LESSONS FROM HISTORY FOR SUCCESSFUL DISINFLATION

ONLINE APPENDIX B:
NARRATIVE EVIDENCE ON POLICYMAKER COMMITMENT TO DISINFLATION

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This appendix provides a brief discussion of what the narrative record suggests about the level of policymakers' commitment to disinflation in each episode.

October 1947. Because of the unique circumstances of the time, this episode is the most mixed in terms of monetary policymakers' commitment. In two of the dimensions we consider, their commitment was quite strong. First, they had a clear objective for inflation: in the 1940s and 1950s, it was almost a given that any inflation was undesirable, and thus that the goal should be to bring it down to zero. In June 1947, the FOMC's Chief Economist, for example, cited simply "the rise in prices that had taken place" as a key issue (*Minutes*, 6/5/1947, p. 16).[1] In December 1947, Federal Reserve Chairman Eccles described the goal of policy as "avoid[ing] further price increases" (Eccles testimony, 12/10/1947, p. 5).[2] Second, monetary policymakers were clearly willing to accept substantial output costs to eliminate inflation. In June 1947, the views of the Chief Economist and an Associate Economist were, "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," and, "there would and should be a mild recession" (*Minutes*, 6/5/1947, pp. 16 and 17). The FOMC's willingness to risk a recession was stated publicly by the Chairman: "Any anti-inflationary program involves some risk of precipitating a downturn and readjustment in business conditions" (Eccles testimony, 12/10/1947, p. 6).

However, monetary policymakers had significant doubts about whether the tools they had available and were willing to use would be enough to accomplish their goals. The Federal Reserve, which had been pegging the entire term structure, regained the ability to move short-term rates in July 1947, but it continued to peg long-term rates. Moreover, monetary policymakers only wanted to use their influence over short-term rates to a limited extent, and they had no desire to allow the long-term rate to rise. Eccles's view was, "A general rise in interest rates high enough to halt the current inflationary expansion of bank credit would not only entail large added costs to the Government but would have a disastrous effect upon the Government bond market" (Eccles testimony, 12/10/1947, p. 8). The FOMC therefore relied on a mix of tools that in the early postwar period fell under the heading of monetary policy, especially limited increases in short-term rates through open-market operations, increases in the discount rate, increases in reserve requirements, and "jawboning" banks to reduce their lending.

Internally, monetary policymakers' tone was they hoped that would be enough, but in the meantime, they would lobby for additional powers, most notably renewed ability to regulate consumer credit after the expiration of their existing authority on November 1, 1947 and expanded reserve requirements (which they received in limited form in August 1948 and used soon thereafter). In early 1948, for example, Eccles argued that they should "continue for a few months longer the use of all of the means available to the Federal Reserve System to counteract the inflation, ... that if results could be obtained through that method rather than by further action by Congress, that would be desirable, but that if the present trends continued he felt the Board should

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[1] The narrative monetary policy records referenced in this appendix are available on the Federal Reserve website: https://www.federalreserve.gov/monetarypolicy/fomc_historical.htm. In 1967, the historical *Minutes* were replaced by a document called the *Memorandum of Discussion*, which contained virtually the same type of records of policy discussions. In what follows, the in-text references to both the historical *Minutes* and the *Memorandum of Discussion* are identified simply as *Minutes*. The transcripts of FOMC meetings are identified as *Transcripts*.

[2] Speeches and testimonies of Federal Reserve chairs are accessed from FRASER (Federal Reserve Bank of St. Louis, 1946–2016), https://fraser.stlouisfed.org. The materials are found by searching under the title: "Statements and Speeches of [Federal Reserve Chair name]."

present the situation to Congress in [a] special report" (*Minutes*, 1/20/1948, p. 18). Publicly, however, perhaps because they were making the case for additional powers, they were much more pessimistic. In September 1947, Eccles said, "nothing whatever has been done to put the Board in a position where it could restrain inflationary expansion by the banking system" (Eccles speech, 9/25/1947, p. 8). And in November, he said, "we feel that our existing powers are insufficient" (Eccles testimony, 11/25/1947, p. 4).

A reasonable summary of this mixed record is that the Federal Reserve's commitment in this episode was moderate. But the episode is clearly unique and in many ways cannot be reliably compared with the later ones.

August 1955. Monetary policymakers' overall commitment as they shifted to anti-inflationary policy in 1955 is best described as moderate. The most informative statements in the *Minutes* during this episode about willingness to accept or risk output costs are strong but well short of extreme: "the System could never take action that would be effective without taking some risks" (*Minutes*, 8/2/1955, p. 38); "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" (*Minutes*, 10/4/1955, p. 6); and, "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" (*Minutes*, 11/16/1955, p. 20, emphasis in the original). The strongest statement in the *Minutes* from Federal Reserve Chairman Martin was, "the action should be decisive and clear" (*Minutes*, 8/23/1955, p. 8).

