/6/1947, p. 2).

The FOMC turned its attention to measures to halt inflation at its next full meeting. In the context of arguing against relying on tight monetary policy, Williams made clear that he believed tight policy had output costs: “He stated that the present situation was not one which could be dealt with satisfactorily by use of traditional monetary controls which might operate to bring about a deflation through reducing production, employment, and pay rolls” (10/6–7/1947, p. 7).

There followed “a discussion of actions that might be taken to combat the inflationary situation” (10/6–7/1947, p. 7). The outcome of this discussion was (pp. 11–13):

After consideration of the courses of action that were available, it was suggested that the following program be put in written form by the executive committee and discussed by Messrs. Eccles [Federal Reserve Chairman Marriner Eccles] and Sproul [President of the Federal Reserve Bank of New York and FOMC Vice Chairman Allan Sproul] with appropriate representatives of the Treasury. It was recognized that, in

addition to action by the Federal Open Market Committee, the program would require action by the Treasury, the Board of Governors, the Federal Reserve Banks and others ...:

1. Treasury cash balances would be used for the retirement of Government debt, particularly certificates and bills held in the System open market account, as a means of offsetting the effects of gold imports and exercising a tightening influence on the credit situation.

2. The short-term rate on Government securities would be increased to 1-1/8 per cent by the end of 1947. ...

3. Federal Reserve Bank discount rates would be increased in keeping with the increase in the rate on short-term Government securities.

4. Reserve requirements of member banks in central reserve cities would be increased in three 2 per cent steps.

5. A statement would be issued by the Board of Governors emphasizing, in connection with the termination of Regulation W on November 1, the danger of more liberal instalment credit terms and of a further growth in the outstanding volume of consumer credit. ...

6. The Board of Governors, the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Association of Supervisors of State Banks would issue a statement pointing out the danger of further over-all expansion of bank credit through the medium of bank loans.

The *Minutes* of the Executive Committee meeting immediately following this meeting referred to “the program agreed upon at the meeting of the Federal Open Market Committee for dealing with the inflationary situation” (Executive Committee, 10/6–7/1947, 10/7 session, p. 3).

A week later, the Executive Committee approved a letter to the Treasury Secretary that stated, “The existing situation ... spells continuing pressure toward higher prices,” and, “The Committee feels ... that further credit expansion would augment the existing forces of inflation. The situation is now so critical as to warrant our taking every action, within the power of the Treasury and the Federal Reserve System, to eliminate or moderate excessive credit expansion” (Executive Committee, 10/14/1947, p. 4).

The evidence from meetings in December and January confirms there was a shift to anti-inflationary policy in October. At the December meeting of the full FOMC, in the context of a discussion of higher interest rates, Eccles said that “the System should not be disturbed by a situation it had intentionally helped to bring about” (12/9/1947, p. 7). In addition, “Mr. Rouse [Robert Rouse, Manager of the System Open Market Account] stated that he agreed that the program followed should be one of keeping unremitting pressure on the reserve position of member banks during the first six months of 1948” (p. 15). The *Minutes* went on to report, “Chairman Eccles indicated that he would not be willing to follow Mr. Rouse’s suggestion unless action were also taken by the Board of Governors during the period to increase reserve requirements of banks in central reserve cities” (p. 15); those requirements were increased in February.

At a meeting in January 1948, Rouse’s statement referred to “a program of credit control developed at the full Federal Open Market Committee on October 7, 1947,” and to “repressive credit policy” (Executive Committee, 1/20/1948, p. 2). At that meeting, Eccles “felt that the Treasury’s cash position during the first quarter should be used in such manner as to put as much

pressure as possible on the reserve position of member banks with the hope that such a program might be effective in counteracting the inflationary trend” (p. 13). The *Minutes* went on to say that Sproul “questioned whether the program proposed by Chairman Eccles would be effective in stemming the inflationary trend,” but that “Chairman Eccles stated that his view was different from that expressed by Mr. Sproul” (p. 15).

Further evidence comes from February 1948. The *Minutes* of the Executive Committee meeting reported a letter to the Secretary of the Treasury that included: “It is the committee’s opinion that Federal Reserve and Treasury debt management policies during the immediate future, and unless and until conditions change, should be determined with a view to placing continuing and persistent restraint upon the expansion of bank credit which is contributing to existing strong inflationary forces” (Executive Committee, 2/26/1948, p. 2). At the meeting of the full FOMC the next day, Thomas made clear that the goal of the program was to stop inflation: “the recent sharp decline in prices of several commodities had weakened somewhat, for the time being at least, upward pressures on the general price level, but that in view of special circumstances bearing upon these selective price declines it should not be concluded that the underlying inflationary spiral of costs, prices, and incomes which characterized 1947 had ceased to operate” (2/27/1948, pp. 3–4). Alfred Williams (President of the Federal Reserve Bank of Philadelphia) made the same objective clear: “our general objective must be to maintain a large volume of production and employment in the United States while doing everything possible to stabilize or reduce prices” (p. 6).

In short, there is no doubt that in October 1947, the FOMC shifted to an anti-inflationary policy and that it was willing to accept have significant output costs. There are, however, several possible challenges to the view that this shift constitutes a negative monetary policy shock by our definition.

The first issue is whether the FOMC’s objective was to reduce inflation, rather than merely preventing it from rising. At times, the problem the Federal Reserve was facing was described along the lines of “accentuation of inflationary tendencies” (Executive Committee, 10/14/1947, p. 3), and its program referred to as just “anti-inflationary” (for example, 10/6–7/1947, p. 11). But it is clear that monetary policymakers in this period did not think in terms of changes in inflation; rather, they viewed any positive level of inflation as undesirable. For example, at the June 1947 meeting, Thomas argued for restrictive policy even though “it appeared that the country was approaching or had passed the peak of inflation” (6/5–6/1947, p. 16); in October, John Williams referred to “bring[ing] about a deflation” (10/6–7/1947, p. 7); the October letter to the Treasury Secretary described the problem as “continuing pressure toward higher prices” (Executive Committee, 10/14/1947, p. 4); and the February letter described it as “the continuance of inflation” (Executive Committee, 2/26/1948, p. 2). Thus it seems clear that the Federal Reserve’s objective was to eliminate inflation, not to prevent it from rising.

A second issue is whether monetary policymakers’ actions constituted monetary policy as conventionally understood. The program involved only modest increases in interest rates, and it included higher reserve requirements and jawboning banks to reduce lending. But both of these additional steps, although rarely used today, were viewed as standard tools of monetary policy in the early postwar decades. And small changes in interest rates were a common feature of shifts in monetary policy in those decades. Thus the behavior of the economy in this episode provides evidence about the impact of monetary policy broadly conceived. At the same time, the fact that the tools of policy were different is a consideration, in addition to the many other changes in the

financial system and the economy, suggesting caution in applying lessons from this episode to modern economies.

The third issue, which is somewhat related, is whether the Federal Reserve's actions were part of a broader anti-inflationary program, and thus problematic for isolating the effects of monetary policy. The description of the program from October states, "in addition to action by the Federal Open Market Committee, the program would require action by the Treasury, the Board of Governors, the Federal Reserve Banks and others" (10/6-7/1947, pp. 11-12). Closer inspection shows, however, that there were no significant actions other than the monetary policy changes. The coordination with the Board of Governors and the Federal Reserve banks referred to increases in the discount rate and reserve requirements and steps to discourage lending. And the coordination with the Treasury referred to the Treasury using its surplus to buy back debt from the Federal Reserve. Since the Federal Reserve could have achieved the same outcome using open-market operations if the Treasury had instead used the surplus to buy back debt in the open market, this coordination was not consequential. It is not clear why the Federal Reserve had a preference for the Treasury buying back its debt holdings directly.

The final issue is whether monetary policymakers believed the tools available to them were enough to have realistic prospects of reducing demand. In June 1947, in discussing possible increases in the short-term interest rate, Eccles "recognized that such an increase would not be effective in combating inflationary conditions and that any increase in rates for that purpose would have to be so large that it would completely upset the Government securities market" (6/5-6/1947, pp. 9-10). And in October, he "questioned the ability of the System to do much to affect the existing situation but said that there were steps that could be taken" (10/6-7/1947, p. 9). He also raised the possibility that the FOMC might want to prepare a statement "which would point out that the Congress could not expect the System, with the limited powers it now has, to prevent monetary and credit expansion" (p. 15).

Several considerations suggest, however, that monetary policymakers thought their tools could be effective in influencing demand. Importantly, the additional powers they discussed asking for were small. They did not have any desire to be allowed to let longer-term interest rates to rise; the tools they sought were only "legislation extending authority to increase the statutory reserve requirements of member banks and to require nonmember banks to hold additional reserves in an amount corresponding to the increase for member banks," along with "the re-establishment of control over the terms of consumer instalment credit" (*Annual Report of the Board of Governors of the Federal Reserve System, 1947*, pp. 8 and 10). And by October 1947, the FOMC appeared to view increases in short-term rates as an effective tool: "it was suggested that ... a further increase [in short-term rates] would be an important element in an over-all program" (10/6-7/1947, p. 13). By January 1948, as described above, Eccles explicitly disagreed when Sproul "questioned whether the program proposed by Chairman Eccles would be effective in stemming the inflationary trend" (Executive Committee, 1/20/1948, p. 15). He went on to describe a request for additional authority as only a backstop in the event that the plan did not work: "He added that, if this plan did not work, he would recommend to the Board of Governors that it make a special report to the Congress pointing out the dangers of the existing situation and stating that the means of correcting the situation were not available in any form other than to abandon the policy of supporting the Government security market which it was felt should not be done" (p. 16). In short, although monetary policymakers were not certain their tools would accomplish their goals, they thought they would be likely to do so.

## AUGUST 1955

Starting in about the middle of 1954, the FOMC gradually shifted to what it viewed as tighter policy as the economy recovered from the 1953–54 recession and as it became concerned about the possibility of inflation. Perhaps the strongest statement of concern before mid-1955 came from Federal Reserve Chairman William McChesney Martin, at a meeting of the full FOMC that he called in January 1955. In an unusual prepared statement, he said, “What we are wrestling with at the moment is the possibility that inflationary seeds may be germinating, and that when they come to full bloom it will be exceedingly difficult to restrain them” (1/11/1955, p. 7). He also said, “We are in the dilemma of not wanting to ‘nip recovery in the bud’ but we want to ‘nip inflation in the bud’” (p. 8).

However, consistent with Martin’s comments, over the first half of 1955 the FOMC did not perceive there to be actual inflation. The presentations from the staff were repeatedly characterized as reporting that “Average consumer prices have continued stable” (Executive Committee, 3/29/1955, p. 2), or, “Wholesale and consumer prices have shown little change in recent months” (Executive Committee, 5/24/1955, p. 4). The committee’s concern was therefore only with the possibility that inflation might break out. For example, in January, James Robertson (a member of the Board of Governors), echoing Martin’s view, was described as saying that “while he did not think the Committee was fighting inflation today, it was trying to prevent development of inflation” (1/11/1955, p. 18). Similarly, in June, Allan Sproul (President of the Federal Reserve Bank of New York and Vice Chairman of the FOMC) referred to “the likelihood that prices, after two years of stability, may now break out on the up-side, due to pressure from costs and anticipation of price rises by businessmen and consumers,” and he argued that “we shall have to be alert from here on to the need for further restraint; to signs of price and credit inflation” (6/22/1955, p. 44).

Monetary policymakers’ views changed over the second half of 1955. They started to see actual inflation in non-agricultural prices and wages (accompanied by declining agricultural prices). In August, associate economist Ralph Young reported: “Prices of industrial materials have continued upward in recent weeks and prices of finished goods show more frequent rises, but over-all these recent increases have been offset by declines, partly seasonal, of some farm and food products. The uptrend of industrial prices is now more general than at any time during the present upswing in general business” (8/2/1955, p. 6). In September, Young’s statement referred to “The considerable number of price advances occurring, with much talk of a more widespread price lifting to come” (9/14/1955, p. 3). And in November, it included, “Currently, the economy is at a stage of bulging, even inflationary, industrial prosperity. ... [T]he decline in farm prices would seem to have largely run its course. Continued over-all price stability on the basis of offsetting movements of farm and industrial prices is thus a less likely prospect,” and, “Industrial prices have been rising about 1 per cent a month since mid-year and already indicated and prospective increases appear likely to sustain this rate of advance in months immediately ahead” (11/16/1955, pp. 2–3 and 4).

In response to these developments, the FOMC shifted course to try to eliminate this inflation. In August, Martin read another prepared statement. He quoted a statement by Sproul from the previous meeting: “The danger signals of inventory accumulation outrunning sales expansion, *upward price movements*, production, material and employment bottlenecks, and excessive increases in bank credit and the money supply have not yet flashed red” (7/12/1955, p. 27; emphasis added). Martin went on to say: “I think personally that all the danger signals he

mentions are now flashing red. Inflation is a thief in the night and if we don't act promptly and decisively we will always be behind" (8/2/1955, p. 13). He also said, "We are faced with a wage cost push at a time of virtually full employment" (p. 14).

The other members of the committee who expressed views about inflation agreed almost unanimously that there was an inflation problem, though they were somewhat mixed about whether the problem was current inflation or the possibility of future inflation. C. Canby Balderston (Vice Chairman of the Board of Governors) referred to "the inflationary forces now loose" (8/2/1955, p. 33). Wilbur Fulton (President of the Federal Reserve Bank of Cleveland) said, "at the meeting of the Federal Open Market Committee on July 12 I expressed the view that inflation was already present inflation in a degree that was not readily discernible except from the 'feel of the situation'" (p. 15), and Chicago President Clifford Young reported that the banks' directors "agreed that inflation was here and that something should be done" (p. 16). Occupying a middle ground, Dallas President Watrous Irons discussed what would need to be done "if inflationary pressures develop *further* and persist" (p. 37; emphasis added); and Kansas City President H. Gavin Leedy "felt that if the figures are to be believed, the country is in a very serious economic situation inflation-wise," but also referred to "the very real *threat* of inflation" (pp. 37 and 38; emphasis added). Similarly, in a prepared statement, Sproul merely asked, "Whether the weight of evidence is now indicative of ... inflationary forces which have or are about to get out of hand?" He answered, "I recognize the strength and the risks of the present situation, but I do not know whether it is getting out of hand." (pp. 20 and 21). At the other end of the spectrum, Atlanta President Malcolm Bryan characterized inflation only as prospective, saying: "We can all agree that the economic situation is ebullient and presses on the comfortable capacity of the economy. It can thus be concluded that the apparent present trends in the economy simply extend themselves to over-reach comfortable capacity and that, accordingly, an inflation is inevitable in the absence of additional immediate, and substantial monetary restraint" (p. 23). And St. Louis President Delos Johns (whose district was relatively agricultural) "commented that ... there were sections and people in the Eighth District who would question the existence of any inflation" (p. 38).

Thus, although somewhat divided, the weight of views in the FOMC as a whole (including Martin) perceived current inflation as a serious problem. In keeping with this view, the committee changed the key phrase in its directive from "to fostering growth and stability in the economy by maintaining conditions in the money market that would avoid the development of unsustainable expansion" (7/12/1955, pp. 34–35) to simply "to restraining inflationary developments in the interest of sustainable economic growth" (8/2/1955, p. 49).

The FOMC's desire to combat inflation continued through the end of the year (and indeed, well into 1956). For example, at a meeting later in August, Martin (in yet another prepared statement) said, "I think the wage cost push is still with us and the psychology that that creates is still with us" (8/23/1955, p. 8), and Boston President Joseph Erickson "shared the Chairman's concern about inventory accumulations and about the wage cost factor and what might be happening to prices" (p. 24). In September, "Fulton said that there was an inflationary spirit throughout the entire district" (9/14/1955, p. 9). And in October, Balderston "said he continued to be concerned about the rise in industrial prices stemming from wage adjustments on the one hand and on the other from the fact that production is pressing on capacity in numerous industries" (10/25/1955, p. 20).

The committee was willing to accept significant output costs to get inflation under control. At the critical August 2 meeting, the *Minutes* described Leedy's views as being that their actions risked incurring costs, though he did not explicitly cite lower output: "He thought the time had come that the System should give an indication of its concern about the credit situation .... That could not be done without some risk as to its effects on the market, but in his opinion the System could never take action that would be effective without taking some risks" (8/2/1955, p. 38). At the next meeting, Martin also did not explicitly cite costs, but said, "What I was trying to say at the last meeting was that the action should be decisive and clear" (8/23/1955, p. 8). In October, Governor Mene Szyczak implied that policy should try to skirt the edge of causing a recession: "Mr. Szyczak thought that the present situation was one which called for continuing the present policy of tightness without allowing the tightness to become so severe as to be a cause, or to be cited as a cause, of a down turn in the economy, if such a down turn developed" (10/4/1955, p. 6). And in November, in a prepared statement, Robertson said, "I feel that there are inflationary pressures present which should be checked *now* by a firmer monetary policy—one firm enough to curtail spending and thus dampen price pressures" (11/16/1955, p. 20, emphasis in original).

The most extensive discussion of this issue came in March 1956, well after the shift in policy. Bryan said they faced a choice between "a substantial advance in prices, in which event the System would have to furnish the money to carry on the economy at a new high price level—an inflated level" and "the System would refuse to furnish the money to support that advance, in which case unemployment would be created and consumers would be unable to take the products of industry off the market." He came down firmly on the side of the second option: "he thought the System had no choice now. Easy money, or money as easy as the country has had it, should be out" (3/27/1956, p. 22). Later in the meeting, there was a long discussion among multiple members concerning the issue raised by Sproul of whether the policies needed to control inflation might be "so severe as to bring on substantial unemployment" and "Whether the System would have the assent of the Government and of the public in such a course" (pp. 32 and 33). The discussion concluded with Martin expressing his view: "Chairman Martin said that ... the Committee could not expect monetary policy to achieve all of the task. However, the threat of a wage-price spiral was so strong today that the System would be derelict in its duty and obligation if it did not do all that it could do" (p. 34).