As in 1947, the Federal Reserve viewed all inflation as harmful, and so its goal was to eliminate it. In August 1955, for example, Martin identified the mere fact of "upward price movements" as one of the "danger signals" that "are now flashing red" (*Minutes*, 8/2/1955, pp. 9 and 13). Indeed, discussions of prices were typically framed in terms of the behavior of the price level, not inflation. In a typical statement, New York Federal Reserve Bank President and FOMC Vice Chairman Sproul said in July 1955, "prices which have been stable, in the aggregate, for two years may be about to get a push on the up-side" (*Minutes*, 7/12/1955, pp. 26–27). In August, Martin discussed what he viewed as the enormous costs of "restor[ing] the purchasing power of the dollar" (that is, having deflation to fully offset any inflation) if there were inflation (*Minutes*, 8/2/1955, p. 13). But the statements do not extend beyond that—in contrast to the 1958 and 1981 episodes, which we discuss below, there was no indication of a desire to decisively address inflation.

Importantly, monetary policymakers had some, though not overwhelming, doubts about their willingness to stick with their policy if it did not yield quick payoffs, and about their ability to address inflation on their own. Most notably, they viewed "responsible" behavior by private actors—essentially, civic-minded moderation in demands for price and wage increases—as necessary for the economy to reach "potential" output without inflation.[3] In the speech where he gave the famous "punch bowl" analogy, Martin immediately pivoted to the essential role of private behavior: "The Federal Reserve ... is in the position of the chaperone who has ordered the punch bowl removed just when the party was really warming up. But unless the business community, leaders in all walks, exhibit moderation, prudence, and understanding, then we will fail" (Martin speech, 10/19/1955, p. 12).

The FOMC discussed these issues and their implications for policy at some length in March

[3] One implication is that the meaning of "potential output" or "capacity" in this era differed substantially from modern definitions of "normal output" or the "natural rate of output.".

1956. For example, Sproul said, “the Committee would be fooling itself if it thought that it could prevent this wage-cost spiral short of adopting a very severe monetary policy. Whether the System would have the assent of the Government and of the public in such a course seemed … to be a real question” (*Minutes*, 3/27/1956, p. 33). Another member agreed, saying that “if the System moved to such a degree as would be necessary to stop the wage-cost spiral, it could easily result in the destruction of the System” (p. 33). The discussion concluded with Martin saying the issue was serious but they should proceed: “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). Thus, it appears that monetary policymakers had some qualms about their ability to address inflation and how far they would go, though not enough to stop them from taking serious action.

September 1958. Monetary policymakers’ commitment in this episode was very strong. To begin with, their goal was not just to eliminate inflation, but to dispel the idea that a positive inflation rate was normal—in modern language, their objective was to drive long-run expected inflation to zero. They increasingly came to the view that they had been systematically too timid in combating inflation in the years since World War II, with the result that, as one member put it, “There has been continuous, pervasive, and increasingly convincing propaganda to the effect that inflation is inevitable. That propaganda now carries almost universal conviction” (*Minutes*, 7/29/1958, p. 17). In August 1957, Martin said of the prospect of “a gradual rise in prices …, averaging perhaps 2 per cent a year”[4]: “No greater tragedy, short of war, could befall the free world than to have our country surrender to the easy delusion that a little inflation, year after year, is either inevitable or tolerable” (Martin testimony, 8/13/1957, pp. 14 and 26). And in April 1958, he referred to “the disturbing notion that creeping inflation had become … inevitable,” and said, “the Federal Reserve rejected [that] idea” (Martin testimony, 4/22/1958, p. 3).

The weak economy and other considerations led the FOMC to hold off on acting strongly on its concern until August and September 1958. At that time, Martin’s view was, “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. … [T]he System had to stand up and be counted in these things” (*Minutes*, 8/19/1958, p. 54), and, “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’” (p. 58).

The committee was clearly willing to accept a recession if that was necessary to accomplish its goals. Martin’s strongest statements about this issue bracketed the FOMC’s main policy shift: “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” (*Minutes*, 7/30/1957, p. 38); and, “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” (*Minutes*, 3/3/1959, p. 58).

As in 1955, monetary policymakers were unsure of their ability to combat inflation on their own. Martin continued to stress the importance of appropriate behavior by fiscal policymakers and private actors (for example, *Minutes*, 8/19/1958, pp. 54 and 59; and Martin speech, 2/6/1959, p. 21), and he said, “whether inflation could be contained, he did not know” (*Minutes*, 1/6/1959, p. 34). But there were two important differences from the 1955 episode. First, the FOMC believed it could address inflation caused by civically-irresponsible “cost-push” inflation. In his August

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[4] That is, the modern Federal Reserve’s most preferred inflation outcome.

1957 testimony, Martin argued that the distinction between "demand-pulls" and "cost-push" was "an oversimplification," and that in any inflation, "demand must always be sufficient to keep the spiral moving" (Martin testimony, 8/13/1957, p. 9). He went on to say, "whatever the special features of the current inflation, the important fact is that it is here" (p. 12); and he concluded, "How, then, may further inflation be restrained? Bluntly, the answer is to be found in a moderation of spending" (p. 23). Second, the FOMC was willing to pursue tight policy despite the challenges involved. At the time of the policy shift, his view was, "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" (*Minutes*, 9/9/1958, p. 53). A good summary of the view that the Federal Reserve did not have full control over the outcomes but nonetheless should act strongly came from Hayes in May 1959: "I am convinced that the time has come for a decisive signal of the Federal Reserve System's determination to do its part to check inflationary trends" (*Minutes*, 5/26/1959, p. 17).

Thus, this episode ranks high in meeting our criteria for strong commitment. There was a willingness to accept large output costs; a significant (though not unlimited) "whatever it takes" attitude and belief they could prevail over obstacles; a clear and ambitious goal regarding inflation; and a view that this this not just a second try, but close to a last one.

December 1968. In this episode, monetary policymakers demonstrated only a weak-to-moderate commitment to disinflation. In all episodes we identify as disinflationary shocks, monetary policymakers were willing to accept the risk of an output loss. But in 1968, they sought to be very measured and gradual in their moves, so that the risk of significant loss was small. For example, at the FOMC meeting in December 1968, Federal Reserve Bank of New York President and Vice Chairman of the FOMC Alfred Hayes (who was running the meeting in Chairman William McChesney Martin's absence) said: "There is no doubt in my mind that the major objective of monetary policy under these circumstances should be to seek an appreciably slower rate of bank credit expansion as a contribution to the long-sought slowing of the economy. However, I would advocate gradual and persistent pressure in preference to any massive moves" (*Minutes*, 12/17/1968, p. 49). Federal Reserve Bank of Kansas City George Clay expressed a similar view, saying: "As a part of that program, the 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" (*Minutes*, 12/17/1968, p. 72). In testimony in early 1969, Martin echoed this desire for very measured actions. He said: "The progress envisioned would necessarily be gradual, for an effort to 'disinflate' abruptly, after so extended a period of cumulating inflationary pressures, would risk wrenching the economy sharply, with major dislocations in employment and in the structure of production" (Martin testimony, 2/26/1969, p. 11). We do not observe in policymakers at this time anything that could be called a "whatever it takes" attitude.[5]

Martin, even more so than in the 1950s, expressed the belief that monetary policy could not deal with inflation on its own. In remarks to the American Society of Newspaper Editors in the spring of 1968, he voiced great concern about fiscal policy rowing in the opposite direction of

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[5] One concrete sign that policymakers were very cautious in their actions in this period is that they took pains to reassure financial markets that they would not repeat the credit crunch of 1966. At the FOMC meeting in March 1969, policymakers worried that they had undercut themselves. In response, Governor Dewey Daane said that "he did not think the System's current policy had been vitiated by assurances that a crunch would be avoided, and he favored continuing that policy" (*Minutes*, 3/4/1969, p. 89).

monetary policy. He said: "I see no way that monetary policy, unless you want to bring the economy to a complete, grinding halt which nobody wants to do, I see no way how monetary policy can change a more than $20 billion deficit that is getting progressively worse" (Martin remarks, 4/19/1969, p. 6). He also echoed his previous comments that the Federal Reserve needed the cooperation of the private sector to reduce inflation. In a speech in June 1969, he said: "if bankers and businessmen recognize that their own interests coincide with the public interest in calling for restraint and if their lending and spending decisions work in harmony with fiscal and monetary policies aimed at cooling the boom—we can check the drift toward higher prices and higher interest rates" (Martin speech, 6/30/1969, p. 10).

Policy makers in the 1968 episode were also relatively vague about their goal for inflation. Martin, in testimony in February 1969 said: "I am optimistic, however, that the forces of fiscal and monetary restraint set in motion last year will gradually bring us back to reasonable price stability" (Martin testimony, 2/26/1969, p. 1). In March he said: "We must follow economic stabilization policies that bring inflation under control" (Martin testimony, 3/25/1969, p. 9). While one can guess that Martin favored very low inflation, the discussion within the FOMC does not indicate a clear goal or timeline for inflation reduction.

Taken together, the emphasis on avoiding significant output losses, the belief that monetary policy needed to be supplemented with other policies, and the fact that policymakers were vague about their goals for inflation, suggest that monetary policymakers were only weakly (perhaps edging toward moderately) committed to disinflation in the 1968 episode.