This view was repeated in the official summary of the meeting released in the "Record of Policy Actions": "The Committee discussed the extent to which monetary policy might be used to combat an inflationary cost-price spiral and the risk of incurring temporary unemployment on the one hand, as against the risk of undermining the basis of sustained employment on the other. It was suggested that while monetary policy could not be expected to achieve all of the task of combating inflationary pressures, the System would be derelict in its duty if it did not exercise additional restraint in this situation" (*Annual Report of the Board of Governors of the Federal Reserve System*, 1956, p. 26).

The Federal Reserve did not conduct monetary policy in this period through simple instructions to the open market manager about a target for a specific variable, such as the federal funds rate. Nonetheless, it is clear that monetary policymakers were taking contractionary actions during these months. The discount rate (which was a central policy instrument at the time) was raised in three steps from 1½ percent to 2½ percent (by ¼ percentage point in April 1955, ½ point spread across the different Reserve Banks in August and September, and another ¼ point in November). The monthly average federal funds rate rose steadily, from 1.43 percent in May 1955, to 1.96 percent in August, to 2.35 percent in November. The rise in interest rates was an

intentional result of Federal Reserve actions. For example, in July, Young said, “Reflecting the strong credit demands and Federal Reserve policies, both short- and long-term interest rates have moved upward moderately in recent weeks” (7/12/1955, p. 24). Similarly, in September, Sproul referred to “the constructive influence of Federal Reserve actions” leading to “A gradual lessening of reserve availability, emphasized by increases in the cost of reserves” (9/14/1955, p. 13). An exchange at the end of the second meeting in October illustrates both that policymakers were taking actions that were likely to cause interest rates to rise and the vagueness of their guidance to the open market manager: “Mr. Robertson inquired what Mr. Sproul might have in mind as an average issuing rate on bills, and Mr. Sproul responded that he had no specific figure in mind although he would think the average issuing rate would move higher if the Committee policy were carried out in line with the discussion at this meeting” (10/25/1955, p. 24).

We conclude that there was a shift to anti-inflationary policy with a willingness to accept significant output costs in this period. The shift was gradual, and one can make a reasonable case for either August or September 1955 as the specific month to date the change. However, the largest changes occurred in August 1955. Martin’s rhetoric changed sharply at the August 2 meeting; his concerns had broad support; the Committee changed a key phrase in its directive; the increase in the federal funds rate from July to August was the largest over this period; and Martin expressed continued strong concern about inflation at the second meeting that month. We therefore date a contractionary monetary policy shock in August 1955.

The only subtlety we see concerning whether there was a shock in this episode involves the issue discussed above of whether monetary policymakers were only trying to prevent inflation from rising rather than reducing it. As we described, the weight of the committee (including, importantly, its Chairman) felt they were confronting actual, not prospective, inflation. Moreover, monetary policymakers clearly wanted to reduce both non-agricultural and wage inflation. Thus, it seems appropriate to classify the episode as one where the goal was to actively reduce aggregate demand to lower output and inflation. This would be analogous to a situation in a modern economy where movements in food and energy prices were temporarily keeping inflation low, but where the Federal Reserve viewed core inflation as too high and was actively seeking to reduce it.

## **SEPTEMBER 1958**

From late 1957 through July 1958, the FOMC focused on responding to the 1957–58 recession (and, at the very end of this period, on maintaining easy policy because of a crisis in the Middle East). However, there was an undercurrent of concern that the committee had responded too aggressively to the previous (1953–54) recession, and, more importantly, that inflationary expectations had become entrenched over the period since World War II. For example, in October 1957, Federal Reserve Chairman William McChesney Martin “observed that he had visited with seven Ministers of Finance and six Governors of central banks ... during the past week. He was impressed with the unanimity of their views that inflation in each instance had gotten ahead of them” (10/1/1957, p. 23). In March 1958, he said that “The System should not continue to inject reserves indefinitely into the market but should bear in mind what happened in 1954 and not be carried away with the preservation of ease” (3/25/1958, p. 44). In May, Hugh Leach (President of the Federal Reserve Bank of Richmond) said that “There was ... considerable talk about inflation, and the unexpected rise in the consumers’ price index in a period of recession was causing more and more people to wonder whether inflation was inevitable” (5/6/1958, pp. 33–34). And in July, Atlanta President Malcom Bryan said, “There has been continuous, pervasive, and increasingly convincing propaganda to the effect that inflation is inevitable. That propaganda now carries

almost universal conviction” (7/29/1958, p. 17) He added, “at some opportune time the public should be reassured that the System is not going to be an engine of inflation” (p. 20).

In August and September 1958, the FOMC shifted from thinking of inflation and inflationary expectations as long-term concerns to viewing them as immediate issues that required action. In August, associate economist Ralph Young referred to “a financial stage set for an extension of creeping inflation,” and “an inflationary psychology in financial markets” (8/19/1958, pp. 6 and 8). Leach said that “predictions of inflation [were] widespread” (p. 37); and Philadelphia President Karl Bopp said, “Incipient recovery, the prospect of a large Treasury deficit, and price increases have inspired widespread belief that we are entering another round of unabated inflation” (p. 45). Martin spoke at length about the issue. According to the *Minutes*: “In his judgment, the reason that there were now more than five million unemployed was to be found in the extent that inflation dominated the economy in the course of the last few years. ... The Chairman said that the System had to stand up and be counted in these things” (p. 54). Martin went on to say that “He was not sure that there was not an element of truth in one article which said in effect: ‘You have acted with courage, but this is the Federal Reserve System’s last chance.’ ... [H]e did not think that the System had faced in recent years anything like the present problem, whether it be called an inflationary psychosis or inflationary psychology. He did not know how to deal with the specifics of the problem except by moving in the right direction within the System” (pp. 58–59). The key phrase in the directive had been, “to contributing further by monetary ease to resumption of stable growth of the economy” through early July (7/8/1958, p. 51), before being changed briefly to, “to recapturing redundant reserves” (7/29/1958, p. 55). At this meeting, the Committee changed it to, “to fostering conditions in the money market conducive to balanced economic recovery” (8/19/1958, p. 63).

This shift carried over to both meetings in September. At the September 9 meeting, Cleveland President Wilbur Fulton said that “A disturbing factor was the continuous price increases and the anticipation of price increases in a broad segment of industry” (9/9/1958, p. 19), and Chicago President Carl Allen referred to “the serious inflation of the past twenty years” (p. 34). Alfred Hayes (President of the Federal Reserve Bank of New York and Vice Chairman of the FOMC) cited higher expected inflation as the source of recent increases in nominal interest rates, saying, “fears of resumption of strongly inflationary trends are doubtless at the root of the rise in interest rates” (p. 10).

At the September 30 meeting, an economist thought it was noteworthy that “One of the recurrent news items of the recession months last winter and spring was the announcement that, contrary to earlier expectations, consumer prices had again reached a new high” (9/30/1958, p. 10), suggesting that any positive level of inflation was viewed as noteworthy. The economist went on to say that this development was one factor bringing “new support to the proponents of the theory of the inevitability of creeping inflation,” and, “the price experience of the recession and of the recent recovery have encouraged the view that price levels were bound to trend upward” (pp. 10–11). James Robertson (a member of the Board of Governors) “stated that the big problem today was to continue to combat—and to dispel if possible—the widespread expectation of inflation” (p. 32). Governor Charles Shepardson seconded this view, saying that “some way must be found as expeditiously as possible to minimize the fear of inflation” (p. 33). Dallas President Watrous Irons referred to “a very strong inflationary fear or psychosis” (where “psychosis” appeared to refer to an irrational fear), and continued by saying that “Until that fear had been dispelled by one means or another he did not believe that the market would be ready to go into

Treasury securities” (pp. 18–19). And Martin “expressed wholehearted agreement with Mr. Irons’ analysis of the overriding problem with which the System was confronted” (p. 42).

The FOMC also showed a clear willingness to accept output costs to combat inflation, and indeed to accept risks of a recession. Consistent with the general undercurrent of concern about entrenched inflation throughout this period, in July 1957 Leach “was willing to take whatever risk was involved in being a little more restrictive. Perhaps it was not practicable to completely stop price increases through monetary policy, but he believed that the System had a responsibility to do all that it could in that direction” (7/30/1957, pp. 22–23). Martin agreed: “he subscribed to the thought which had been expressed regarding the necessity for the System to accept certain risks,” and, “personally, he would want to assume the risk of being charged with precipitating a downturn rather than to take any action except one that was believed to be correct” (pp. 36 and 38). The next month, Allen said that “It was becoming increasingly apparent that the adjustments needed will come only by hard necessity” (8/20/1957, p. 23).

This willingness became much more evident with the shift in the FOMC’s focus in August and September 1958. In August, following his remarks that inflation had “dominated” the economy in recent years, Martin “said that the System had to stand up and be counted in these things,” and that, “There was certainly a risk, for if there should be a decline in business this fall the System would be blamed for it” (8/19/1958, pp. 54 and 58). Similarly, in September Martin said that “The remedy for the inflation which had gotten ahead of the country over a period of twenty years was bound to be disagreeable but the problem required taking a stand” (9/9/1958, p. 50). The *Minutes* also reported of Martin’s views: “All he was saying and hoping for the System was that it would stand up and be counted, and would not dilly-dally unduly about the risks and particularly about political jeopardy. If the System should lose its independence in the process of fighting for sound money, that would indeed be a great feather in its cap and ultimately its success would be great” (p. 53).

The evidence of willingness to accept output costs continued after the FOMC’s shift in focus in August and September. In October, Governor Mene Szymczak “felt that the Committee should continue its present policy despite some unemployment” (10/21/1958, p. 40). In January 1959, C. Canby Balderston (Vice Chairman of the Board of Governors) “started with the belief that in the 1954–55 recovery Federal Reserve restraint could be described as having been ‘too little and too late,’” and said that “there were cogent reasons for making the restraint this time more stiff than before” (1/6/1959, pp. 32 and 33). Martin agreed, saying that, “as mentioned by Governor Balderston, whatever actions the System decided upon must be decisive” (p. 35). The following month, Kansas City President H. Gavin Leedy “expressed the view that ... [t]he System, of course, wanted growth as well as stability, but if temporarily there had to be a choice between growth and arresting inflationary psychology he would favor the latter course” (2/10/1959, p. 22). In March, Martin said that “if a move were made on the discount rate and the business situation were to collapse, the System would be blamed, but that was the risk that must be run,” and that “the System should express to the world clearly where it stood” (3/3/1959, pp. 58 and 59). And at the May 26 meeting, Robertson called for “A forthright policy designed to place the world on notice that the Federal Reserve stands adamantly opposed to inflation” (5/26/1959, p. 37), and Martin said that “The need was not for a signal but for action” (p. 51). At this meeting, the Committee changed the key phrase in the directive from, “to fostering conditions in the money market conducive to sustainable economic growth and stability” (5/5/1959, p. 46) to, “to restraining inflationary credit expansion in order to foster sustainable economic growth and expanding employment opportunities” (5/26/1959, p. 62).

Monetary policymakers backed their desire to reduce inflation with actions. They raised the discount rate from 1¾ percent to 2 percent in August and September 1958, and to 2½ percent in October and November (with the exact dates differing across Reserve Banks). They also increased margin requirements (which were viewed as an instrument of monetary policy in this period) in August and October. The monthly average federal funds rate rose steadily, from 0.68 percent in July, to 1.76 percent in September, to 2.42 percent in December. And although monetary policymakers were not close to targeting the funds rate, these increases were the intended result of their actions. The clearest statement of policymakers' intent to raise interest rates and the role of the discount rate in that process came in the Federal Reserve's Annual Report (*Annual Report of the Board of Governors of the Federal Reserve System*, 1958, pp. 8–9):

[T]he Federal Reserve, during the summer, began to move away from its anti-recession policy of low discount rates, high excess reserves, and reductions in reserve requirements.

System open market operations after midsummer supplied only a portion of the reserves needed to meet rising credit demands and to offset the reserve drain of a continued gold outflow. As a result, member banks drew down their excess reserves somewhat and at the same time increased their borrowings from the Federal Reserve Banks. Such borrowing was made much more costly when Reserve Bank discount rates were raised in the late summer from 1¾ per cent to 2 per cent, and in midautumn to a level of 2½ per cent.

As with 1955, the main potential concern about identifying an anti-inflationary shift in policy in this episode is the possibility that policymakers were mainly trying to prevent a boom that would drive inflation up, rather than aiming for below-normal output that would bring inflation down. Indeed, along with the statements about combating current inflation or entrenched expectations of inflation that are illustrated above, there were statements about preventing inflation from rising. At the important August 19 meeting, Martin discussed what would happen “If inflation should begin to develop again” (8/19/1958, p. 57), suggesting that he viewed inflation as prospective rather than actual. At the same meeting, Bopp, while referring to actual “price increases,” also mentioned “the threat of inflation” and a possible “resurgence of inflation” (pp. 45–46). At the first meeting in September, Hayes said, “General price stability seems to be a reasonable expectation for some months to come” (9/9/1958, p. 11), and Leedy said that “the System should not postpone the matter of looking at the possibility of inflation ahead of it” (p. 32). And in December, Martin “saw grave danger in becoming complacent about the price situation and said he believed the System ought to be poised, as far as possible, to take effective action whenever and wherever the price situation seemed likely to get out of hand” (12/2/1958, p. 36).

Closely related, there was not unanimity that the data showed actual inflation at the time of the policy shift. Most of the very concrete statements from the members about inflation described actual inflation. In May 1958, as noted above, Leach referred to “the unexpected rise in the consumers' price index in a period of recession” (5/6/1958, p. 33). In August, San Francisco President Hermann Mangels said that “the price level had increased about 3 per cent in the past 12-month period” (8/19/1958, p. 28). And at the first meeting in September, Fulton referred to “the continuous price increases and the anticipation of price increases in a broad segment of industry” (9/9/1958, p. 19). But at the second meeting that month, New York Vice President William Treiber (serving as an alternate for Hayes) said, “spot and future prices of basic commodities continue to decline. The wholesale price index declined in August after showing little

change for several months. The consumers' price index appears to have entered a period of stability" (9/30/1958, p. 14).

The picture painted by the FOMC's economists was more nuanced. At the September 30, 1958 meeting, there was a clear statement that there was ongoing inflation: "Wholesale prices of commodities and consumer prices of goods and services have risen somewhat further during recent recession and recovery. But price developments have been more selective than the broad indexes suggest" (9/30/1958, p. 7). (This was followed by the comment noted above that "One of the recurrent news items of the recession months last winter and spring was ... that ... consumer prices had again reached a new high" [p 10]). But a more common assessment was along the lines of the presentation at the November 10 meeting: "For some months, the averages of prices at wholesale and retail have been about stable, reflecting offsetting movements of industrial material prices and prices of farm products and foods—the former up and the latter down" (11/10/1958, p. 6).

Even though some members and some of the staff perceived that by some measures headline inflation was largely absent, and even though there were a fair number of expressions of concern about preventing inflation, it seems clear that the FOMC's predominant goal was to reduce either expected inflation or some concept of what we would today call "core" inflation—and not merely to prevent an expansion of aggregate demand that would cause those measures to rise. The references to prospective inflation are more scattered and seem less fundamental than the repeated and often strong references to ongoing inflation or expected inflation, as well as the willingness to accept costs and risks to address them. We therefore view the weight of the evidence as pointing clearly to the FOMC wanting to reduce inflation rather than preventing it from increasing.

In terms of the choice of a specific date, September 1958 is the natural one. There was certainly no notable shift in the FOMC's goals and actions before August 1958. There is considerable evidence of a change in August, but it was not sufficiently dramatic by itself to warrant identifying a shift. The two meetings in September, however, ratified the evidence from August. Indeed, Martin's statements at the September 9 meeting showing concern about persistent inflation and a willingness to take strong measures policy were clearer than his statements in August. The meetings over the next several months further buttress the conclusion that policy had shifted, but do not suggest any fundamental change beyond what occurred in August and September.

One interesting feature of this episode—although it is not relevant to our identification of the shift in September 1958, since it occurred well afterward—is that monetary policymakers gradually came to believe that they had succeeded in conquering creeping inflation and in wringing expectations of inflation out of the economy. Indeed, at times their language is reminiscent of how modern policymakers talk about the Volcker disinflation. The first widespread mentions of this possibility occurred at the March 1, 1960 meeting. Hayes mentioned the possible "emergence of some less fatalistic views with respect to creeping inflation" (3/1/1960, p. 31); Irons said that "the psychology of businessmen and bankers in the district was ... less inflation minded (p. 37); and Governor George King "suggested that the System might be entering a new era of monetary policy. Since the time of the Treasury-Federal Reserve accord, the System had struggled with a money supply too large for the economy, but there were increasing indications that the country had pretty well grown up to this inflated money supply" (pp. 56–57). Martin offered cautious support for this view: "he had hesitantly come to the conclusion that there might be

developments this time of more importance than usual. ... [A] leading student in the field, who thought that inflationary psychology had diminished a great deal in the last three months, now asserted that there would be a problem of business attitudes in living on the profit margin without inflation, because business generally had gotten accustomed to living with inflation” (pp. 68 and 69). This view persisted well into the 1960s (see, for example, 12/5/1961, p. 6; 10/2/1962, p. 6; 5/26/1964, p. 31; and 3/23/1965, p. 36).