April 1974. Monetary policymakers' commitment to disinflation in 1974 was relatively weak. A key indicator of this was the fact that policymakers again put strict limits on how much output loss they were willing to tolerate to bring inflation down. For example, at the FOMC meeting in March 1974, Governor Henry Wallich said: "the objective should be to pursue a path of monetary growth such that economic activity continued to expand, but at a rate not necessarily much faster than its potential and perhaps even below" (*Minutes*, 3/18–19/1974, pp. 134–135). At the same meeting, Chairman Arthur Burns summed up the sentiment of the committee saying: "No one had proposed that the economy should be put through the wringer" (p. 151). At the FOMC meeting in April 1974, which is when we date the switch to disinflationary policy, Governor George Mitchell said: "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" (*Minutes*, 4/15–16/1974, p. 89). At the May FOMC meeting, Robert Mayo, President of the Federal Reserve Bank of Chicago, sounded similarly cautious: "He believed in attempting to control inflation as much as anyone, but the Committee was dealing with questions of confidence in the banking system and with a fragile financial structure" (*Minutes*, 5/21/1974, p. 54). Finally, at the June 1974 FOMC meeting, Governor Andrew Brimmer and Wallich (who were typically on different ends of the hawk-dove spectrum) expressed almost identical views about the output loss they were willing to accept: "Mr. Brimmer said … he would want to aim for a longer-term growth rate in real GNP that was below the trend rate but above zero," and Wallich said "It might well turn out that an inflation of the present type could not be ended without a recession, but the System certainly had to try; accordingly, he would favor aiming for a growth rate in real GNP of 2 or 3 per cent" (*Minutes*, 6/18/1974, pp. 59 and 68).[6]

[6] The most aggressive comment we saw in the record was from Bruce MacLaury, President of the Federal Reserve Bank of Minneapolis. He said: "In general, he believed the Committee was being forced by circumstances to choose between recession on the one hand and a totally unacceptable rate of inflation,

In his testimony and speeches, Chairman Burns was certainly passionate about his hatred of inflation. For example, in a commencement address in May 1974, he said: "The gravity of our current inflationary problem can hardly be overestimated," and "I do not believe I exaggerate in saying that the ultimate consequence of inflation could well be a significant decline of economic and political freedom for the American people" (Burns speech, 5/26/1974, pp. 1 and 7). However, he too seemed to put limits on how much output loss he was willing to accept. For example, in the same address he said: "We intend to encourage sufficient growth in supplies of money and credit to finance orderly economic expansion" (p. 9). In Congressional testimony in July 1974, he suggested that "moderation in the growth rate of money and credit supplies must be achieved gradually to avoid upsetting effects on the real economy" (Burns testimony, 7/30/1974, pp. 6–7). In testimony in August 1974, Burns was more aggressive, saying: "A period of slow growth is needed to permit an unwinding of the inflationary processes that have been built into our economy through years of neglect," and "There are, of course, risks that a period of slow economic expansion will lead to a gradual weakening of demand for goods and services, to a deterioration in the economic outlook, and to cumulative recessionary tendencies" (Burns testimony, 8/6/1974, p. 16). However, even then he certainly did not exhibit a "whatever it takes" attitude.

Another indication that policymakers were only weakly committed to disinflation in this episode is the fact that they felt inflation was unlikely to be cured by monetary policy alone. In the commencement address discussed above, Burns gave a long list of other changes needed to bring inflation down. He said: "But I cannot emphasize too strongly that monetary policy alone cannot solve our stubborn inflationary problem. We must work simultaneously at lessening the powerful underlying bias toward inflation that stems from excessive total demands on our limited resources. This means, among other things, that the Federal budget has to be handled more responsibly than it has been in the past" (Burns speech, 5/26/1974, pp. 9—10). He even told graduates that there was a "need for rediscovery of the art of careful budgeting of family expenditures. In some of our businesses, price competition has atrophied as a mode of economic behavior, in part because many of our families no longer exercise much discipline in their spending" (pp. 11–12). The importance of fiscal restraint is a theme Burns returned to often. For example, in testimony in July 1974 he said: "If the present inflationary problem is to be solved, and interest rates brought down to reasonable levels, the Federal budget must be brought into better balance. This is the most important single step that could be taken to restore the confidence of people in their own and our nation's economic future" (Burns testimony, 7/30/1974, p. 9).[7] Burns's view that monetary policy was only one of a number of policies needed to deal with inflation was echoed by Governor Brimmer at the FOMC meeting in April 1974: "He wanted the Committee to take responsibility for its part of the job, and he would encourage other agencies of the Government to take responsibility for their parts" (*Minutes*, 4/15–16/1974, p. 86).

A final indicator of weak commitment in this episode is that policymakers were somewhat

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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" (*Minutes*, 6/18/1974, p. 64). However, he was clearly the exception.

[7] He did, however, allow that monetary policy could have prevented inflation, but to do so would have been very costly: "From a purely theoretical point of view, it would have been possible for monetary policy to offset the influence that lax fiscal policies and the special factors have exerted on the general level of prices. … But an effort to use harsh policies of monetary restraint to offset the exceptionally powerful inflationary forces of recent years would have caused serious financial disorder and economic dislocation. That would not have been a sensible course for monetary policy" (Burns testimony, 7/30/1974, p. 17).

vague about their inflation goals. Most spoke simply of "bringing inflation under control" or of a desire to "slow the longer-run rate of inflation" (*Minutes*, 3/18–19/1974, p. 116, and *Minutes*, 4/15–16/1974, p. 94). In testimony in April 1974, Burns was somewhat more precise, saying: "The pace of inflation needs to be substantially reduced, even if it cannot be halted, this year" (Burns testimony, 4/4/1974, p. 22) He also said: "A concerted national effort to end inflation requires explicit recognition of general price stability as a primary objective of public policy. This might best be done promptly through a concurrent resolution by the Congress, to be followed later by an appropriate amendment to the Employment Act of 1946" (Burns testimony, 8/6/1974, p. 20). However, he did not ever give his definition of what "general price stability" was.

August 1978. Though monetary policymakers met our criteria for a contractionary monetary policy shock in August 1978, we view their commitment to disinflation in this episode as weak. Most important to this classification is the fact that policymakers put strict limits on how much output loss they were willing to accept to bring disinflation about. Federal Reserve Chairman G. William Miller said at the September 1978 FOMC meeting (*Transcript*, 9/19/1978, p. 18, bracketed material in the original):

> I would be very cautious to restrain the system more in the face of the pessimistic comments we already have and [precipitate] a recession just to make us all feel that we have done something more. I don't think that would contribute enough to solving the problem. You know, we are already down to growing at or below the trend line. Really, is there more that we can do short term?[8]

Similarly, Federal Reserve Bank of St. Louis President Lawrence Roos, said: "It seems to me that there is at least a majority consensus within this group that inflation is a problem and that it would be desirable, if possible, to attempt to slow growth in the aggregates without causing a recession. I think even the most maverick of us would be resistant to anything that would lead to recession" (*Transcript*, 9/19/1978, p. 31). Federal Reserve Bank of Minneapolis President Mark Willes said: "As anxious as I am to get [the aggregates] down, I want to get them down slowly precisely so we don't precipitate the recession that I think we can avoid if we are careful" (*Transcript*, 12/19/1978, p. 14, bracketed material in the original). That policymakers were only willing to bring output growth to slightly below trend and were highly averse to a full-blown recession suggests that they were about as far from having a "whatever-it-takes" attitude as they could have and still be classified as effecting a contractionary monetary policy shock.

A second indication that that policymakers' commitment to disinflation was weak is that they were very vague about what inflation rate they were aiming for, and they were clearly not in a hurry to get inflation down. At the October 1978 FOMC meeting, Miller emphasized that: "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" (*Transcript*, 10/17/1978, p. 23). In a speech soon after, he said: "It will take considerable time to eradicate this virulent disease. We must be willing to commit ourselves to an anti-inflation fight of five to seven years if we are to succeed in returning to price stability on a permanent basis" (Miller speech, 10/20/1978, p. 7). The reference to "price stability" could suggest they were aiming at zero inflation, but we see no evidence in the *Minutes*

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[8] Miller sounded even more risk averse in Congressional testimony in November 1978. He said: "If inflation is to be gradually slowed, ... real GNP at this juncture probably should not grow at an annualized rate much above 3 per cent, in line with the prospective growth of potential output. Nor, of course, do we want to see a protracted shortfall from that pace that would bring on recession and underutilization of labor and productive capacity" (Miller testimony, 11/16/1978, pp. 3–4).

that this was the actual goal. This, combined with the long horizon over which Miller saw inflation falling, suggests a very loose goal at best.

A third indication of a low commitment to disinflation is Miller's view that monetary policy could not lower inflation on its own without extreme costs. This view was expressed in a number of speeches in the fall of 1978. For example, in late October, he said: "Monetary policy cannot do the job alone. If we were left as the only restraining influence during a period of stimulative fiscal policies then the degree of monetary restraint would have to be so severe as to bring the economy to its knees" (Miller speech, 10/25/1978, p. 4; see also Miller speech, 10/20/1978, p. 5). Perhaps more telling was the long list of other policies that Miller felt were needed to reduce inflation. In a speech in December 1978, he said: "Let me outline some of the components of this arsenal [to fight inflation]: first, fiscal policy; second, incomes policy; third, reduction in regulatory burden; fourth, revitalization of productivity; fifth, a balance in our international accounts; and sixth, a monetary policy which complements and supports the other elements" (Miller speech, 12/12/1978, p. 3). Though putting monetary policy sixth on the list may have been merely a rhetorical flourish, when combined with the other signs of low commitment, it can't help but feel like an omen.