## **DECEMBER 1968**

Beginning in roughly April 1968, many members of the FOMC started to suggest that the current level in inflation was too high and needed to be reduced, and that it was worth bearing significant output costs to do so. In April, for example, Aubrey Heflin (President of the Federal Reserve Bank of Richmond) said that “Current inflationary trends clearly had to be arrested if a major crisis was to be avoided,” and that he “realized that further tightening involved serious risks of dislocations in the credit markets and in important sectors of the economy. But, in view of the urgency of the situation the country was facing, he was prepared to run those risks” (4/2/1968, pp. 71 and 72). At a second meeting that month, associate economist J. Charles Partee said, “the urgent and exceedingly tricky problem is to achieve and maintain just enough restraint on aggregate demand to reduce gradually the receptivity of markets to price increases and induce some slack in the labor force, but without bringing on a full-fledged recession” (4/30/1968, p. 39). In July, the *Minutes* reported that Federal Reserve Chairman William McChesney Martin had a similar view: “There was a tendency to get frightened by the spectre of recession when measures were being taken against inflation, Chairman Martin observed. What he was seeking was disinflation and not recession, although he recognized that drawing a line between the two was difficult” (7/16/1968, p. 96). At the same meeting, William Sherrill (a member of the Board of Governors) “thought the long-range objectives should be to bring inflation to a halt and then rebuild at a sustainable pace” (pp. 61–62). And after referring to “the continued strong domestic price pressures and the balance of international payments situation” and “the projected abrupt slump in economic growth in the third and fourth quarters,” Chicago President Charles Scanlon said that “To achieve conditions which would provide a base for re-establishment of a better balance of supply and demand in labor and other markets was a painful process. In his view, to accomplish that objective, the economy probably would need to undergo a period with virtually no growth of real output” (pp. 79–80). In August, “The greater concern about a possible recession than about present and prospective inflation seemed unwarranted to [St. Louis President Darryl] Francis. ... [A] lack of economic growth might be desirable for a brief period as a necessary accompaniment of reducing the intense inflationary pressures” (8/13/1968, p. 77). And at that meeting, James Robertson (Vice Chairman of the Board of Governors) said, “Clearly there will be a slowdown, and some slowdown is desirable” (p. 79).

This period does not yet meet our criteria for a monetary shock, however. There are two reasons. First, crucially, almost no members argued for tighter monetary policy, and the committee did not take any contractionary steps. Rather, they expected that the tax surcharge (which was moving toward enactment at the start of this period, and which was ultimately enacted in June 1968) would contract aggregate demand; their view was merely that they should not try to offset those effects (or that they should try to offset only a small part of them). In discussing the surcharge in May 1968, the Committee’s chief economist, Daniel Brill, said, “given the amount of restraint in the pending bill, the economy would skate perilously close to the brink of economic recession, with real growth declining abruptly to a very slow pace, and substantial slack

developing in labor and plant resources in the first half of next year. ... [S]ome may question whether monetary policy should seek to put the economy through a still tighter wringer” (5/28/1968, p. 58). At the next meeting, associate economist John Reynolds said that, “the specific question that is before the Committee today [is] the question of how soon and how much to ease monetary policy if the Congress adopts the fiscal restraint package,” despite the fact that “We need a temporary but decisive slowdown in the real growth rate in order to remove excess demand pressures and slow down inflation” (6/18/1968, p. 53). At the same meeting, San Francisco President Eliot Swan and Philadelphia President Karl Bopp showed both their willingness to accept output costs and their desire to merely maintain current monetary policy and rely on the expected change in fiscal policy. Swan “recognized the possibility that some degree of overkill might be involved in the combination of the proposed fiscal restraint and the existing monetary restraint” (p. 62). And Bopp “would be reluctant to move now toward less monetary restraint simply to offset the proposed fiscal package. There was a calculated risk in that position, of course. Given lags in its effects, monetary policy might not be able to counteract an overkill from fiscal action. ... Nevertheless, he was inclined to take that risk for both domestic and international reasons” (pp. 82–83). Cleveland President W. Braddock Hickman expressed a similar view in July: “The intent of public policy was to arrest price inflation and improve the nation’s balance of payments, which required a reduced rate of economic advance such as was now being experienced. Accordingly, the Committee should not attempt to offset through monetary policy the fiscal restraint now in train” (7/16/1968, pp. 60–61).

Consistent with these views, monetary policymakers did little to tighten policy. After raising the discount rate from 4½ percent to 5 percent in March 1968 (before we see any notable evidence of a willingness to risk significant output costs to bring inflation down) and 5½ percent in April, their next significant policy action was a reduction in the discount rate to 5¼ percent in August. At the time, monetary policymakers characterized that move as merely addressing, as Martin put it, “a technical market problem” (8/13/1968, p. 82), but soon afterward they described it as having been a move toward ease. In September, for example, Robertson referred to it as “an overt easing step” (9/10/1968, p. 68). And in October, Alfred Hayes (President of the Federal Reserve Bank of New York and FOMC Vice Chairman) said (referring to monetary policy since the enactment of the surcharge more broadly), “we may have eased too much, or at least prematurely” (10/8/1968, pp. 32–33). The monthly average of the federal funds rate rose from 4.71 percent in February to 6.12 percent in May, but then fell gradually to 5.78 percent in September.

The second, and less significant, reason this period does not qualify as a monetary policy shock for our purposes is that the evidence of monetary policymakers’ commitment to reducing inflation became much weaker after just a few months. In September, October, and November 1968 (consistent with the absence of almost any change in the federal funds rate over this period), their discussions of inflation were generally closer to general dissatisfaction than to a clearly stated willingness to accept notable output costs. At the first meeting in October, three members, including Hayes, dissented because they thought the committee was not doing enough to address inflation. Hayes “did not feel complacent about the present posture of monetary policy in light of the strength of inflationary pressures; in his judgment, the Committee had permitted bank credit to expand too fast” (10/8/1968, p. 79). In November, in the face of growing evidence that the surcharge was having smaller effects than expected, in Governor George Mitchell’s “judgment, ... for the System to deal effectively with the prevailing inflationary psychology it would have to make a dramatic move of some sort .... Personally, he would not be prepared to take such action at present” (11/26/1968, p. 74). Martin agreed. He said that “It would be asking too much of current

monetary policy to expect it to deal with the inflationary psychology that had resulted from the cumulated heritage of past failures of public policy,” and that “he agreed with Mr. Mitchell that to affect the prevailing inflationary psychology the System would have to take more drastic firming action than represented by alternative B for the directive, and that such action would not be desirable at this time” (pp. 92 and 93). He supported a version of the directive that involved no firming of policy rather than the mild firming in Alternative B, and the Committee adopted his recommendation.

In December 1968, monetary policymakers’ tone and actions changed sharply. Robertson opened the meeting by advocating “overt action with significant announcement effect, sufficient to have a salutary dampening impact on inflationary expectations” (12/17/1968, p. 3). Brill said, “The problem before the Committee today, it seems to me, is not *whether* to tighten policy, but *how* and *how much* to tighten. I say this with full recognition of the lagged effect of policy actions, and in recognition and support of the staff projection of impending moderation in the economy” (p. 38, emphasis in original). He also said, “It might prove possible to achieve a modification of business psychology without too strenuous or prolonged a monetary squeeze. But we dare not count on winning the battle so cheaply” (p. 38). Francis said that “There seemed little question that a restrictive monetary policy had to be pursued in order to provide the necessary total restraint to end the inflation” (p. 52). Hickman said that the committee was facing “a pervasive and persistent inflationary psychology,” and that “expected gains in GNP were still too high to permit any measurable easing of price pressures” (p. 60). Similarly, Heflin thought that “the fundamental problem was the strong inflationary psychology ... [H]e kept hoping that the expected deceleration in the business advance would materialize and allow the System to avoid actions that risked serious disruption of credit markets. The latest business statistics had dissipated those hopes ... [T]he best thing that could be done today was to put the business and financial community on notice, as unequivocally as possible, that the System was determined to slow down the recent excessive money and credit growth” (pp. 69–70). Finally, George Clay (President of the Federal Reserve Bank of Kansas City) felt that policy “had to be modified ... [T]he strong inflationary expectations had to be dispelled. That could not be accomplished without slowing down the rate of economic expansion. Every reasonable effort needed to be made to avoid a downturn in economic activity, but it had to be admitted that such a risk existed” (pp. 71–72).

Monetary policymakers did indeed take “overt action.” They adopted a directive that was slightly firmer than either of the options presented by the staff. “[C]ontinued resistance to inflationary pressures” in the November directive was changed to “the reduction of inflationary pressures,” and “maintaining about the prevailing conditions in money and short-term credit markets” was changed to “attaining firmer conditions in money and short-term credit markets” (11/26/1968, pp. 95–96, and 12/17/1968, p. 90). In advocating the change from the firmer option offered by the staff, Swan explained that the goal was to “help clarify the Committee’s intent to make a definite change in policy” (12/17/1968, p. 80). In addition, in keeping with the discussion at this meeting, the Board of Governors voted to raise the discount rate from 5¼ percent to 5½ percent the same day.

The evidence from just the December meeting leaves some lingering doubts about how to interpret policymakers’ motives and actions, however. Despite the considerable evidence just described that the members wanted to take actions to bring inflation down and were willing to bear output costs to do so, other statements at the meeting were less clear about whether the main concern was preventing inflation from rising or bringing it down. For example, Hayes referred to

a “greater-than-expected expansion,” and said, “an inflationary spiral, abetted by a very tight labor market, continues to be our most challenging problem” (12/17/1968, p. 48). Scanlon said that “Inflationary forces took time to reach their current strength, and it would be difficult and undesirable—perhaps impossible—to deflate plans and expectations quickly. But a start should be made” (p. 74). And “Scanlon added that he thought the System should increase monetary restraint through action that would clearly convey its intent to fight inflation more vigorously” (p. 75). In his prepared statement, Robertson said, “Since we last met, the stream of economic statistics becoming available has looked significantly stronger. More importantly, signs of spreading inflationary expectations have multiplied. It looks very much like inflationary fever is outrunning real economic expansion” (p. 85). He also said, “Perhaps the Federal Reserve needs to take significant and overt action to begin to calm down this ebullience,” and referred to a possible “package with an unmistakable signal of indisputable strength that the Fed was going to fight this wave of inflationary sentiment” (p. 86). None of these statements points clearly to only trying to keep inflation from rising, but they are certainly open to that interpretation. In addition, Martin was not present at this meeting. Although that was not highly unusual in this period, it raises the possibility that on his return, policymakers might have reversed course or declined to follow through.

The evidence from early 1969 shows clearly, however, that the shift in December 1968 was real and important. The participants were consistently clear that as of December, their goal was to reduce inflation and that they were willing to accept significant output costs to do so. Much of that evidence comes from the very next meeting. Martin strongly backed the shift in policy. Among the points he made were, “the primary problem was ... dealing with the prevailing inflationary psychology” (1/14/1969, p. 71), “inflation was the primary economic problem now facing the nation” (p. 72), and, “he thought monetary policy was now on the right track. In his judgment it would be better at this juncture to risk overstaying, rather than understaying, a policy of restraint, and he certainly would not want to relax policy now” (p. 73). Charles Coombs, the New York official in charge of foreign exchange operations, said that “At the Basle meeting during the past weekend, ... there was a general feeling that the Federal Reserve’s actions had been essential to break the wave of inflationary psychology that was prevalent not just in the United States but world-wide” (p. 6). And Alan Holmes, Manager of the System Open Market Account, said, “financial markets reacted vigorously to the tightening of monetary policy voted by the Committee at the last meeting. Most observers have interpreted the System moves as a determined drive against the forces of inflation” (p. 11), and “Open market operations over the period were directed first at moving decisively to firmer money market conditions and then at maintaining pressure while trying to prevent interest rates from going through the roof” (p. 13). New York Vice President William Treiber (serving as an alternate for Hayes) said, “there has been a great change in market psychology. The markets have generally interpreted our actions as a determined effort to break the back of inflationary expectations. This is all to the good” (p. 32).

Comments at this meeting from other members included, “He could not counsel too strongly that the Committee hold to the present course of policy until it could see that significant improvement had been achieved in the fight to break the inflation psychology” (Dallas President Philip Coldwell, 1/14/1969, p. 38); “[the Federal Reserve’s] struggle to change inflationary expectations” (Minneapolis President Hugh Galusha, p. 45); “Considerable time and effort, buttressed by evidence of persistence and positive results, would be required to restore relative price stability and to dispel price inflation expectations. A slower pace of economic expansion had to be part of the process by which the necessary results were attained” (Clay, p. 50); “it seemed to

him that there almost certainly would be a significant moderation in the business expansion in the months ahead. It might be that there would be more moderation than bargained for, but he believed that that was a risk that had to be taken if the inflationary climate was to be dissipated” (Heflin, p. 52); and “the toughest part of our job lies ahead. That consists of sticking to a tight policy with determination until the economy has been set decisively on the track of a slower and noninflationary expansion” (Robertson, p. 69). An exchange between Boston President Frank Morris (who ended up dissenting at this meeting) and Governor J. Dewey Daane is particularly interesting. Morris “said that the blue book projections had given him cause for concern, since they suggested that the monetary policy now in force would be substantially more restrictive in January and February than the policy he thought he was voting for at the last meeting of the Committee” (p. 33). Later, “Morris added that he was concerned with the suggestion in [assistant adviser] Mr. [Peter] Keir’s statement that under current policy there was a fairly good chance of a credit crunch in January” (p. 35). When it was his turn to speak, Daane said that “In Mr. Morris’ judgment there was nothing in the economic outlook that justified risking a credit crunch .... He (Mr. Daane) thought the risks with which Mr. Morris was concerned were far less important than the opposing risk that the Committee might contribute further to the inflationary expectations that were currently prevailing” (p. 56, parenthetical in original).

There were similar statements in subsequent meetings. For example, in early April 1969, Martin said that “In his judgment the primary problem at the moment was that of the prevailing inflationary psychology. The present inflationary situation seemed to him to be the most serious of any in recent years; there were many signs indicating that inflation was becoming a way of life in the nation today” (4/1/1969, p. 104). The meeting in May featured numerous participants expressing willingness to risk a credit “crunch.” Early in the meeting, “Mr. Daane asked for Mr. Holmes’ view of the probable consequences if System policy produced widespread expectations of a credit crunch. Mr. Holmes responded that the spread of such expectations would produce greater financial restraint .... Thus, in terms of System objectives, the consequences would not necessarily be bad” (5/27/1969, p. 25). In a prepared statement, Hayes said, “I am more than ever convinced that a business slowdown of some considerable duration may be needed if we are to make any real progress on the cost-price front” (p. 37), and, “We cannot rule out the possibility of another credit ‘crunch’ ...; but this is a risk that must be taken in the light of our major objectives” (p. 39). Later in the meeting, Daane said that “He wanted to make clear that he was not seeking a credit crunch. Nevertheless, he agreed with those who thought that the consequences of spreading expectations of a crunch—however defined—would not all be bad” (p. 55). “Scanlon said, he would press firmly, fully expecting to hear shouts of crunch and crisis, even though the situation might not be that critical. Unfortunately, that shouting apparently was part of the process necessary to convince the public that monetary policy meant business” (p. 64). And Robertson said, “we must be ... willing to run greater risks of ‘over-kill’ and recession—with confidence that we can avoid both—in the interests of the longer-run health of our system” (p. 72). Martin was more moderate, but still said that “No member of the Committee wanted a crunch, and none wanted a recession; everyone wanted to put the economy on a stable basis by disinflating without deflating” (p. 74). Finally, in June, with unusual frankness even for the committee’s confidential deliberations, Galusha commented that “Apparently, prospects were for actual decreases in real GNP and, extending over the next few quarters, what he regarded as rather a sharp increase in the unemployment rate. But, of course, while not speaking of it, Committee members had known all along that such an increase was almost inevitable” (6/24/1969, p. 65).

The FOMC consistently tightened policy over this period. The monthly average federal funds rate rose every month, increasing from 5.82 percent in November 1968 to 8.90 percent in June 1969. These increases were the intended results of Federal Reserve policies—a point that comes through clearly in Holmes’s prepared statements. In February, he referred to “steady pressure on the banks through open market operations” (2/4/1969, p. 13). In March, he reported, “market sentiment shifted decisively towards expectations of sustained monetary restraint during the period since the Committee last met,” and that “Steady pressure on bank reserve positions through open market operations contributed to this shift in sentiment” (3/4/1969, p. 45). At the first meeting in April: “Open market operations engendered firm conditions in the money market since the Committee last met and strong pressure was maintained on bank reserve positions” (4/1/1969, p. 20). Finally, in May, after mentioning other factors affecting financial markets, he said: “In this atmosphere our own efforts to keep the markets and the banking system under firm restraint produced tensions in the money market that led to new highs in most short-term rates and to a deterioration in the capital markets” (5/27/1969, p. 19). An interaction at the meeting in early April gives a flavor of how Holmes interpreted the committee’s discussion: “Daane asked whether the Manager would feel obliged under alternative B [the version of the directive that was adopted] to take action to maintain the status quo in money and short-term credit markets if conditions were tending to firm as a result of policy actions taken by the Board. Mr. Holmes said he thought it was quite clear from the discussion today that the Committee would not want him to offset such a tendency toward firmer conditions” (4/1/1969, pp. 104–105).

Despite the steady tightening of policy after December 1968, monetary policymakers did not take any further dramatic actions or characterize what they were doing as involving any significant further changes in the overall conduct of policy; the most overt move was an increase in the discount rate and reserve requirements in April. Rather, they viewed themselves as carrying out the policy they had decided on in December, and they repeatedly cited December as the time of a major shift in policy. For example, at the January 1969 meeting, Robertson’s prepared statement began, “Since our mid-December meeting, monetary restraint has caught the attention of the country” (1/14/1969, p. 69), and the directive at that meeting referred to “the mid-December firming of monetary policy” (p. 77). In February, Francis referred to “the policy of intensifying restraint that was decided upon on December 17” (2/4/1969, p. 48). In March, Heflin referred to “the Committee’s posture since the December discount rate increase” (3/4/1969, p. 87), and Mitchell referred to “the monetary policy that had been followed since mid-December” (pp. 87–88). In May, associate economist Stephen Axilrod discussed “initiation of the recent phase of monetary restraint in December” (5/27/1969, p. 30). And the 1969 *Annual Report* reported, “During the first half of 1969 the Federal Reserve continued on the course of monetary restraint initiated in December 1968” (*Annual Report of the Board of Governors of the Federal Reserve System*, 1969, p. 16). Thus, there is no reasonable alternative to December 1968 as the date of the policy shock.

## **JANUARY 1972**

This episode is the one case of a positive monetary policy shock in our sample. As discussed above, we define a positive shock as a decision to use monetary policy to lower the unemployment rate from a stable level, combined with a willingness to accept a rise in inflation to bring it about. We believe that the 1972 episode meets our criteria for a positive monetary policy shock, albeit with some complications that are discussed below.

In the spring of 1971, the economy was recovering from the mild recession of 1969–70. After a period of slow money growth, aggressive monetary policy had increased money growth rates dramatically. At the April FOMC meeting, J. Charles Partee (senior economist) said in his report: “I am now inclined to agree with those who believe that monetary policy has provided about as much stimulus to the economy as prudently can be injected from the standpoint of a longer-term strategy” (4/6/1971, p. 21). This view was echoed by several committee members. For example, Philip Coldwell (President of the Federal Reserve Bank of Dallas) was summarized as believing that “the monetary aggregates had been rising too rapidly, generating further concern of future inflation,” while J. Dewey Daane (a member of the Board of Governors) believed that: “the Federal Reserve had gone about as far as it should, and perhaps a bit too far, in easing monetary policy. In his judgment any further stimulus should come from the fiscal side, and should be accompanied by an incomes policy” (pp. 61 and 71–72, respectively). In addition, the U.S. was having severe balance of payments problems and the Special Manager of the System Open Market Account was summarized as saying that “a speculative crisis ... was in its early stages” (p. 3). Burns was described as believing “the major reason for a slight increase in the target for the Federal funds rate at this time was the state of the balance of payments. He did not think a firming of policy was warranted by the economic situation” (p. 80). The funds rate was allowed to rise after both the April and May meetings.

In June and July 1971, committee members continued to express concern over rapid money growth and continuing high inflation. For example, St. Louis President Darryl Francis was summarized as believing: “A continuation of the trend of money growth in recent months would accelerate the upward trend of prices .... Furthermore, as inflationary expectations became more firmly entrenched in contracts, regulations, and the thinking of the public, the ultimate correction would become more costly either in severity or duration” (6/8/1971, p. 72). In July, Burns was summarized as saying: “Rapid growth in the aggregates was causing considerable trouble and if continued would cause even greater trouble; and while he would prefer not to see interest rates rise he, for one, was prepared to accept a somewhat higher funds rate as the price of getting the aggregates under control” (7/27/1971, pp. 47–48). Atlanta President Monroe Kimbrel agreed, believing that, “although all members of the Committee continued to deplore higher interest rates, higher rates over the near term might be a modest price to pay for accomplishing some constructive influence in controlling the monetary aggregates. Growth in the monetary aggregates continued to be much too explosive, contributing to consumer fear of unabated inflation” (7/27/1971, pp. 73–74). The funds rate rose from around 4 percent at the end of March 1971 to around 5½ percent at the end of July (*Federal Reserve Bank of New York Monthly Review*, April 1972, pp. 86–88).

In August 1971, President Richard Nixon announced a wide-ranging economic plan. The key elements were a wage and price freeze, fiscal expansion, and a suspension of dollar convertibility into gold. Partee suggested, “In view of all the current uncertainties, I would recommend that the Committee seek to find a neutral stance in monetary policy for the time being. By neutral, I mean a policy which neither forces deposits on a public whose demand for liquidity is waning, nor holds interest rates up when market conditions would otherwise bring a decline” (8/24/1971, p. 47). Burns was described as agreeing with the recommendation: “Chairman Burns expressed the view that if interest rates—particularly those over which the System had the most control—were to move lower immediately after today’s meeting, observers would conclude that the System was taking a deliberate step toward ease in order to encourage still faster growth in the monetary aggregates. The effect, in his judgment, would be to nullify the favorable impact that the

announcement of the new economic program had had on confidence” (p. 54). The main change in policy was that the lower limit of the federal funds rate range was lowered  $\frac{3}{8}$  of a percentage point. “Chairman Burns expressed the view that the proposed directive would be in harmony with the President’s new economic program. The Committee would not be pushing for lower interest rates but it would be prepared to accommodate declines, albeit reluctantly during the next week or so” (p. 105).

An interesting element of the August 1971 FOMC meeting was a lengthy discussion of reserve targeting. The Committee on the Directive had made a recommendation in favor of reserve targeting in 1970 that had never been seriously considered.<sup>5</sup> Burns arranged for the committee to update its report and for the FOMC to discuss it. Though there was some support, FOMC members expressed concern about the potential for large movements in the federal funds rate and other interest rates. For example, Kimbrel “recognized that the proposed procedure would lead to a wider range of fluctuation in interest rates, and he thought that the Committee should be prepared to accept a range considerably wider than ordinarily occurred at present” (8/24/1971, p. 82). There was also a sense that the current moment was not the appropriate time for a change in operating procedures. For example, Alfred Hayes (President of the Federal Reserve Bank of New York and Vice Chairman of the FOMC) said that “he had serious reservations about the proposed change. First, simply as a matter of timing, he thought the present circumstances—involving a new thrust in national economic policy across a broad front and calling in his view for a most cautious implementation of monetary policy—would be most inopportune for revamping the System’s approach to open market operations” (p. 72). After a very lengthy discussion, “Chairman Burns proposed that the Committee proceed on the assumption that no change was to be made in the format of the directive today, and that the purpose of the discussion was simply to determine whether there was substantial sentiment in favor of moving in the proposed direction” (p. 84).

After the announcement of the President’s new economic policies, the staff was decidedly more optimistic about the economic outlook. For example, in October, Partee’s report said, “we continue to project a marked resurgence in real economic growth beginning in the fourth quarter and extending through the second quarter of next year” (10/19/1971, p. 23). He recommended lowering interest rates to accommodate the more rapid growth (p. 31). By November, the staff had moderated their outlook slightly. Partee’s report said, “We have scaled down somewhat our expectations for this and the next two quarters, since a careful review of the prospects led us to agree with the Committee that we had become a little too exuberant previously. But the outlook for real growth still seems to us quite favorable” (11/16/1971, p. 33). In the staff’s forecast, the unemployment rate was predicted to decline gradually from 6 percent to 5.3 percent over 1972 (p. 40). Burns showed signs of concern about the forecast. The *Memoranda of Discussion* reported: “Like others, the Chairman remarked, he had been eager to see the earlier explosive rates of growth in the monetary aggregates come to an end, and he was pleased that that had now been achieved. However, it was important to avoid overdoing the slowdown” (p. 86). The range for the funds rate was reduced  $\frac{1}{2}$  percentage point (p.87).

The December FOMC meeting was characterized by an increased focus on stimulating growth on the part of a number of members. Governor Andrew Brimmer expressed concern that

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<sup>5</sup> The Committee on the Directive was composed of Sherman Maisel, member of the Board of Governors, Frank Morris, President of the Federal Reserve Bank of Boston, and Eliot Swan, President of the Federal Reserve Bank of San Francisco. It was established at the FOMC meeting on October 8, 1968 “to have a fresh examination of the adequacy of the Committee’s current economic policy directive” (10/8/1968, p. 90).

productivity might grow more rapidly than expected, and so there might be “very little reduction in unemployment” (12/14/1971, p. 30). Daane “believed the appropriate posture for the System at this point was one of doing what it could with the policy instruments at its disposal to foster and encourage economic expansion” (p. 60). Burns said that the Board of Governors had reduced the discount rate another 25 basis points a few days earlier “to assist the progress of economic expansion, and that was made clear in the statement for the press” (p. 50). According to the *Memoranda of Discussion*, “Chairman Burns said he would like to make a brief factual statement before the go-around on policy. As the Committee knew, the new economic program the President had announced on August 15 was designed not only to stabilize the price level but also to stimulate growth in the economy. What had been the record of monetary policy since August? If the staff’s projections for December were realized, over the last four months of the year M1 would have grown at an annual rate of 0.8 per cent; M2 at a rate of 6.2 per cent” (p. 48). Furthermore, “Chairman Burns commented that the figures he had cited earlier on the recent behavior of the aggregates did not suggest to him that the System’s posture was one of ease. Indeed, in light of the behavior of the aggregates some people were now asking whether the Federal Reserve was deliberately moving to a restraining policy so as to nullify what the Administration, with the support of Congress, was attempting to accomplish” (pp. 50–51).

At the same time, at least three members expressed concern that the more rapid monetary expansion being discussed could be ill-advised. For example, Kansas City President George Clay “thought there was a real risk of fostering a new surge of inflationary expectations by moving too fast” (12/14/1971, p. 64). Similarly, James Robertson (Vice Chairman of the Board of Governors) “had serious doubts about the wisdom of the proposed course and was concerned about the risk that it would lead to difficulties at a later time” (p. 89). The *Memoranda of Discussion* reported that “It was determined that a majority of members favored a range for the funds rate of 3-3/4 to 4-5/8 per cent” (p. 78). Burns got the Committee to agree to the proviso that the funds rate could go down to 3<sup>5</sup>/<sub>8</sub> percent if M1 was not expanding rapidly enough (p. 81). Overall, the funds rate declined from 5<sup>1</sup>/<sub>2</sub> percent in mid-September to 3<sup>3</sup>/<sub>4</sub> percent in late December of 1971 (*Federal Reserve Bank of New York Monthly Review*, April 1972, p. 89).

The noticeable change in tone and direction in December 1971 was greatly amplified in January 1972. According to the *Memoranda of Discussion*, Chairman Burns had called a special meeting of the FOMC on January 11, 1972 “because he had become seriously concerned about the present stance of monetary policy” (1/11/1972, p. 4). Though the staff projected that real GDP would rise by 6 percent in 1972, Partee urged the committee to aim for a higher target for M1 growth, and to begin expressing the directive in terms of a target for reserves (pp. 7–9). A number of members expressed confusion about the change in the staff viewpoint. For example, Chicago President Robert Mayo noted that the Greenbook projections “did not differ a great deal from those of four weeks ago. However the staff’s interpretation seemed to have a rather pessimistic tone which he would not have employed” (p. 15). Like the staff, Burns seemed to be accentuating the negative. For example, he emphasized that “A comparison of detailed figures for the present recovery and earlier recoveries in the postwar period made it clear that this recovery was the most sluggish by far” (p. 29), but failed to note that the recession had also been unusually mild. When another member pointed out that reserve growth at an annual rate had been about 7 percent over all of 1971, Burns responded that “such a summary was not likely to be considered sufficient by many observers, including some members of Congress. He would expect attention to focus on the more recent developments, including the net decline in total reserves and the very low growth rate in the narrow money supply during the fourth quarter” (p. 60). A little later in the meeting he

made a similar point, saying: “It was the virtual absence of growth in M1 in the fourth quarter that he thought was difficult to justify .... [U]nless the aggregates now began to grow at adequate rates he would become fearful about the future of the economy, and he would also feel that there might be some validity in a charge that the System was not supporting the policies of the Administration and Congress” (p. 62).

In giving his proposal for policy (something that Burns rarely did), “Chairman Burns said he considered it so important to achieve adequate growth in reserves at this time that he would not want to depend on projections. He would prefer to have the Committee direct the Desk to supply the volume of reserves deemed appropriate. Such a course might well prove consistent with no change in money market conditions; but if not, he thought conditions should be permitted to change” (1/11/1972, p. 57). He later remarked, “there could be a further reduction in interest rates, possibly of significant dimensions, if the Committee concurred in his view that a substantial addition to reserves was required in the weeks immediately ahead” (pp. 63–64).

Members were strongly split on the proposal to switch to reserve targeting and the possibility of substantially greater monetary stimulus. On the positive side, “Mr. Maisel expressed the view that the staff’s projected growth rate in nominal GNP of 10 per cent for the year ending in the fourth quarter of 1972 was a logical goal, and one that should be supported by monetary policy” (1/11/1972, p. 81). On the negative side, “Mr. Coldwell observed that ... the Committee should consider whether stimulating the economy to greater heights in the short run would not involve a cost in the form of a resurgence of inflationary pressures later on” (p. 71). Robertson reminded others that “it should be recognized that the battle against inflation was not yet over, and that unduly aggressive policy actions would involve the risk of rekindling inflationary expectations” (p. 90). On a preliminary vote, Burns did not get a majority in favor of the switch to reserve targeting. He nevertheless proposed that: “the Desk would be instructed to aim for an annual rate of growth in total reserves from December to January in a range of 20 to 25 per cent, lowering the Federal funds rate to 3 per cent if necessary to attain that objective” (pp. 92–93). The proposal passed with three dissents.

The evidence from the next several meetings confirms that FOMC members continued to support very rapid money growth to reduce unemployment and raise GDP growth, despite growing concerns about inflation. At the February 1972 meeting, Partee, in his staff report, said, “what is needed is some new spur to get the cumulative forces of recovery in motion,” despite the fact that the staff was predicting real GDP growth in 1972 of 5.6 percent (2/15/1972, pp. 19 and 23). At the same meeting, Burns shared his testimony to the Joint Economic Committee in which he told Congress: “We are now in a favorable position to provide the monetary support needed for a quickening pace of production and employment” (p. 47). The committee agreed to focus more closely on targeting reserves, but subject to a fairly modest tolerance range for the federal funds rate (pp. 47–48). That lower limit of the tolerance range for the federal funds rates was reduced to 2¾ percent, and the committee continued to seek large increases in reserves.

By the March 1972 meeting, it was clear that output growth had picked up and inflation was rising. For example, Francis “was concerned about an additional element in the situation—namely, the rapid rate of increase in the wholesale price index since last November” (3/21/1972, p. 30). “Mr. Coldwell said that the latest data seemed to support two basic conclusions. First, ... the economic recovery was proceeding at a more rapid pace and it seemed to be more broadly based. Second, the rate of inflation was accounting for a larger part of the advance in nominal GNP” (p. 32). Most FOMC members appeared somewhat nervous, and wanted to slow money

growth. For example, Clay believed: “In weighing the proper growth rates in the aggregates, account needs to be taken not only of the immediate desire to stimulate economic growth and employment but also of the risk of excess liquidity becoming an inflationary force as the upswing advances” (p. 64). Burns pushed back strongly against dialing back the stimulus. The *Memoranda of Discussion* summarized him as saying: “In his judgment it would be a mistake to suggest that the Committee had modified its policy at this point, when the economy was first beginning to show signs of vigorous recovery” (p. 75). Burns also argued that “If there was an outcry about inflation, and if at the same time interest rates were rising sharply, many people would link the difficulties facing the country with the interest rate policies of the Federal Reserve as those policies would be described and interpreted in the press” (p. 76). Even though most members wanted to raise the top of the federal funds rate range to 4½ percent or higher, Burns managed to get agreement for a “resting point” of 4¼ percent (pp. 80–81).

At the April 1972 meeting, Partee’s report said that “the growing uneasiness about wage and price prospects reflects the persistence of the cost-push problem and the apparent inability of the wage-price restraint program to deal with it fully” (4/18/1972, p. 18). Nevertheless, he said: “My policy prescription ... remains the same as it was at the Committee’s last meeting. I believe that monetary policy should remain accommodative to an accelerating economic recovery, by providing for a reasonably liberal growth rate in the monetary aggregates—7 to 8 per cent, for example, in the narrowly defined money supply” (p. 19). Maisel also argued for continuing expansionary policy. He was summarized as believing that “to accommodate GNP growth in the second half at the projected rate would be consistent with the nation’s goals. The Administration had indicated that GNP should grow by at least that much, if not more, and Congress would view such a rate as low” (pp. 53–54). “Chairman Burns then remarked that he wanted to endorse Mr. Maisel’s comments” (p. 54).

In perhaps the clearest statement that monetary policy was aimed at lowering the prevailing rate of unemployment, despite the risk of inflation, Brimmer was described as saying: “He would emphasize that the main problem facing the Committee was still one of assuring that the growth rates in real GNP projected by the staff would be achieved” (4/18/1972, p. 57). In addition (pp. 57–58):

Mr. Brimmer observed that there also was a continuing problem of inflation, despite the control program that had been in effect since mid-August 1971. ... The significant point was that the Administration had decided at that time—with the support of the Congress and the Federal Reserve—that the way to solve the problem of inflation was to apply direct controls rather than to slow the rate of economic growth and increase excess capacity. If more effective means of fighting inflation were needed they should be sought in tighter controls, perhaps along the lines the Chairman had suggested, and not through monetary policy.

Similarly, Governor John Sheehan “said he concurred in the views expressed by Messrs. Brimmer, Maisel, and Burns. He recognized that excessive growth in the monetary aggregates could fuel inflationary expectations and increase the inflation premium in long-term rates. But he also noted that in the fourth quarter, according to the staff projections, there still would be an unemployment rate of 5.4 per cent” (pp. 66–67). The directive called for “somewhat more moderate growth in monetary aggregates,” but the change was again small (p. 78).

We classify the move to highly expansionary policy in late 1971 and 1972 as a positive monetary shock. Policymakers decided that the current rate of unemployment was unacceptable,

and at least some FOMC members feared the expansionary moves could be inflationary. They also took actions to reduce interest rates and stimulate money growth. We think the most plausible date of the shock is January 1972. The statements about wanting to reduce unemployment and the possible consequences were particularly clear at this meeting. The calling of a special meeting, partial moves to a new operating procedure, and public statements about the need for more growth all contribute to a sense that this was a shock. Indeed, the actions parallel closely those taken in October 1979 described below.

Two features of this episode, however, give us pause. One is that real GDP growth was predicted to rise noticeably at the time of the shock. We would ideally look for a change in policy starting from stable conditions. However, it appears likely that the forecasts were at least partly predicated on expectations of looser monetary policy. For example, the open market manager, in explaining why market interest rates fell following the August 15<sup>th</sup> announcement of the President's economic plan, hypothesized a "change from expectations that monetary policy would be tightening over the remainder of the year to expectations of neutrality or some easing in the months ahead" (8/24/1971, p. 40). Even so, it is important to control for pretrends in our empirical analysis to help compensate for the fact that output was rising before our identified shock.

The second worrisome feature is that while some FOMC members were clearly concerned that the move to rapid money growth would be inflationary, many were not. Partly, that was likely due to the wage and price freeze and the anticipated subsequent control measures. For example, Partee said at the November 1971 meeting, "we still expect a meaningful moderation in the pace of inflation and in wage-cost increases, aided by the implementation of Phase II of the economic stabilization program" (11/16/1971, p. 33). But it also reflected the economic model prevalent at the time, which held that demand pressures would not raise inflation until the unemployment rate was noticeably below 4 percent. The fact that both staff and FOMC members saw the monetary policy actions as likely to stimulate output substantially provides some comfort. It is clear that policymakers were seeking to further increase aggregate demand, starting from a fairly high level. Thus, the episode (again, with controls for pretrends) should provide a test of whether monetary expansion is indeed expansionary.