October 1979. Monetary policymakers' commitment to disinflation was very strong in this episode. At the start of the emergency FOMC meeting he call on October 6, 1979, Federal Reserve Chairman Paul Volcker said: "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" (*Transcript*, 10/6/1979, p. 5). Member after member of the FOMC said they were willing to accept significant output losses to bring inflation down. For example, Philip Coldwell, President of the Federal Reserve Bank of Dallas, said: "The risks are large, of course, and [primarily] on the side that whatever recessionary tendencies are already there might be compounded, creating a [greater] decline" (p. 12, bracketed material in the original). Frank Morris, President of the Federal Reserve Bank of Boston, 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" (p. 14). And Governor Henry Wallich said: "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. These statements do not quite rise to the level of "whatever it takes," but they are close. The vote to move to a new operating procedure that would allow much larger rises in the federal funds rate was unanimous.

One unusual feature of this episode is that monetary policymakers often expressed their commitment to disinflation and the new policy framework directly. For example, on a conference call in early March 1980, Roger Guffey, President of the Federal Reserve Bank of Kansas City, 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" (*Transcript*, 3/7/1980, p. 7). Volcker, at the March 1980 FOMC meeting said: "If we have another false start, we'll be in considerable trouble even though that clearly runs the risk of overkill. ... The worst thing we could do is to indicate some backing off at this point when we have an announced anti-inflation program" (*Transcript*, 3/18/1980, p. 36). Volcker also expressed strong commitment to the policy in his public remarks. For example, in a speech to the National Press Club in January 1980, he said: "I am acutely conscious that the question I receive most frequently is not why did you do it, but rather, 'Will the Fed stick with it?' My own short and simple answer to that question is yes. I do not intend to qualify that answer" (Volcker speech, 1/2/1980, p. 4). In his Humphrey-Hawkins testimony in February 1980, he said:

"In the past, at critical junctures for economic stabilization policy, we have usually been more preoccupied with the possibility of near-term weakness in economic activity or other objectives than with the implications of our actions for future inflation. ... As a consequence, fiscal and monetary policies alike too often have been prematurely or excessively stimulative, or insufficiently restrictive" (Volcker testimony, 2/19/1980, pp. 2–3). He emphasized that: "The broad objective of policy must be to break that ominous pattern. That is why dealing with inflation has properly been elevated to a position of high national priority. Success will require that policy be consistently and persistently oriented to that end. Vacillation and procrastination, out of fears of recession or otherwise, would run grave risks" (p. 3).

Two characteristics of the policy discussion, however, make us feel that commitment to disinflation did not rise to the very highest level. One is that, like Miller, Volcker continued to give a laundry list of the other policies that were needed to aid the reduction of inflation. For example, in testimony to the Joint Economic Committee in mid-October 1979, he said: "we should not rely on monetary policy alone, critical as disciplined monetary policy is, to solve our economic problems. We also need a sustained, disciplined fiscal policy; we need an effective energy policy, ... ; we need regulatory and tax policies that will help stimulate investment, cut costs, and increase productivity; and we need international cooperation and understanding" (Volcker testimony, 10/17/1979, p. 7).[9] One sign that Volcker saw a more central role for monetary policy than Miller did is that he did acknowledge that: "In theory, monetary policy could do the job alone," but "in practice, complementary policies are needed to smooth the path and build the base for sustained growth" (Volcker testimony, 2/1/1980, p. 10).

The other characteristic that signaled less-than-wholehearted commitment was that policymakers' goal for inflation was quite nebulous in this episode. In a speech to the American Bankers Association, Volcker said: "What we can do, and I see no reasonable alternative, is to start the process—to turn the corner—to demonstrate the conviction that we have the wisdom and fortitude to maintain the financial discipline required to cope with inflation" (Volcker speech, 10/9/1979, p. 10). Likewise, in testimony in February 1980, he said: "Our purpose in this program was to signal clearly and forcibly our unwillingness to finance an accelerating rate of inflation and our desire to 'wind down' inflationary pressures" (Volcker testimony, 2/1/1980, p. 7). Both of these comments suggest at most a desire to change the trajectory of inflation, not a firm or timely goal. Despite this and the previous caveat, however, there can be little doubt that policymakers were strongly committed to disinflation in this episode.

May 1981. After allowing interest rates to fall substantially in the late spring and summer of 1980, and then remain relatively low for a number of months, monetary policymakers agreed to take a second serious run at disinflation. This second contractionary shock emerged somewhat gradually. But once it was agreed upon, policymakers' commitment was very high.