While January 1972 is the most obvious date for the positive monetary shock in this episode, a case can be made for December 1971. That is the first date of a clearly expressed desire to greatly increase money growth to reduce unemployment. However, there was less concern expressed the possible consequences for inflation, and thus it was not yet clear that what was occurring was a positive shock and not more conventional countercyclical policy. The other candidate date is April 1972, when policymakers continued their expansionary policy despite substantial actual and projected inflation. An argument against the later date is that monetary policy was turning very slightly less expansionary by April. On net, we conclude that January 1972 is the appropriate date.

#### **APRIL 1974**

In response to the oil embargo announced in October 1973, the FOMC initially emphasized the likely impact on output more than that on inflation, and so eased policy somewhat. In December 1973, for example, the *Minutes* described Federal Reserve Chairman Arthur Burns as saying that "it was highly important for the Committee to bear in mind the need for caution. Nevertheless, he would still argue that monetary policy could be a marginally constructive force .... True, monetary and fiscal policy might be unable at such a time to do much to expand output

by restimulating aggregate demand. Monetary and fiscal policy could, however, seek to limit the decline in aggregate demand” (12/17–18/1973, p. 72). At the same meeting, John Balles (President of the Federal Reserve Bank of San Francisco) remarked that “the System had no choice but to validate price increases that stemmed from supply shortages, because a failure to do so would probably result in unacceptable declines in production, income, and employment” (p. 84). And senior economist J. Charles Partee said, “it is reasonable to ask what public policy can do to cushion the weakness that we believe to be in immediate prospect. The problem is complicated by the fact that the inflation rate is now expected to be significantly higher .... Nevertheless, ... the case for some ameliorative action by the Government seems to me compelling” (p. 48). The monthly average federal funds rate fell from 10.78 percent in September 1973 to 10.01 percent in October, and then declined slowly to 8.97 percent in February 1974.

Monetary policymakers’ views began to shift in February 1974. Dallas President Philip Coldwell “said he still believed that inflation was the country’s primary problem” (2/20/1974, p. 71), and Kansas City President George Clay “commented that the current high rate of inflation could no longer be attributed mainly to special circumstances, such as the behavior of the energy and food components of the price index” (p. 37). Burns quoted from “a draft of the statement that he would present before the House Appropriations Committee on the following day”; the statement included, “public policy is now clearly confronted with a most difficult problem. Inflation cannot be halted this year. But we can move resolutely to establish this year a dependable framework for a gradual return to reasonable price stability” (p. 61).

Despite these expressions of concern, there was little sentiment at the meeting for any substantial shift in policy. Burns merely advocated “leaning on the side of caution” (2/20/1974, p. 82), as he had in December. J. Dewey Daane (a member of the Board of Governors) said that “he was discouraged that the System had made so little progress in the battle against inflation. However, he felt that the System could not do more than it had been doing—that it had done about as well as it could in a difficult period” (p. 68). Governor Andrew Brimmer summed up the situation best, saying that “Some members might believe that an unemployment rate in the neighborhood of 6 per cent was necessary—or tolerable if necessary—in order to dampen inflation; others might feel that such an unemployment rate was not acceptable, even though the inflation rate was in the neighborhood of 8 or 9 per cent. In his judgment, that question had to be confronted” (p. 43). As of February, the FOMC had not confronted that question.

By the March meeting, however, there were expressions of willingness to bear significant output costs to reduce inflation. Brimmer’s views were now clear: “The unemployment rate was higher than might have been expected, and certainly higher than he would have desired; he did not think it should be tolerated for an extended period. For the time being, however, it might have to be accepted if the desired results with respect to inflation were to be achieved” (3/18–19/1974, p. 145). Atlanta President Monroe Kimbrel “observed that, because of the need to deal with inflation, he would hope that the rate of monetary growth could be returned to the longer-run path by June while avoiding unreasonable disruption. ... [S]omewhat higher levels of the funds rate would be required; a price had to be paid sooner or later” (pp. 132–133). Alfred Hayes (President of the Federal Reserve Bank of New York and FOMC Vice Chairman) said that “some further period of weak output and rising unemployment seemed likely. Nevertheless, an effort to prevent that would surely bring about what the Chairman had referred to as ‘two-digit’ inflation” (p. 116). And when asked for his views on policy, Partee said that “he believed that the objective of holding down on the rate of monetary growth should be continued in order to dampen

inflationary pressures. ... [T]he pursuit of such a policy objective at this time, as always, involved the danger of precipitating a cumulative decline in economic activity” (pp. 126–127).

It is difficult to confidently identify an anti-inflationary shock from just this meeting, however. Some of the members’ concerns were expressed in terms of preventing inflation from rising (as in Hayes’s reference to the possibility that trying to avoid a recession could lead to “two-digit’ inflation”). Despite his willingness to accept higher unemployment, Brimmer “believed the Committee should neither tighten nor ease at this point” (3/18–19/1974, p. 145). And Burns counseled that “the Committee should avoid abrupt shifts in its policy stance” (p. 140). The committee adopted a policy that it expected to result in just a moderate increase in the federal funds rate (pp. 151–153).

The meeting in April provides stronger evidence of a fundamental shift in policy. Although the decision at the March meeting had not been described as a major shift, in April the members perceived policy as having tightened considerably since then. Manager of the System Open Market Account Alan Holmes reported “System open market operations over the period since the Committee last met were devoted to an increasingly begrudging supply of reserves to the banking system” (4/15–16, p. 26), and commented, “most market participants applaud what they consider to be a vigorous anti-inflationary campaign by the Federal Reserve” (p. 28). Burns referred to “the considerable tightening that had occurred” (p. 102), and Partee “observed that he ... believed that monetary policy had been tightened quite a lot in recent weeks, given the basic economic situation” (p. 100).

Much more importantly, there were even clearer expressions of unwillingness to accept the current rate of inflation than in March. Brimmer said that “Because he was particularly concerned about the long-run inflationary situation, he felt that the Committee’s deliberations should focus on how monetary policy could reenforce the efforts already under way to restrain inflation. The objective of monetary policy should not be to revive housing or to assure any particular short-run behavior of the unemployment rate” (4/15–16/1974, p. 82). He went on to say that he “believed that a higher Federal funds rate was necessary. ... He recognized that such a policy would result in a slower rate of recovery in economic activity over the next 9 to 12 months than [under easier policy], but the cost had to be paid” (p. 86). Kimbrel said simply that he “held the same policy views that Mr. Brimmer had expressed” (p. 87). Hayes “observed that, in his view, persistent and virulent inflation was the overriding problem” (p. 87), and St. Louis Vice President Eugene Leonard said that “this would be an excellent time ... to get hawkish on inflation” (p. 96).

Burns described his own views by citing those of George Mitchell, who was the Vice Chairman of the Board of Governors. Mitchell “observed that, from the point of view of monetary policy, it was the underlying 5 to 6 per cent rate of inflation that was of concern” (4/15–16/1974, pp. 66–67), which was an unusually sharp statement of a desire to address the current rate of inflation. With regard to policy, his view was that “the market had become aware of the System’s policy course .... The System had now demonstrated by the recent changes in monetary policy that it was on the side of the angels, but it could overdo it. Additional tightening—on top of the actions of the past few weeks—would be excessive” (pp. 88–89; from the context, it is clear that “on the side of the angels” meant anti-inflationary). Burns “observed that his own position, in general, had been well stated by Mr. Mitchell. A little more tightening in policy was indicated, but in view of the considerable tightening that had occurred, he would be inclined to pause for a while before making any major move” (p. 102). The Committee in fact chose a policy course tighter than the “little more tightening” recommended by Burns: despite Burns’s advocacy of the language in the

intermediate of the three versions of the directive drafted by the staff (pp. 102–103), the Committee adopted the language of the toughest version (p. 109). Thus, by April policy had shifted substantially.

The evidence from subsequent meetings reinforces this conclusion. In June, numerous participants were willing to skirt the edge of recession or risk significant disruptions in order to reduce inflation. Philadelphia President David Eastburn said that “In his view, the Committee should go as far as it could without precipitating a liquidity crisis. Such a course might sound like brinksmanship, and perhaps it was; certainly it carried risks” (6/18/1974, pp. 44–45). Cleveland President Willis Winn “was willing to maintain the monetary restraint needed to accomplish the Committee’s objectives even at the price of the failure of an institution or two, because he had no real fear that such failures would cumulate into a general financial collapse” (p. 54). Brimmer “would want to aim for a longer-term growth rate in real GNP that was below the trend rate but above zero. He hoped the growth rate would not be permitted to fall below zero, and he noted that the margin above zero in the staff’s projections was rather thin” (p. 59). Minneapolis President Bruce MacLaury “believed the Committee was being forced by circumstances to choose between recession on the one hand and a totally unacceptable rate of inflation, which could lead to collapse, on the other hand. Given such a choice, he was prepared to maintain prevailing money market conditions, even though he recognized that such a course probably would make a recession—on his definition, at least—likely and perhaps unavoidable” (p. 64). And Boston President Frank Morris “expressed the view that under present circumstances it should be the Committee’s policy to apply as much financial restraint as possible without producing a generalized financial crisis” (p. 70).

Burns’s views on this issue at this meeting came through most clearly in an exchange with Partee. Early in the meeting, Partee said, “Slow growth in the economy seems an appropriate and necessary objective of public policy, given the severity of our inflationary problems” (6/18/1974, p. 14). Later, Burns said that he “had interpreted Mr. Partee’s earlier statement to suggest that the absence of any great expansive thrust in the economy was, by and large, a good thing—that an economic boom would be highly troublesome under present conditions, and a mild growth rate was to be preferred to a rapid one. He asked whether that interpretation was correct. Mr. Partee replied that it was. In his view, the desired rate of growth in real GNP was below 4 per cent, but above zero” (p. 57; 4 percent was roughly the Committee estimate of the growth rate of potential output).

A theme of the July meeting was a desire to keep growth barely positive in order to bring inflation down. Partee said, “our projection now foresees a real growth rate of below 1 per cent over the next year—an outcome which would appear to be unacceptable from a public policy point of view” (7/16/1974, p. 22). The members, however, largely viewed that outcome as desirable. Robert Mayo (President of the Federal Reserve Bank of Chicago) said that he “would question Mr. Partee’s judgment that a real growth rate of less than 1 per cent would be unacceptable to the public. ... He thought the public at present would be prepared to accept a 1 per cent growth rate in GNP over the next year if that were required for better control of inflation” (pp. 25–26). Hayes “agreed with Mr. Mayo that the public would be willing to accept slow growth in real output in order to achieve effective inflation control” (p. 27), and St. Louis President Darryl Francis “shared the feelings expressed by Messrs. Mayo and Hayes about the greater willingness of the American public to accept the hardships necessary to control inflation” (p. 29). Balles “remarked that the staff’s outlook for the economy [implied that] over the next 12 months the growth rate in real GNP would be 1 per cent or less .... He would urge the Committee to face up to that unpleasant truth

and hold to its present course; if it failed to do so, he feared that it would simply make no progress in reducing the rate of inflation” (p. 63). A few members (Governors Henry Wallich, Jeffrey Bucher, and John Sheehan, and Richmond President Robert Black) wanted growth to be slightly higher than this, but still modest. Wallich, for example, said that he “would prefer a growth rate about half way between zero and the economy’s potential” (p. 36).

It was again an interaction with Mitchell that showed Burns’s views. Mitchell remarked that he “expected that the Committee members who were scheduled to appear at the House Banking and Currency Committee hearings would find that members of that Committee, at least, did not share the view that the American public would accept a 1 per cent growth rate for real GNP” (7/16/1974, p. 33). In response, Burns “remarked that he had received a different impression in his appearance before the House Ways and Means Committee yesterday. He had expressed his view that little or no economic growth could be expected for some months, and that that outlook should be accepted as a matter of policy under present circumstances.” He added that “None of the members of the Ways and Means Committee, not even the more liberal members, expressed any shock or criticism” (p. 34).

In the September meeting, Burns proposed a thought experiment: “he suggested that the members ... might consider ... what might be the desirable course of economic activity over the next 6 to 9 months—whether, in the present circumstances, it would be better if activity remained near the current level, with any further decline held in check, or whether it would be better if activity revived promptly and recovered significantly” (9/10/1974, p. 56). Although a few members pointed out that monetary policy did not have the ability to affect the economy that quickly, almost everyone who expressed a clear view preferred an outcome closer to the first option than the second. This group included Mayo (p. 60), Eastburn (p. 63), Kimbrel (p. 66), Sheehan (p. 69), Governor Robert Holland (pp. 71–72), Bucher (pp. 74–75), Black (p. 77), Balles (p. 81), and Winn (p. 85). A few participants—Coldwell (p. 61), Wallich (p. 68), and Morris (p. 83)—preferred outcomes roughly midway between Burns’s two hypotheticals. Burns’s view was that he “would not wish to see a prompt recovery in economic activity. If recovery began promptly, economic activity would turn up at a time when inflation was continuing at a two digit rate” (9/10/1974, p. 65).

Monetary policymakers backed their concerns with actions. The FOMC raised its target range for the federal funds rate at every meeting from March through June 1974. The monthly average federal funds rate rose from 8.97 percent in February to 9.35 percent in March, and then by roughly a full percentage point in each of the next four months, reaching to 12.92 percent in July. In addition, the Board of Governors raised the discount rate (which was not a major tool of policy in the period) by 50 basis points in April (*Annual Report of the Board of Governors of the Federal Reserve System*, 1974, p. 112).

Thus, there was clearly a shift to anti-inflationary monetary policy, with a willingness to accept significant output costs to bring inflation down, in early 1974. And although the economic outlook was already weak, monetary policymakers did more than passively accept an output decline they thought was already underway. They viewed themselves as having tightened substantially starting at or just after the March meeting, and they made a series of significant tightening moves in the subsequent months. And throughout the Spring, they did not believe a significant downturn was in prospect on its own. For example, Burns said in March that, “While a slowdown or recession in economic activity clearly had occurred, it was confined almost entirely to the automobile industry and residential construction” (3/18–19/1974, p. 121), and that he “saw

no evidence of a cumulative decline in activity and doubted that one would occur” (p. 149). In April, Morris “observed that a few months ago he had felt a need to give a lot of weight to the possibility—which he had viewed as serious—of a cumulative decline in economic activity. Now, on the basis of the evidence of the past 8 weeks, he felt that such a risk had been largely eliminated” (4/15–16, 1974, p. 93). And in May, Gramley said, “Data becoming available since the last Committee meeting appear to confirm the expected bottoming out in aggregate economic activity” (5/21/1974, p. 7).

Because the change in policy did not occur all at once, one can make a reasonable case for March, April, or June as most appropriate for the date of the shift. However, because the evidence is only moderate in March and became quite strong in April, we judge April to be the best choice. We therefore date a shift to anti-inflationary monetary policy in April 1974.

### **AUGUST 1978**

We identify another shift to anti-inflationary policy in August 1978. Policymakers in this episode expressed great concern about inflation and a strong desire to lower it. This shift fits our definition of a contractionary shock because FOMC members were quite explicit that they were willing to accept output consequences to bring the reduction in inflation about. At the same time, this is perhaps one of the milder shocks. Policymakers were willing to reduce real growth substantially, but a number of FOMC members were very clear that they did not want to reduce growth enough to cause an outright recession.

G. William Miller came in as Federal Reserve Chairman before the March 1978 meeting of the FOMC. The last few months of the Burns chairmanship can best be described as a holding pattern. Though policymakers expressed concern about inflation, there was relatively little interest in taking actions to reduce it.

At his first meeting on March 21, 1978, Miller said: “[A lower growth rate] is something that I think many of the economic advisers in the Administration are now willing to accept because the alternative is to continue to see the dollar under pressure, and ... that in itself feeds inflation” (3/21/1978, p. 9).<sup>6</sup> Miller expressed hopes that the Administration would come out with a program to fight inflation. He said: “if it’s not done, inflation is going to be left to the Federal Reserve and that’s going to be bad news” (p. 33). He continued: “If other actions aren’t taken, we would have to continue the process, which we will no doubt do. And if we do, inevitably that will lead to a slowing down in capital investment and in homebuilding and it will lead to a recession” (p. 34). This discussion suggests that while Miller was not yet ready to take such actions, he was aware that output consequences would likely be necessary if inflation were to be reduced through conventional monetary actions.

At the April FOMC meeting, the committee raised the funds rate in response to very rapid money growth. At the time, there was relatively little discussion of slowing growth to get inflation down. Vice Chairman Paul Volcker came close to not voting for the policy because he was uneasy about the ½ point rise in the top of the funds rate range. He said, “I think 7–½ percent would be a big move. And I am not at all sure the Committee is ready for that” (4/18/1978, p. 51). The funds rate range was nevertheless raised to 6¾ to 7½ percent, but with the understanding that the open market desk would not aim for a funds rate above 7¼ without further consultation.

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<sup>6</sup> Our narrative source from 1976 on are the verbatim *Transcripts*.

On a conference call in early May, Miller opined that “I think what we have been doing recently in terms of monetary policy has been prudent and has been perceived to be rather decisive. The move up 1/2 percent in short order on the federal funds rate, as you know, has been interpreted as aggressive action but very much called for in the circumstances. It actually has been well received in the marketplace as positive evidence of our determination to take action to curb inflation and to be [responsive] to current conditions” (5/5/1978, p. 4). At the subsequent FOMC meeting on May 16<sup>th</sup>, he reiterated that “our policy direction for the last few months has been directed toward slowing the economy as a means of slowing inflation” (5/16/1978, p. 30). In response to Miller’s recommendation to hold pat, Philip Coldwell (President of the Federal Reserve Bank of Dallas) said: “I think we run a greater risk of a bigger inflationary blow-up by not taking a small judicious action in tightening further now. ... [I]n my view we need to slow this GNP down a bit more and I think the inflation problem is our greatest problem” (p. 31). This view did not yet carry the day.

At the June 20, 1978 meeting, much concern was expressed about inflation and there was some sense that output consequences would likely be necessary to reduce it. In the discussion, Boston President Frank Morris said, “Now, you might argue perhaps that a mild recession—if it could be kept mild enough—might not be all that bad. That’s off the record, I assume” (6/20/1978, p. 24). Miller suggested a more mild course, saying: “I do think that what we do on monetary policy is critical. If we should crunch the economy, we can bring on a recession. If we use a steady and sure hand to restrain the growth of the aggregates and bring it down at a more measured pace, then I think we see conditions for bringing the rate of growth down to a more sustainable level that will counter inflation but avoid the overshoot that would carry us into a recession” (p. 28). Philadelphia President David Eastburn countered, “Well, I think there are risks in further tightening, but I think they are risks that we have to take” (p. 30). The committee agreed to another 25 basis point increase in the federal funds rate. Miller urged against further tightening at the July meeting, saying, “I guess my concern here is that continued restraint, while logical in economic terms, is likely to trigger a recession at this time” (7/18/1978, p. 42).

At the August 15 meeting, several FOMC members said that growth was clearly slowing. For example, Miller said, “[I wonder] if we all could at least get that general feeling that the economy is slowing [but] it’s still fairly well balanced” (8/15/1978, p. 9). San Francisco President John Balles said, “I guess I’ll call a spade a spade; the numbers we have would actually constitute a growth recession” (p. 13), and Morris said, “We would look for 1-1/2 to 2 percent real growth during the period you suggested” (p. 15). Coldwell went further, saying, “I think the slackening that has occurred from the second quarter was expected and, to a considerable extent, desirable. Inflationary pressures to me are building faster” (p. 16). Miller reported that the slowing economy and slowing money growth had led to predictions that the FOMC would not tighten further at the August meeting. But, his view was: “we have the aggregates moving in the right direction and we ought to keep them moving in that direction and not let them bounce back up on us” (p. 20). J. Charles Partee (a member of the Board of Governors) disagreed, saying, “We are having more inflation, and typically monetary policy has brought recessions by reacting to the inflationary threat; and I think that’s the danger again” (p. 24). This suggests that he believed the actions contemplated could have important consequences for real output. Balles argued that the actions were nevertheless important. He said: “I think we are facing a crisis of confidence, and not just in the international field; I see it developing internally within this country in terms of a growing fear of inflation getting out of hand on the upside. And I think a small but prompt and decisive move on our part would, therefore, be well advised” (p. 26). The committee voted in favor of another slight increase in the funds rate. The

fact that they took this action despite predicting output consequences because they wanted to lower inflation clearly fits our definition of a contractionary shock. Since this is the first month when the criteria are clearly met, we date the shock in August 1978.

The September FOMC meeting had a feel very similar to the August meeting. Volcker said: “I don’t think that change is big but we seem to be entering a situation here that’s not totally satisfactory—to understate it. Some slowdown seems to be reasonable, even a little more than the staff projected. I think it’s a tolerable kind of situation here, given the inflationary problems” (9/19/1978, p. 13). St. Louis President Lawrence Roos seemed to be pushing for an even more forceful contractionary policy, saying, “is our monetary policy responsibility such that we should maybe discuss whether we’re satisfied to see the economy drift into an 8 percent inflation rate? And if not, are there things that we can do to affect this?” (p. 17). Miller’s reply was, “when I came here six months ago the outlook for the growth of the economy in real terms for the current calendar year was 4.7 percent. The staff projection is now 3.5. I would say that one of the main forces in that reduction has been monetary policy. So, have we had any positive contributions to the slowing of the forces of inflation? I would say there has been a conscious effort” (p. 17). While this statement does not suggest a willingness to force growth very low, it does indicate an intention to deliberately slow growth to reduce inflation.

Through the rest of 1978, the committee continued to raise the funds rate despite slowing growth and fears of a recession. The funds rate rose from 6¾ percent in March 1978 to 10 percent in December. In October, Miller urged slow, steady action. He said: “What we need is a steadiness of purpose. Inflation built up over twelve years; we are going to have to wring it out over five to seven years. If we think we can do it in a quarter or two quarters, we are fooling ourselves. My worry is that once again we will use high amplitude action to deal with what really requires a dampening of the process. The high amplitude action we got in the early ’70s was not perceived as solving the problem” (10/17/1978, p. 23). On November 1, 1978, the FOMC raised the funds rate 50 basis points and the Board of Governors raised the discount rate 100 basis points as part of a coordinated action with the Treasury to strengthen the dollar (*Federal Reserve Bank of New York Quarterly Review*, Spring 1979, p. 65). At the FOMC meeting a few weeks later, Morris said: “I think we’re going to see an upsurge in demand for money and the question is: Will this Committee accommodate this upturn over the next few months? [In that] case the recession would be put off one or two more quarters, but it would be bigger when we got there. Or are we going to refuse to accommodate it, in which case the recession would come sooner and be milder. My own feeling is that the country would be better off if we take a posture of not accommodating an increase in the demand for money and have a mild recession beginning in the second quarter” (11/21/1978, p. 18).

In December, Coldwell said, “Well, Mr. Chairman, it seems to me that we have not made enough headway toward slowing this economy down” (12/19/1978, p. 9). Robert Mayo (President of the Federal Reserve Bank of Chicago) agreed, saying (p. 15):

Yet I think we have no alternative on the psychological side but to maintain our resolve in keeping restraint in place even at the chance that we’re going to be accused of causing any recession anyway at this point. ... I think we still have to edge [rates] up just a little tighter partly because it’s expected of us in the whole aura here of worrying about what to do about inflation. We are the last bastion in the eyes of a great many people and I think it would be a mistake just to hold still right now. There are risks but I think we have to tighten a little further—not dramatically like we did November 1, but a little further.

Volcker echoed the view that they had to continue tightening despite the risks to the real economy. He said: “When one looks at those risks, I don’t think we have any choice. I don’t think we can afford to sit here passively at this time. I think we are maximizing the risks of both inflation and recession—and severe recession—if we aren’t alert to moving in a somewhat more restrictive direction” (p. 23). Miller seemed to acquiesce, saying: “And [we ought] to be prepared to continue the process we’ve been at until we find that point where there is a smooth and gradual turndown in the economy without major disruptions” (pp. 23–24).

Overall, the narrative record in this period shows a clear sense that the current rate of inflation was viewed as unacceptable and the committee was willing to accept output losses to reduce it. Monetary policymakers continued to take contractionary actions even as output growth began to slow noticeably and projections were for low growth or perhaps a recession. Thus, this fits our criteria for a contractionary monetary policy shock. We find these criteria were first clearly met in August 1978, and so choose that as the date of the shock.

There are, however, two other possible candidates for the date of the shock. One is May 1978, when Miller said they had taken action to reduce inflation and talked about slowing growth. The other is June 1978, when one member suggests a mild recession might be desirable and many others talk about the need to slow growth to reduce inflation. Of these two, we think June is the more plausible. In May, there were relatively few statements along the lines of willingness to accept output consequences from members apart from the Chairman. The June date has some appeal, but there it is still unclear just how seriously FOMC members were about being willing to take output consequences. Miller, in particular, appeared to be wavering. Thus, we prefer the August date, when the criteria for a shock are clearly met and widely agreed to.

### **OCTOBER 1979**

The October 1979 monetary action is one of the most well-known Federal Reserve policy moves. The transcripts confirm that there was a decision to take actions to reduce inflation and a willingness to accept output consequences to accomplish this goal. However, studied in light of the discussion in 1978, the change in October 1979 appears to be more an evolution in policy than the revolution it is sometimes portrayed as being. In October 1979, monetary policymakers renewed their focus on inflation reduction after losing focus somewhat earlier in the year. Importantly, the October move involved a change in operating procedures designed to emphasize their commitment.

Over the first two-thirds of 1979, there was much discussion of slow growth and the likelihood of a recession. For example, at the May 22, 1979 meeting, Nancy Teeters (a member of the Board of Governors) said, “I find it interesting that everyone is saying that they agree with the staff projection but we’re all, almost to a person, talking recession for the first time” (5/22/1979, p. 23). In contrast to late 1978, there were some calls for easing monetary policy and little interest in tightening. For example, at the July 11, 1979 meeting, Frank Morris (President of the Federal Reserve Bank of Boston) said, “It seems to me, with the economy clearly in a recession, that we ought to start moving to try to mitigate the amplitude of the recession” (7/11/1979, p. 43). Following President Carter’s speech on the economy on July 15, 1979, the dollar came under strong downward pressure. On a conference call, the FOMC agreed to let the funds rate rise slightly (7/19/1979, p. 6).

Paul Volcker was in place as the new Federal Reserve Chairman at the August 14, 1979 meeting. Volcker acknowledged that “It looks as though we’re in a recession” (8/14/1979, p. 20). He went on to say (pp. 21–22):

I do have the feeling—I don’t know whether other people share it or not—that economic policy in general has a kind of crisis of credibility, and we’re not entirely exempt from that. There is a similar question or a feeling of uncertainty about our own credentials. So when I think of strategy, I do believe that we have to give some attention to whether we have the capability, within the narrow limits perhaps in which we can operate, of turning expectations and sentiment. I am thinking particularly on the inflationary side. [Can we] restore the feeling that inflation will decline over a period of time and that that’s a prime objective of ours? ...

I don’t know what the chances are of changing these perceptions in a limited period of time. But as I look at it, I don’t know that we have any alternative other than to try.

He received strong support from Dallas President Philip Coldwell, who said: “We have got to break out of this circle, and breaking out of it I think means we have to refuse to validate some of these higher costs and prices. It’s going to be an expensive process for us; it’s going to be a traumatic process for some of our people. But I think the threat of an intensification of recession, while a cautionary flag, still is not balanced against the costs of inflation, which are now in the double-digit range and have been there for some time” (pp. 27–28). Likewise, Chicago President Robert Mayo said: “So for foreign reasons, namely the value of the dollar, and for inflation reasons—and not only for substantive reasons but for symbolic reasons—I think this is an opportunity, while everybody is hating inflation so much, to move ahead and to tighten somewhat” (p. 31). Neither Volcker nor other committee members recommended dramatic action, but the funds rate was raised 25 basis points (or a bit more). In response to high money growth, the funds rate was allowed to rise another  $\frac{3}{8}$  of a percentage point at the end of August after a telephone consultation (*Federal Reserve Bank of New York Quarterly Review*, Summer 1980, p. 59).

The September 18, 1979 FOMC meeting is interesting mainly as a prelude to the next meeting’s actions. In a revealing back and forth, Lawrence Roos (President of the Federal Reserve Bank of St. Louis and a confirmed monetarist) said: “Maybe I am out of order to raise this now, but couldn’t there be a discussion again of whether or not our traditional policy of targeting on interest rates, in spite of the possible adverse consequences in terms of money growth, [is appropriate]? Shouldn’t this be given another look in view of everything you’ve said and in view of the less than happy experience that the FOMC has had over the past years in achieving its goals of stability in terms of the inflation problem?” (9/18/1979, pp. 13–14). Volcker replied: “I presume that today, for better or worse, we have to couch our policy in what has become the traditional framework. But I think it is a very relevant question, which has come up from time to time, and I think we should be exploring it again in the relatively near future. And I would plan to do so” (p. 14). Clearly, Volcker was actively contemplating a switch in the operating framework. One can also see Volcker worrying about the timing of more aggressive anti-inflationary policy. He said: “we have a timing problem if the business outlook develops more or less as projected, in that we don’t have a lot of flexibility—at least flexibility in a tightening direction—in terms of what we can do in the midst of a real downturn” (p. 33). FOMC members were quite split on whether to keep fighting inflation or switch toward mitigating perceived decline in real output. In the end, the committee voted to raise the funds rate  $\frac{1}{8}$  of a percentage point. Four members dissented (p. 43).

At an emergency meeting of the FOMC that Volcker called on October 6, 1979, Volcker began by saying (10/6/1979, p. 5):

On the price front, expectations have certainly gotten worse rather than better. Even though the price news is bad, it does not in my judgment as yet reflect a spreading of the whole inflationary force into areas outside of energy. ... [W]e're dealing with a situation where that's an imminent danger on the one side as is the possibility of a recession on the other side. ... There is clearly no risk-free course for us here; there are risks on both sides. The idea that we can absolutely thread the needle between the risks is probably a nice hope but it may be an illusion. At this stage you've got to place your bets one way or the other and move.

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.

Volcker described two possible strategies: one would involve using the traditional operating procedures more aggressively; the other would be to target the money supply closely and let the funds rate fluctuate over a much wider band. The new approach had been discussed in a memo circulated before the meeting. Volcker saw both risks and benefits to the new approach. He said: "So there may be something to [be gained in] a change in the psychological atmosphere that in some sense will give us more bang for the buck, as I put it. It's possible. It's an easier political sale, and we are obviously moving into an area that is sensitive, to say the least. We do have a background of some Congressional thinking that puts great emphasis on the money supply targets. So, to the extent that we accept that emphasis one might argue that we will get more support" (p. 8). Member after member endorsed the new approach.

More important for our purposes, there was widespread agreement that members wanted to reduce the current rate of inflation and were willing to accept the output risks of the new approach to bring the reduction about. For example, Morris said, "Despite my view that the recession is going to be sharp, I think we are in a situation where we have to be willing to do something dramatic today" (10/6/1979, p. 14). Governor Henry Wallich pointed out, "I think the main argument in favor of the reserve strategy is that it allows us to take stronger action than we probably could by the other technique. We are much more constrained in the other technique by the appearance of very high interest rates. In the new strategy interest rates become almost a by-product of a more forceful pursuit of the aggregates. I think we need stronger action because of the resurgence in inflation and the behavior of the aggregates and the dollar. I realize that this may involve a higher cost in terms of the length and depth of a recession" (p. 19). Even Governor Emmett Rice, who at the previous meeting had said, "I think it's time to give more weight to what is happening in the real economy" (9/18/1979, pp. 28–29), was in favor of the change in policy. He said: "Obviously, there are high risks involved; these risks have been outlined. But in the current circumstances I think these risks are acceptable" (10/6/1979, p. 22). The money growth targets were tightened substantially. The range for the federal funds rate, which had been 11¼ to 11¾ percent after the September meeting, was set at 11½ to 15½ percent. The vote for the new approach and the new targets was unanimous (pp. 54–55).

The episode clearly fits our definition of a contractionary monetary policy shock. The FOMC was not satisfied with the current level of inflation and was taking (quite extreme) actions to reduce it. The members understood that the moves were likely to accentuate the recessionary tendencies the economy was already showing. We date the action in October 1979.

The first several months under the new operating procedure were tumultuous. The federal funds rate quickly rose to the top of the range (15½ percent) as money growth ran high in late 1979 (*Federal Reserve Bank of New York Quarterly Review*, Summer 1980, p. 62). Volcker appears to have been disappointed that inflation expectations did not turn around quickly. At the January 1980 FOMC meeting, he said: “I don’t think we’ve made as much expectational progress, if I can put it that way, as conceivably might have been hoped. Indeed, in some sense we have not made as much progress on interest rates; one might have hoped that they would be coming down a little more clearly by this time. Looked at from an October point of view, we haven’t seen those developments that might have been anticipated” (1/8–9/1980, p. 32). As money growth continued to run high, the FOMC increased the top of the funds rate range from 15½ to 18 percent in a series of steps in February and early March (*Federal Reserve Bank of New York Quarterly Review*, Summer 1981, p. 68). FOMC members remained strongly in favor of the actions despite rising fears of a recession. For example, on the conference call on March 7, 1980, Kansas City President J. Roger Guffey said: “I happen to believe that we’ve come a long way so far and I think now is not the time to hesitate or lose our courage. As a result, I think we ought to give the Desk whatever latitude seems necessary, and that would suggest an 18 percent upper limit” (3/7/1980, p. 7).

In mid-March, the Board of Governors, at the behest of the Carter administration invoking the Credit Control Act, imposed a number of credit constraint measures. In addition, at the meeting on March 18, 1980, the FOMC raised the top of the federal funds range to 20 percent. Volcker argued that the prospect of another bulge in money growth in April and other developments “incline me toward resolving doubts in the direction of greater tightness in the very short run rather than the opposite. The worst thing we could do is to indicate some backing off at this point when we have an announced anti-inflation program” (3/18/1980, p. 36). Similarly, Wallich said, “I am aware of the repercussions of a firm policy at savings banks, small commercial banks, and elsewhere. ... But we should not be obsessed by the concern that the recession may last a little longer or even be a little deeper” (p. 31). Governor J. Charles Partee was one of the few members arguing the other side, saying, “I would hate to have somebody ask me what I was doing during the crash and have to remark that I was defending our credibility. The people who say let’s keep those interest rates up there, regardless of what happens, are really walking into a major trap for the economy and for the Federal Reserve” (p. 34). Even he, however, ended up voting for further tightening and the rise in the funds rate range (p. 46).

### **MAY 1981**

Our reading of the transcripts is that there was another contractionary monetary policy shock sometime in the period December 1980 to July 1981. In many ways, the back-to-back shock within this episode is quite similar to the one-two shock in August 1978 and October 1979. In each case, the initial contractionary shock gave way to a period of expansionary policy and loss of focus on inflation reduction—before being resurrected by a new commitment. In the case of the 1980/81 shock, the renewed focus on inflation reduction and the explicit willingness to accept output losses was very strong—arguably stronger than in October 1979.