A common theme of the policy discussion was that policymakers did not want to repeat the error they felt they had made in loosening substantially in the late spring of 1980. For example, in December 1980, Governor Henry Wallich said: "I think we should make every effort to avoid a replay of 1980, with a sharp drop in interest rates which misleads everybody as to what our policy is, and then probably a replay of what happened this fall" (*Transcript*, 12/18–19/1980, p. 43). Likewise, in July 1981, Chairman Volcker said (*Transcript*, 7/6 –7/1981, p. 36):

I haven't much doubt in my mind that it's appropriate in substance to take the risk of

[9] Indeed, the similarity to Miller's remarks makes one wonder if they merely had the same speech writer.

> 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. That is much more likely to give a more satisfactory economic as well as inflationary outlook over a period of time as compared to the opposite scenario of heading off economic sluggishness or even a downturn at the expense of rapidly getting back into the kind of situation we were in last fall where we had some retreat on inflationary psychology and the latent demands in the economy immediately reasserted themselves.

Roger Guffey, President of the Federal Reserve Bank of Kansas City, echoed the same sentiment, saying (p. 55):

> 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 because for the first time ever we do have, for whatever length of time, the support of the Administration at least. So, we ought to take advantage of that opportunity.

As in 1958, we believe that policymakers' expressions of remorse about not sticking with the previous policy and deciding to try again conveys tremendous commitment.

Another sign of strong commitment comes from the clear willingness of policymakers to accept substantial output losses to get inflation down. Federal Reserve Bank of St. Louis President Lawrence Roos said in December 1980: "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" (*Transcript*, 12/18–19/1980, p. 36). At the same meeting, Chairman Paul Volcker 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). At the FOMC meeting in May 1981, which is when we date the second Volcker-era shock, Governor Lyle Gramley said: "This is a Committee that follows a tough policy. It's only a question of how far we go" (*Transcript*, 5/18/1981, p. 32). In July 1981, Governor Wallich said: "If we get out of this inflation, … I think it will be because costs are coming down. And costs will come down in the [usual] painful and unpleasant way—falling profits, rising excess capacity and, unhappily, higher unemployment" (*Transcript*, 7/6–7/1981, p. 31, bracketed material in the original). Likewise, FOMC Vice Chairman Anthony Solomon said: "I think it's more likely that after a protracted period of these high real interest rate levels we will see a significant recession both here and abroad" (p. 22). These comments are about as close to a "whatever it takes" sentiment toward the acceptable costs of disinflation as we see in the historical *Minutes* and *Transcripts*.

Though Volcker continued to mention a wide range of other policies that he felt would be useful in lowering the costs of disinflation, his public statements in this episode ultimately put the burden of disinflation squarely on monetary policy. In November 1980, before the clear renewal of contractionary policy, Volcker said (Volcker testimony, 11/19/1980, p. 10):

> What we must do is convey a general sense—and make good on that message—that excessive money and credit creation will not underwrite the inflationary process. Taken alone, as I have suggested, that commitment implies an extraordinarily heavy burden on monetary policy. So equally, we need the perception and the reality that

> essential monetary restraint will be combined with persistent and effective policies in other directions so that monetary restraint can be tolerable and sustainable.

By March 1981, he had evolved toward the view that: "The Federal Reserve has an indispensable role to play in dealing with inflation. To be effective, we must demonstrate that our own commitment is strong, visible, and sustained. That is our intention" (Volcker testimony, 3/27/1981, p. 10). And in his Humphrey-Hawkins testimony in July 1981, he said: "These considerations help point to the wide range of policies necessary to support a sustained and effective effort against inflation. … But there can be no escaping the fact that monetary policy has a particularly crucial role to play and, in current circumstances, has a particularly heavy burden" (Volcker testimony, 7/21/1981, p. 3).

The one aspect of this episode that doesn't clearly scream commitment is the lack of a clear goal for inflation. Indeed, one striking feature of the policy discussion in 1981 is the degree to which inflation was barely mentioned. It is possible that the goal was so obvious to people in the room that they didn't feel the need to express it. Perhaps the closest statement of a goal came in a Volcker comment at the July FOMC meeting. He said: I think we have clearly taken the froth out of inflation. … I think we've been exceptionally lucky on oil … and we've been pretty lucky on food. The trick is to convert that luck, to the extent that it is luck—it's partly tight money—into a more lasting wage and cost pattern" (*Transcript*, 7/6 –7/1981, p. 32). But this is clearly just a statement about the direction he wants inflation to go, not a clear goal.

Even admitting this one aspect of weakness, we feel comfortable scoring this episode at our highest level of commitment. The willingness to inflict significant output losses to get inflation down, combined with the inherent forcefulness of monetary policymakers undertaking a second monetary contraction because they felt they had erred in ending the previous one too soon, are sufficient evidence of very high commitment.