The shift in the FOMC’s focus away from inflation reduction began very soon after the imposition of credit controls in March 1980. By late April 1980, both the money supply numbers and the real economy were headed down rapidly. Chairman Paul Volcker explained some of the developments, saying: “Let me say in connection with all of these confusing money figures and related numbers, that we took some actions in March that were unusual, to say the least, on

consumer credit, on the voluntary program, on the money market funds, and all the rest. And we had interest rates at levels nobody ever saw before. I suspect this has led to some uncertainty and adjustments of a magnitude we can't quantify very well" (4/22/1980, p. 9). The discussion within the FOMC quickly changed from raising interest rates to reduce money growth to how quickly the federal funds rate should be allowed to drop in response to low money growth. For example, John Balles (President of the Federal Reserve Bank of San Francisco) said: "It certainly took a great deal of courage for this Committee to let interest rates rise to these extraordinary levels that we've seen, and I think that was the right thing to do. ... I think we should be equally courageous on the other side, while sticking to our monetary targets. If that implies that interest rates are going to decline, that doesn't bother me one bit" (pp. 15–16). Frederick Schultz (Vice Chairman of the Board of Governors) was more nuanced, saying, "But while I want interest rates to go down ... I really am concerned about the speed with which they go down" (p. 20). On a conference call a week later, J. Charles Partee (a member of the Board of Governors) was the most outspoken, saying, "I think there is a fair chance that this money supply [behavior] is telling us that we're now entering into the sharpest phase of recession we've seen any time since World War II. And if that is the case, to maintain interest rates [at their current high levels] and thereby destroy the reserves necessary to support reasonable monetary growth is a grossly wrong policy for the Board or the FOMC to follow" (4/29/1980, p. 4). His comments received widespread support (pp. 5–6), but drew criticism from Volcker (pp. 6–7). Even so, there was widespread agreement that the funds rate should be allowed to drop toward its lower limit (13 percent), which was dramatically below its high in March.

The rapid fall in output in the second quarter of 1980 led to further slowing of money growth and further reductions in the bottom of the funds rate range. At the May 20, 1980 FOMC meeting, Schultz lamented: "I am amazed, and I must admit disturbed, at the fact that I haven't heard the word inflation mentioned around this table this morning. My word, it was only two months ago that we were wild about the subject and terribly concerned about it. I admit that we're in an unusual period. Things have moved exceptionally fast. But I don't think we can seriously say that we're out of the woods on inflation. And it seems to me that at least we ought to continue to think about it a little" (5/20/1980, pp. 23-24). This is consistent with the notion that the committee had lost its focus on inflation reduction.

This lack of focus was also evident as output stabilized and the monetary aggregates surged in the summer and fall of 1980. Governor Henry Wallich summarized the situation in August as: "The downturn went fast but didn't go very far. It caught itself pretty fast, and we are already beginning to feel the counterforces on the other side. ... In other words, this has been a surprisingly mild recession. It is very unlikely to have [set the stage for] much long-term improvement if in fact it now takes off from here" (8/12/1980, p. 19). At the September FOMC meeting, Volcker expressed relief that people were less hawkish on policy than he had feared. He said: "I was somewhat concerned that we would come out and say, in effect, that we're throwing down the gauntlet and that we would make damn sure that we would meet our targets in a very acceptable way and take all the risks on the side of interest rates and the economy. ... And I would have great reservations about that kind of approach" (9/16/1980, p. 41). He recommended that they "play it neutrally at the moment" (p. 41).

At the October 1980 FOMC meeting, Volcker was quite clear-eyed about what had happened over the previous six months, saying: "Now, if one wanted to be nasty and critical of the Federal Reserve, one would say we reacted or pressed too hard in February and March when money supply growth was high. The result was a very [weak] money supply in April and May. And we pressed

much too hard against the decline in the money supply in April and May with the result that it went up [rapidly] in August and September” (10/21/1980, p. 15). Volcker urged no reaction to the current rapid money growth, and there was little change in the money or interest rate targets. Four members dissented—all in the direction of wanting more contractionary policy (pp. 55–56).

Starting in December 1980, we see a renewed commitment to reducing inflation. In a statement that is essentially a paraphrase of our definition of a monetary policy shock, Lawrence Roos (President of the Federal Reserve Bank of St. Louis) said: “Are we willing to tolerate—and in fact contribute to—a certain amount of further economic distress in the months and the year ahead if that is necessary to break the back of inflation? And I would say yes” (12/18–19/1980, p. 36). Governor Lyle Gramley, who was often on the more dovish side, said: “And the outlook for growth in real terms over the whole year is very, very poor. The reason it’s poor, I think, is basically because we have adopted targets for growth of the monetary aggregates that in a world with 10 percent or so inflation, just don’t provide any room for real growth. And I don’t think we ought to back away from that. That’s what we’ve been trying to achieve with our policy this past year” (p. 49). Volcker also said “We have been put in a position or have taken the position—wisely or not, but I think probably wisely given the economic conditions—that we are going to do something about inflation maybe not regardless of the state of economic activity but certainly more than we did before in looking at it in the form of avoiding excess demand” (p. 61). The funds rate range, which had been 9 to 15 percent as recently as late October, had risen over November because money growth was high. At the December meeting, it was set at 15 to 20 percent (*Federal Reserve Bank of New York Quarterly Review*, Summer 1981, p. 69).

Early in 1981, money growth appeared to be low, though regulatory and definitional changes greatly complicated the interpretation. The low numbers led to some vacillation about policy and loss of passion about inflation control. In late April, revisions to the numbers (including new seasonal adjustment factors) led to high current and predicted money growth. This, combined with much higher real growth in the first quarter of 1981, appears to have shaken the committee. At a conference call on May 6, 1981, the committee agreed to let the funds rate trade noticeably above the 18 percent top of the range included in the directive (5/6/1981, p. 5). By the meeting on May 18, a number of members expressed a desire for firm policy. Gramley summed up the mood of the committee as: “This is a Committee that follows a tough policy. It’s only a question of how far we go” (5/18/1981, p. 32). Governor Nancy Teeters expressed concern about where her colleagues were headed, saying, “I think we have to continue to restrain [the economy]. However, I am very worried that we will restrain it to the point that we will get interest rates that are going to be really damaging to all segments of the economy” (p. 10). Minneapolis President Gerald Corrigan said of the move to tighter policy: “there are some risks here, and I think we have to be prepared to take some risks. ... And finally, like Governor Rice, if we have to take a bit of a slowdown or a decline in the economy, which we may have to do, I’d rather do it now than later” (p. 30). The committee opted for a high range for the federal funds rate (16 to 22 percent) and a very low target for M-1B growth (*Federal Reserve Bank of New York Quarterly Review*, Spring 1982, p. 44).

At the meeting in early July 1981, several members were explicit that they were willing to accept output consequences to reduce inflation. Wallich, for example, said, “I think it would be surprising if we got out of this inflation without more sacrifice than is implied in the optimistic interpretation of our situation” (7/6–7/1981, p. 31). Volcker said, “I haven’t much doubt in my mind that it’s appropriate in substance to take the risk of more softness in the economy in the short run than one might ideally like in order to capitalize on the anti-inflationary momentum to

the extent it exists” (p. 36). Schultz was even more explicit, saying, “So, to me, the next four quarters are really crucial. It is vital that we have a continued policy of monetary restraint. ... There is a risk in what I really would like to see, which is a period of very slow growth or a mild recession, and the risk is that it could get out of hand on the down side” (p. 45). Both Governor Emmett Rice and Kansas City President J. Roger Guffey, two more dovish FOMC members, also supported Volcker’s view. Guffey said: “Historically, the Federal Reserve has always come up to the hitching post and then backed off simply because the Administration and the Congress have thrown bricks at us or have not been supportive of a policy of restraint. Through the course of recent history at least, we’ve backed off and we’ve made a mistake each time. I think we have an opportunity this time to carry forward what we should have done before” (p. 55). The range for the funds rate was reduced by 1 percentage point on both ends, but it remained very high (p. 80).

The willingness to accept output losses to reduce inflation remained prominent in subsequent months. In August 1981, for example, Volcker said: “Some concern has been expressed here about a tearing of the financial fabric and bankruptcies and all the rest. I think those are very real and legitimate concerns. On the other hand, I guess one has to question whether we can get through this kind of period and deal with inflation without running into at least the threat, and maybe the actuality, of that” (8/18/1981, p. 28). In October, Wallich said, “I think we have to resign ourselves to low and occasionally negative growth for a while” (10/5–6/1981, p. 28). At the same meeting, Guffey was similarly blunt, saying, “The fact that we are at zero or thereabouts in real growth seems to be exactly the objective we set out to achieve. The risk may be for a further downturn in the economy; I think it’s a risk that we must take. To back away from it now would be a great mistake for the Federal Reserve” (p. 32).

Because policymakers clearly stated that the current rate of inflation was unacceptable, took aggressive action to try to reduce it, and were clearly willing to accept significant negative consequences for real activity, we identify this as a second contractionary monetary policy shock during the Volcker disinflation. The obvious argument against identifying a second shock is that policymakers were clearly aiming to reduce inflation from October 1979 on. Changes in regulations and the definitions of various monetary aggregates confounded attempts to apply restraint in some of the period, and the short, severe recession in early 1980 both weakened their resolve and exposed the strong counter-cyclicality inherent in short-run money targeting. Thus, one could see the waxing and waning of restraint between October 1979 and December 1980 as just an extreme version of the normal operational complexities of monetary policy. On net, however, we conclude the variation went far beyond the normal range. We identify a very strong move away from inflation reduction for several months and a clear change in priorities. For this reason, we have a preference for the identification of two shocks

We believe the most sensible date for the shock is May 1981. One could date the second Volcker shock as early as December 1980, when we first see the renewed passion for inflation reduction in FOMC members’ statements. It could be dated as late as July 1981, when FOMC members made the most forceful comments meeting our criteria for a monetary policy shock. The meeting in May 1981 included much discussion of taking restraining actions and the most extreme policy moves, but only a handful of explicit comments about their willingness to accept output losses. Nevertheless, we believe May makes the most sense for the date of the shock. The fact that there are strong statements before and after suggest this is a sensible date. It also has the benefit of being right in the middle of the move—not very early or well after it was strongly under way.

## DECEMBER 1988

Whether there was a switch to anti-inflationary policy in 1988 is somewhat ambiguous. Policymakers certainly expressed much concern about inflation, and took aggressive actions to control it. At the same time, they were not consistent about whether they were seeking to lower the prevailing rate of inflation or merely to prevent a further increase. In the end, we conclude that there were enough statements about lowering inflation and concern that monetary policy could cause a recession that this episode fits our criteria for a monetary shock. There are two candidate dates for the shock: May and December 1988. We believe the case for December is stronger.

At his final FOMC meeting in July 1987, Chairman Paul Volcker seemed quite concerned about the outlook for inflation. He said: “It seems to me that it is perfectly evident that the forecast the staff has for prices—though I am not sure that it is right—leaves us in a totally unsatisfactory position a year from now, with the inevitability of a sizable recession if we are going to have any chance of restoring price stability” (7/7/1987, p. 43). But that concern seemed more about the prospective trend of inflation than the current level. And, he agreed with others to leave borrowing and the funds rate unchanged (p. 65 and *Federal Reserve Bank of New York Quarterly Review*, Spring 1988, p. 51).

Alan Greenspan came in as Federal Reserve Chairman in time for the August 18, 1987 FOMC meeting. At this meeting, inflation was still viewed as a coming problem rather than a current reality. For example, in response to the staff view that labor markets had tightened, Federal Reserve Bank of Richmond President Robert Black said, “This is the kind of environment in which we could see wage and cost pressures begin to turn around from what we have been fortunate to have had in the immediate past” (8/18/1987, p. 11). Likewise, Gary Stern (President of the Federal Reserve Bank of Minneapolis) said, “I do think that, with all that good news, we probably are approaching a critical point when it comes to inflationary pressures” (p. 17). This description suggests that inflation was anticipated to rise because the economy was doing well. There was widespread agreement that monetary tightening was called for as a prophylactic move. Stern captured this sentiment well, saying, “I don’t have the sense that the inflation problem is a fait accompli. On the other hand, I don’t think we can afford to sit back and wait until it is obvious, for reasons mentioned earlier about the cost of undoing it once it is in place” (p. 29). Importantly, at this point no one was worried that tightening would have noticeable output consequences. For example, Gerald Corrigan (President of the Federal Reserve Bank of New York and Vice Chairman of the FOMC) said of a modest tightening: “I see that kind of an approach as relatively risk-free in that the initial change that it would carry, whether in terms of interest rates or things like that, is inconsequential as far as the forecast for the economy is concerned” (p. 25). Similarly, Greenspan said, “my own view is that the risk of snuffing out this expansion at this stage with mild tightening is extraordinarily small” (p. 32). The funds rate rose slightly soon after the meeting, and then further in conjunction with a 50-basis-point discount rate increase in early September.

At the September FOMC meeting, there was support for continued tightening as a hedge against inflation rising further. For example, Edward Kelley (a member of the Board of Governors) said: “I think that in the short run the risks that we have here in the inflation area are more expectations than anything else, and we should maintain a posture against that, and move against that. I think the economy can handle the slight tightening that going on to \$600 million in borrowing would imply” (9/22/1987, pp. 37–38). The funds rate was allowed to rise following the meeting by roughly 25 basis points, and was fluctuating around 7.5 percent in early October.

The stock market crash on October 19, 1987 led to an immediate loosening of monetary policy. The funds rate was allowed to drop to  $6\frac{3}{4}$  to  $6\frac{7}{8}$  percent, and was then targeted firmly at that level. At the November 1987 FOMC meeting, there was a sense that the crash had brought about the conditions that the committee had been seeking. For example, Governor H. Robert Heller said: “Essentially, we are back to where we were at the beginning of the year. In one fell swoop, we have wiped out inflation, or sharply reduced inflationary expectations, and that has given us a lot more breathing room on the interest rate front as well” (11/3/1987, p. 24). The committee agreed to continue with the current policy.

By the December 1987 meeting, however, concern about inflation was evident again. For example, Parry said, “although short-term prospects for inflation appear comforting, I don’t think I could describe the expectation of 4 percent inflation next year, following a similar increase this year, as comforting at all” (12/15–16/1987, p. 62). Similarly, Cleveland President W. Lee Hoskins said, “One [variable] we do at least have some influence on is price stability. And I would find a consensus around the table for moving more towards zero over the next four or five years more comforting than  $4\text{-}1/2$  percent” (p. 64). Greenspan, however, argued against tightening, saying, “even though under normal circumstances I would say that in this type of environment we probably should be in something of a tightening mode, if rates go up under these conditions I suspect the stock market would go down, and I’m fearful of the extent of that particular decline” (p. 71). The committee voted for no change in policy.

In the first few months of 1988, the funds rate fell further. At the February 1988 meeting, Greenspan admitted that he had told the Desk to do this. In a tense exchange, Greenspan said: “I’m responsible; and let me tell you my reasons and why I thought it was within the scope of the directive. First of all, there was increasing evidence from the initial claims figures that the economy was slowing down very dramatically” (2/9–10/1988, p. 50).

Many FOMC members expressed concern about the outlook for inflation at the March 1988 meeting. For example, Parry said, “It seems to me that the prospect of compensation per hour rising and approaching 5 percent in 1989 is intolerable, if indeed, our objective is to move gradually to price stability” (3/29/1988, p. 42). Again, however, most people expressed concern about the prospect of further inflation, rather than about the current level. For example, Black said, “I really think the danger lies on the other side: that we may get too much strength in the economy, more than we now anticipate, and this might stimulate a sharp increase in inflationary expectations” (p. 46). Similarly, Stern said, “the really striking feature about the outlook—both the one presented in the Greenbook and the one that we have developed [at our Bank]—is the acceleration of inflation that seems to be in prospect” (p. 46). Manuel Johnson (Vice Chairman of the Board of Governors) argued for modest tightening, saying: “if we are going to keep inflation under control, we’re in a situation that requires taking some risk with policy ahead of the ball game, rather than waiting until the pressures start to show up” (p. 52). The funds rate was taken up 50 basis points in two steps after the March meeting.

One candidate date for a contractionary monetary policy shock is May 1988. In his prepared remarks, Michael Prell (economist) said that the staff had raised their growth and inflation forecasts based on the surprising current strength of the economy. But, “we have not carried that higher inflation rate through 1989; instead, on the basis of the sentiment expressed by Committee members at the March meeting, we have assumed that monetary policy imposes greater restraint on aggregate demand. In this forecast, the federal funds rate moves into the  $8\text{-}1/2$  to 9 percent

range by early 1989” (Presentation Materials, 5/17/1988, Prell, p. 1).<sup>7</sup> While this statement makes clear that he saw committee members wanting to contain inflation, it is not clear that they wanted to reduce it from the current level. Two more hawkish members clearly advocated for taking actions to reduce inflation, rather than simply moving to counter future increases. Stern said: “whatever is likely to happen on the wage and price side, it doesn’t seem to me that there’s going to be any deceleration next year unless we act. I think it is time for some further action” (5/17/88, pp. 4–5). Similarly, Hoskins said: “In terms of our own inflation rate—just to reiterate what I said earlier—we have been stalled at a rate that I think is too high for most of us, at least as stated in terms of our objective, which is price stability. Even if the staff forecast is in error, in the sense that it’s too strong on the economy, it seems to me we’re still faced with the prospect of inflation staying at current levels or rising. And if our objective is price stability, then we ought to begin to pursue that objective aggressively” (p. 5). Others, however, were less enthusiastic about aggressive action. For example, Federal Reserve Bank of Dallas President Robert Boykin said: “If I had the real courage of my convictions, as Lee Hoskins does, I would really like to line up with him. I guess I just don’t have that much courage, given the situation I have down there in the Southwest” (p. 9). The committee followed Greenspan’s suggestion that they raise the borrowing target by \$100 million in the next two weeks, and by possibly another \$100 million later in the intermeeting period (*Federal Reserve Bank of New York Quarterly Review*, Spring 1989, p. 95). The funds rate rose nearly 50 basis point in two steps before the next FOMC meeting.

The discussion at the June FOMC meeting provides some support for the view that policymakers had decided to reduce the current level of inflation and were willing to accept output consequences to bring it about. Johnson said (6/29–30/1988, p. 25):

[C]learly the pace of growth we’ve had has shown itself to be too strong to be sustainable without an acceleration in inflation. But what kind of growth is necessary to keep inflation from accelerating—or even to allow it to decelerate from current levels—I have no idea. I would hate to get into trying to fix on any number to shoot for to set monetary policy. I think what we ought to do is take action until we see the response we’re looking for in terms of financial market expectations and the environment for decelerating inflation, regardless of what the growth rate consequences happen to be.

On the other hand, Greenspan still seemed to be focused on preventing inflation from rising rather than on literally reducing it. He said: “I think we have been ahead of the power curve. We have been surprisingly, successfully, ahead of what is an emerging inflationary process. ... The one thing I just absolutely find unacceptable is that we throw away any of the gains that we have made. And the notion that we are moving into a period where [the] economy is still quite strong, and we decide to wait and see, strikes me as risking at this point the loss of what we’ve accomplished since we started to tighten” (p. 59). The committee agreed to slightly more restraint despite a projected slowdown in growth from over 3 percent to below potential growth. Two members dissented because they felt the economy was already slowing.

Throughout the fall of 1988, policymakers seemed to focus on preventing a rise in inflation rather than reducing its current level. For example, at the August 1988 FOMC meeting, Boehne said, “As far as the nation—I think it has been said a variety of ways—but the bottom line is that

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<sup>7</sup> The prepared remarks of the staff are not included in the transcript. They are, however, available on the Board of Governors website along with the transcript.

we are in a territory of accelerating inflation and we have to resist that growth” (8/16/1988, p. 17). Similarly, Black said, “What really bothers me most, I think, is what bothers most of the others: that despite all this tightening that we have done up until now, and the staff’s projection of considerably more tightening beyond this, we’ve still got pretty big increases in inflation projected” (p. 18). At the September meeting, Parry said, “I think there are pressures on the underlying rate of inflation that are likely to intensify” (9/20/1988, p. 26). Consistent with this focus, the staff forecast in this period was predicated on maintaining the current level of inflation, not reducing it. At the September FOMC meeting, Prell explained: “if you want to avert some acceleration of inflation, we need to reduce the pressures on resources. ... I think it will take more than we have built in here to make a decided move towards restoring a disinflationary trend by 1990” (9/20/1988, p. 6). The committee took the gradual firming measures assumed in the forecast in this period, raising the funds rate from 7½ percent after the June meeting to 8¾ percent before the December meeting.

At the December meeting, there was a noticeable change in the premise of the staff forecast. In his presentation materials, Prell said: “As you know, with the current Greenbook the staff has taken its first stab at portraying how 1990 might look. The picture we’ve presented isn’t very pretty. We have suggested that, if it is the aim of the Committee not merely to hold the line on inflation but, rather, to restore a downward trend by 1990, then it may be necessary to run the risk of some financial stress and economic weakness” (Presentation materials, Prell, 12/13–14/1988, p. 1). To accomplish this stronger goal, the staff had “built into our forecast a rise in short-term interest rates of about 2 percentage points over the next year to 18 months” (Presentation materials, Prell, p. 3). This change strongly suggests that the staff had detected a desire to lower the rate of inflation among the FOMC members (or, at least, the Chairman). Moreover, they were clear that actually reducing inflation could have significant negative consequences for real output and unemployment.

FOMC participants, for the most part, seemed to echo the premise that the goal of monetary policy at this point was to actually lower inflation, and to accept the likely output consequences. For example, Hoskins said, “I think the costs of allowing inflation to become embedded in the economy are very high, and I would skew policy and take the risk on the side of being overly tight” (12/13–14/1988, p. 44). Heller said: “A lot of speakers have mentioned that we have to be aware of the fragility in the financial system. I think that’s certainly an important point. But I would say that we can’t design monetary policy to avoid any difficulties in various sectors. In the first place, we’ve got to focus on inflation and if something goes wrong then you can address those problems” (p. 51). Similarly, Stern said, “it seems to me ... that we’ve got to start looking toward employment gains that are running more in the neighborhood of 200,000 workers a month or less if we are going to be on a sustainable path and if we are going to bring inflation down further over time. And I suspect that if and when that happens, there is going to be a lot of comment and some concern about whether the economy may be slowing excessively. And I would suggest that that’s more like what we need” (p. 41). Robert Forrester (President of the Federal Reserve Bank of Atlanta) said something very similar: “I think the job before us is to contain the inflation and to slow this economy down. Now, I think that the danger is that we don’t do enough at this time to send the signal to the market and confirm the credibility that we already have” (p. 56). Greenspan also seemed to reluctantly accept both the premise of the forecast and its consequences. He said, “I must say that I hope we don’t have to go the 200 basis points that’s implicit in the staff forecast because I think that’s going to create a lot of problems for us” (p. 53). Borrowings increased by \$100 million after the meeting and the funds rate rose from 8.5 to 9.15 percent.

The discussion at the February 1989 meeting was consistent with a change in policy in December. In his presentation, Prell reiterated that “we have assumed that the Federal Reserve will be seeking, in the next two years, to restore a gradual downward trend in the rate of inflation” (Presentation materials, Prell, 2/7–8/1989, p. 1). He also made clear the likely consequences of that decision, saying: “Essentially we have projected a growth recession in 1990, with policy damping activity enough to push the unemployment rate above 6 percent by the end of the period. Once some slack has opened up in resource markets next year, inflation begins to abate” (Presentation materials, Prell, p. 2). Most participants at the meeting expressed concern that growth was still too high and indicated a willingness to raise interest rates further. For example, Thomas Melzer (President of the Federal Reserve Bank of St. Louis) said, “I think inflation is too high; and secondly, I think it’s going higher” (p. 56). Similarly, Boykin said, “I remain concerned, as I indicated earlier in the meeting, about the level of inflation and what appears to me to be a fairly timid approach to reducing that in a fairly significant way. I just think it’s too high” (p. 58). The funds rate was allowed to rise to 9¾ percent in the weeks after the meeting.

By the May 1989 FOMC meeting, the staff and FOMC members were seeing signs that the economy was slowing. In his presentation, Prell said, “we may have underestimated in the Greenbook the degree of deceleration that has occurred thus far this year,” but “we still think what is in prospect is a period of slow growth, rather than imminent recession” (Presentation materials, Prell, 5/16/1989, p. 1). Most participants still supported a slight rise in borrowing, despite the likely output consequences. For example, Corrigan said, “I don’t mind at all running the risk prospectively that the economy will slow; indeed, I wouldn’t even care if it slowed a bit more than Mike’s forecast as long as I do not see signs of a recession” (p. 25). Johnson said, “I’d like to associate myself with those people who generally view the current environment as satisfactory. The evidence clearly is showing a slowing in economic activity. In my opinion it has gone beyond the stage where this might be a temporary situation. I think it is [likely to be] sustained. And I think the slowdown in domestic demand or consumer spending is a desirable feature that we’ve been looking for” (p. 28). More emphatically, Hoskins said, “the long-term objective ought to remain consistent, and that is to bring down the rate of inflation. The reason I gave Mike Prell’s staff credit for putting the notion that we might have a recession into the Greenbook is that if we don’t walk up and take a look at one we’ll end up always having higher rates of inflation than we anticipated and, therefore, less output and employment than we expect” (p. 46).

Based on this discussion, we conclude there was a contractionary monetary policy shock in 1988, and it should be dated in December. In May 1988, there was a noticeable increase in concern about inflation and a desire to slow growth. But much of the discussion was centered on preventing future inflation rather than reducing the current level. While there remained concern about a further rise in inflation in December 1988, much more of the discussion focused on actually reducing inflation. Moreover, there was a clear understanding that the output consequence of the tightening contemplated could be significant. These views were backed up by a further rise in the funds rate of nearly 150 basis points, on top of the 250 basis points that had occurred gradually over 1988.

## **JULY 2022**

The FOMC began to be concerned about inflation in the second half of 2021. For example, the “Minutes” of the September 2021 meeting reported: “participants observed that the inflation rate was elevated, and they expected that it would likely remain so in coming months before moderating. ... Some participants expressed concerns that elevated rates of inflation could feed

through into longer-term inflation expectations of households and businesses or saw recent inflation data as suggestive of broader inflation pressures” (9/21–22/2021, p. 8). In addition, “Most participants saw inflation risks as weighted to the upside because of concerns that supply disruptions and labor shortages might last longer and might have larger or more persistent effects on prices and wages than they currently assumed” (p. 8). But these concerns were not yet affecting policy. For example, “Various participants stressed that economic conditions were likely to justify keeping the rate at or near its lower bound over the next couple of years. ... [S]everal of these participants suggested that there would likely be sustained downward pressure on inflation in the years ahead” (p. 10).

Concerns about inflation mounted over the remainder of 2021 and into early 2022. In March 2022, “all participants concurred that ... inflation was high and well above the Committee’s 2 percent inflation objective” (3/15–16/2022, p. 10). And, “All participants indicated their strong commitment and determination to take the measures necessary to restore price stability” (p. 10)—with the obvious implication that the members did not view the current inflation rate as consistent with price stability.

The March 2022 meeting was the first where the committee increased interest rates, raising its target range for the federal funds rate by 25 basis points. But there was no discussion of bearing noticeable output costs to lower inflation. Rather, “participants expected inflation to return to the Committee’s 2 percent objective over time and the labor market to remain strong” (3/15–16/2022, p. 8), and, “participants judged that economic fundamentals remained solid and that they expected above-trend growth to continue, sustaining a strong labor market” (p. 9). Monetary policymakers’ view in May, when the funds rate was raised another 50 basis points, was the same: “members agreed that, with appropriate firming in the stance of monetary policy, they expected inflation to return to the Committee’s 2 percent objective and the labor market to remain strong” (5/3–4/2022, p. 9).

The tenor of the FOMC’s views began to change at the June 2022 meeting. “Participants noted that inflation remained much too high and observed that it continued to run well above the Committee’s longer-run 2 percent objective .... Participants were concerned ... that inflation pressures had yet to show signs of abating, and a number of them ... [thought] that inflation would be more persistent than they had previously anticipated” (6/14–15/2022, p. 8). Importantly, the committee now believed that reducing inflation would not be costless. The “Minutes” reported: “As the further firming in the policy stance would likely result in some slowing in economic growth and tempering in labor market conditions, members also agreed to remove the previous statement language that had indicated an expectation that appropriate policy would result in a return of inflation to 2 percent and a strong labor market” (p. 10). In addition, “participants ... anticipated that an appropriate firming of monetary policy would play a central role in helping address imbalances in the labor market. ... [P]articipants generally expected the unemployment rate to increase,” with the participants expecting the unemployment rate to show “a gradual rise over the next few years” (p. 8). The Committee decided to raise the funds rate another 75 basis points.

Despite the obvious concern about inflation and strong action, we feel the statements at the June meeting do not quite meet our criteria for a monetary policy shock. Policymakers did not go much beyond saying that the policy tightening would cause output to be lower than it otherwise would have been. They did not show a clear willingness to bear significant output costs or risk a recession or a substantial growth recession.

The language in July was stronger. As before, “Participants observed that inflation remained unacceptably high and was well above the Committee’s longer-run goal of 2 percent” (7/26–27/2022, p. 8). But now there was an explicit indication of a desire for below-normal growth. The “Minutes” reported that many participants “expected that growth in economic activity would be at a below-trend pace, as the period ahead would likely see the response of aggregate demand to tighter financial conditions become stronger and more broad based. Participants noted that a period of below-trend GDP growth would help reduce inflationary pressures and set the stage for the sustained achievement of the Committee’s objectives of maximum employment and price stability” (p. 7). There was also evidence of a willingness to bear significant output risks to bring inflation down: “Participants saw the risks to the outlook for real GDP growth as primarily being to the downside. These downside risks included the possibility that the tightening in financial conditions would have a larger negative effect on economic activity than anticipated” (p. 9); and, “there was ... a risk that the Committee could tighten the stance of policy by more than necessary to restore price stability” (p. 10). There was also a sense of resolve and of an emphasis on price stability over strong real performance: “Some participants indicated that, once the policy rate had reached a sufficiently restrictive level, it likely would be appropriate to maintain that level for some time to ensure that inflation was firmly on a path back to 2 percent” (p. 10). The committee raised the funds rate another 75 basis points.

We believe that the narrative evidence from the July meeting meets our standard for a contractionary monetary policy shock. The FOMC clearly felt that the current rate of inflation was unacceptable; they were taking significant contractionary actions to reduce it; and they were willing to risk significant output consequences. Thus, we date the shock in July 2022. At the same time, the statements concerning the possible output consequences were still somewhat veiled and restrained, so it is not as clear-cut as one would hope.

Our criteria for a contractionary shock were met even more clearly at the next meeting of the FOMC, which was in September. The “Minutes” of that meeting reinforce and strengthen the evidence from July. There was again great concern about inflation, as “participants concurred that ... inflation was far above the Committee’s 2 percent inflation objective” (9/20–21/2022, p. 9). And there was again a desire for below-trend growth and some rise in unemployment: “Participants noted that a period of below-trend real GDP growth would help reduce inflationary pressures” (p. 7), and, “Participants judged that a softening in the labor market would be needed to ease upward pressures on wages and prices” (p. 8). The main difference from July is that the evidence of resolve and willingness to bear risks was much broader. In terms of resolve: “Participants reaffirmed their strong commitment to returning inflation to the Committee’s 2 percent objective, with many stressing the importance of staying on this course even as the labor market slowed” (p. 9); “Many participants indicated that, once the policy rate had reached a sufficiently restrictive level, it likely would be appropriate to maintain that level for some time until there was compelling evidence that inflation was on course to return to the 2 percent objective” (p. 9); and, “Many participants emphasized that the cost of taking too little action to bring down inflation likely outweighed the cost of taking too much action. Several participants underlined the need to maintain a restrictive stance for as long as necessary” (p. 10). In terms of risks: “the possibility that a persistent reduction in inflation could require a greater-than-assumed amount of tightening in financial conditions was viewed by the staff as a salient downside risk to their forecast for real activity” (p. 6); and, “A few participants ... commented that the unemployment rate could rise by considerably more than in the staff forecast” (p. 8). The funds rate was raised another 75 basis point at this meeting.

September is an obvious alternative candidate for the date of the 2022 shock. Policymakers were clearly willing to accept significant output consequences to get inflation down from what they emphatically said was an unacceptable level, and were continuing to take aggressive action. And, policymakers spoke with the resolve and passion we typically find in a clear-cut monetary shock. One argument against September is that the criteria were very close to having been met in June, so September would present quite a delay. Also, the amount of contractionary monetary policy action had been quite large before September. Importantly, whether the date is July or September, it is clear that the shock occurred in the third quarter of 2022.

Much of the discussion at the November meeting (when there was another 75 basis point increase in the funds rate) echoed that from July and September. But two new elements further support the conclusion that there had been a policy shock. The first is a much more explicit acknowledgment of a risk of a recession. “[T]ightening financial conditions” were listed as one of the “salient downside risks to the projection for real activity,” with the “Minutes” continuing, “in addition, the possibility that a persistent reduction in inflation could require a greater-than-assumed amount of tightening in financial conditions was seen as another downside risk. The staff, therefore, ... viewed the possibility that the economy would enter a recession sometime over the next year as almost as likely as the baseline” (11/1–2/2022, p. 6). The second was mentions of the possibility of significant financial disruptions. One statement was, “Several participants commented that continued rapid policy tightening increased the risk of instability or dislocations in the financial system” (p. 10). The other mention was even more striking, implying that the case for tighter policy was so strong that problems in “core market functioning” should not deter the committee: “A few participants noted the importance of being prepared to address disruptions in U.S. core market functioning in ways that would not affect the stance of monetary policy, especially during episodes of monetary policy tightening. Several participants noted the risks posed by nonbank financial institutions amid the rapid global tightening of monetary policy” (p. 9).

Because the transcripts of the 2022 meeting are not yet available, we also examine the speech delivered by Federal Reserve Chair Jerome Powell in Jackson Hole in late August, roughly midway between the July and September meetings (Powell 2022). The speech had many of the same themes as the “Minutes” of the July and September meetings. First, it was simply given that inflation was too high and needed to be reduced. For example, Powell made repeated references to “Restoring price stability” (pp. 1 and 2) and similar ideas. Second, the Federal Reserve’s central goal was to bring inflation down. Powell said: “The Federal Open Market Committee’s (FOMC) overarching focus right now is to bring inflation back down to our 2 percent goal” (p. 1), and, even more simply, “Our responsibility to deliver price stability is unconditional” (p. 3). Third, doing so would be painful: “Reducing inflation is likely to require a sustained period of below-trend growth. Moreover, there will very likely be some softening of labor market conditions. While higher interest rates, slower growth, and softer labor market conditions will bring down inflation, they will also bring some pain to households and businesses. These are the unfortunate costs of reducing inflation” (p. 1). A more subtle statement with the same implication was, “with inflation running far above 2 percent and the labor market extremely tight, estimates of longer-run neutral are not a place to stop or pause” (p. 2). Finally, there was a clear “whatever it takes” tone, with the implication that the Federal Reserve would rather risk tightening too much than too little. Powell said, “Restoring price stability will likely require maintaining a restrictive policy stance for some time. The historical record cautions strongly against prematurely loosening policy” (p. 2). And his concluding sentence was, “We will keep at it until we are confident the job is done” (p. 5).

As discussed in the paper, consistency with how we assess the other shocks in our sample—which we argue is an essential feature of sound narrative analysis—requires that we wait until the transcripts of the 2022 meetings are released before we make a definitive judgment about whether there was a monetary policy shock by our criteria in 2022, and if so, when it should be dated. But our tentative judgment based on the publicly released “Minutes” is that there is strong evidence of a shock. If, as seems likely, the “Minutes” accurately reflect the discussion at the meetings, July is a plausible date. September is also a plausible candidate, but perhaps somewhat on the late side. If the “Minutes” understate the FOMC’s resolve (as might happen if the committee were being cautious in what it released publicly), June might also be a candidate date. Conversely, if they overstate the committee’s resolve (as might happen if the committee was focused on trying to reduce inflation expectations), September might turn out to be more appropriate. In the analysis in Section III of the paper, we place the shock in July. However, a final judgment about the date of the shock (and indeed, about whether there was a shock at all) will have to await the release of the meeting transcripts in 2028.

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