December 1988. The narrative record indicates that monetary policymakers were only moderately committed to disinflation during this episode. The most important reason for this classification is that policymakers put definite limits on how much output they were willing to sacrifice to bring inflation down. For example, at the December 1988 FOMC meeting, Federal Reserve Bank of Philadelphia President Edward Boehne said: "So, while we clearly need to rein the economy in, about the last thing we need is a recession …. So, I come down on the side of reining in but doing it with some caution" (*Transcript*, 12/13–14/1988, p. 40). Likewise, Governor Edward Kelley said: "Over the foreseeable horizon in the next year or two, I think it's in nobody's interest to allow—that's too strong a word—nobody's interest to have a recession occur. … I would simply like to say that it's my hope that as we do go forward here, we'd be very careful as to how aggressive we get. We don't want to wind up with a Pyrrhic victory" (p. 47). Chairman Greenspan clearly endorsed this view that disinflationary policy should not be allowed to cause significant output losses, saying: "One starts off with the quite credible concerns of Governors Kelley and LaWare about the dangers of a recession. I think that we must make certain that we focus policy in a manner which reduces the probability that we will be confronted with that" (p. 52). We do not see in these comments anything that could be characterized as a "whatever it takes" attitude in this episode.[10]

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[10] There was obviously a range of opinion on the FOMC, with some members being more willing to risk a more severe slowdown. For example, W. Lee Hoskins, President of the Federal Reserve Bank of Cleveland, said: "I think the costs of allowing inflation to become embedded in the economy are very high, and I would

In his public remarks, Greenspan reiterated his desire to limit the output consequences of the disinflationary policy. In testimony in February 1989, for example, he said: "The Federal Reserve expects its policy in 1989 to support continued economic expansion, even while putting in place conditions for a gradual easing in the rate of inflation over time" (Greenspan testimony, 2/28/1989, p. 4). Likewise, in March, he testified: "It is just such an acceleration [of inflation] that could feed the kind of imbalances that ultimately bring expansions to an end. The Federal Reserve's earlier money market tightening and the discount rate action last week were taken to forestall such imbalances in order to keep the economy on a more sustainable path toward price stability" (Greenspan testimony, 3/2/1989, p. 4)

Like Volcker in 1981, Greenspan invoked the need for other policies to reduce inflation, but he clearly placed the primary burden on monetary policy. For example, in February 1989, he said: "Price stability … requires that aggregate demand be in line with potential aggregate supply. Inflation in the longer-term is essentially a monetary phenomenon. But large budget deficits contribute to the problem …. Thus, in the present circumstances, fiscal policy can help to smooth our progress over the next few years toward better price performance" (Greenspan testimony, 2/28/1989, pp. 5–6).

One way that policymakers in the 1988 episode showed quite strong commitment was in setting a firm goal for inflation. Greenspan, in testimony in February 1989, defined price stability as: "establishing an environment where expected changes in the average price level are small enough and gradual enough that they do not materially enter business and household financial decisions" (Greenspan testimony, 2/28/1989, p. 5). This definition was cited by Donald Kohn, Secretary and Economist, at the February 1989 FOMC meeting. He said: "the Chairman in particular in recent testimonies—put out a very strong statement about our objective and backed it with reasons why price stability is our objective, without necessarily saying [we plan to achieve that] by the year 1993 or something like that" (*Transcript*, 2/7–8/1989, p. 31, bracketed material in the original). In a back-and-forth with President Hoskins at the March FOMC meeting, Greenspan affirmed price stability as the policy goal. Hoskins said: "many of us have spoken out about price stability. … If that's not our objective then I think we probably ought to talk about it." Greenspan replied: "No, I think it is our objective" (*Transcript*, 3/28/1989, pp. 39—40).

Overall, the clear limits set on the output consequences lead us to not score policymakers' commitment to disinflation in this episode as particularly high. But the firm (albeit clearly quite long-run) goal for inflation and the central role assigned to monetary policy suggest that commitment was at least moderate.

skew policy and take the risk on the side of being overly tight" (*Transcript*, 12/13–14/1988, p. 44). While this view did not carry the day, a profile of Greenspan by Louis Uchitelle (1989) suggests that a desire to find consensus pushed the Federal Reserve Chair to accept more restrictive policy than he otherwise might have. Greenspan's comments at the February 1989 FOMC meeting add credence to this characterization. He said: "I think it is very important for the credibility of this Committee to try to find some consensus as best we can, because even though there's a large bimodal distribution out there I think we're not that far apart. And I think it would be very useful if we could find a means to accommodate each other in such a way that we can have a policy that we all can essentially go along with, though we all may not feel fully comfortable with it" (*Transcript*, 2/7–8/1989, p. 49).

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