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Continuity and Change in the Federal Reserve's Perspective on Price Stability

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Abstract

By examining statements made by the Federal Reserve leadership since the early 1950s, we establish that there has been considerable continuity in policymakers' perceptions of the benefits of price stability. Policymakers have consistently contended that deviations from price stability give rise to greater cyclical instability, and they have also frequently suggested that potential output is significantly lowered by inflation. The recurrent support for price stability that comes through in these statements implies that it is invalid to take periods in the U.S. record of deviations from price stability as indicating a policymaker belief in the desirability of inflation.

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JEL classification codes: E31; E52; E58.

1. Introduction

Along with the goal of maximum employment, price stability is a statutory objective of the Federal Reserve, as part of the dual mandate assigned to monetary policy.[1] In pursuing this dual mandate, the Federal Reserve's Federal Open Market Committee (FOMC) has specified a longer-run inflation rate of 2 percent (in PCE prices) as its price-stability goal. This numerical goal is set out in its Statement on Longer-Run Goals and Monetary Policy Strategy (also known as the Committee's "consensus statement"), originally released in 2012 (see Federal Open Market Committee, 2012). The 2 percent goal has been consistently reaffirmed in subsequent versions of the consensus statement.

Notably, considerable judgment, involving economic analysis, underlies the FOMC's choice of the 2 percent goal. The consensus statement indicates that a 2 percent longer-run inflation rate is consistent with price stability and should serve as the criterion for assessing the achievement of this part of the dual mandate. But when the 2 percent objective was announced, authoritative Federal Reserve statements also indicated that this number was assessed as being the rate *most likely*—compared with a zero percent rate, a 1 percent rate, or, at the outer bound of price-stability-consistent rates, 3 percent—to help secure the achievement of the Federal Reserve's other macroeconomic goal of maximum employment.[2] Consequently, a longer-run inflation rate of 2 percent was deemed in the consensus statement to be the numerical objective most consistent with the Federal Reserve's mandate.

These announcements indicate that, in the course of operationalizing its statutory objective, the Federal Reserve leadership expressed a judgment about the *implications of different longer-run*

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[1] This dual mandate was formalized in law in 1977 in an amendment to the Federal Reserve Act. The wording of the mandate—"the goals of maximum employment, stable prices, and moderate long-term interest rates"—had previously been used in a resolution applying to the Federal Reserve that both houses of Congress passed in 1975 (see the remarks of Rep. Henry S. Reuss in the hearing of July 18, 1977, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1977, pp. 2–3). In practice, the third item listed in the mandate—moderate longer-term interest rates—has not been considered a separate policy goal, as longer-term price stability is seen as securing moderate long-term interest rates (see, for example, Mishkin, 2007, and Ihrig, Meade, and Weinbach, 2015, p. 183). In a companion paper, we discuss the evolution of the Federal Reserve's mandate and policymakers' interpretation of the mandate (see López-Salido, Markowitz, and Nelson, 2024).

[2] See, in particular, Bernanke's (2012) remarks, at the press conference that he gave on the day of the release of the consensus statement, about the real costs of inflation rates above or below 2 percent. The consensus statement's assessment of 2 percent as the mandate-consistent inflation rate was based on considering the full dual mandate, not just its price-stability element. In this vein, Bernanke (2012, p. 22) remarked on release of the statement, "as we've talked about frequently, we set inflation—our inflation objective—in a way that was consistent with both sides of the mandate." In addition, in May 2013 testimony, Bernanke referred to the "2 percent rate that the Federal Open Market Committee (FOMC) judges to be most consistent with the Federal Reserve's statutory mandate to foster maximum employment and stable prices."

inflation rates for economic performance. That is, policymakers took a stand on the *structural behavior* of the U.S. economy. That 2012 assessment motivates our examination in this paper of the views that the Federal Reserve held over the pre-2012 period on the same issue. We document continuity and change in the Federal Reserve's perspective on price stability by analyzing how policymakers' position on the relationship between sustained rates of inflation and other economic variables has evolved.[3] As we will show, policymakers over the decades have frequently provided a definite position on this matter, including in periods well before the start of the numerical inflation goal in 2012 and the advent of the modern dual mandate in the late 1970s. Providing a longer-term picture of those policymaker judgments is our focus.

In the analysis, we consider the sixty years spanning from the early 1950s (when autonomy on setting monetary policy was returned to the Federal Reserve, via its 1951 Accord with the U.S. Treasury) to the early 2010s, when the Committee's position on price stability had settled into the set of views that was expressed in the 2012 consensus statement and that has been substantially reaffirmed in the revised consensus statements and other authoritative public documents. We therefore put the FOMC's modern-day inflation goal into a longer-term context, by examining the Federal Reserve's stance, over time, on the merits of price stability. The analysis brings out the views, over these decades, of the Federal Reserve leadership (primarily the Chair, but with consideration given also to elaborations of views put on the public record by other major officials) on the relationship between price stability and overall economic performance.

Our analysis is most specifically concerned with *ascertaining the costs, as perceived by policymakers, of deviations from price stability*. To this end, we examine what senior Federal Reserve officials over time have seen as the likely economic repercussions of deviations from price stability—and, in particular, what their assessments were of the implications of sustained above-normal inflation rates. In so doing, we consider policymakers' views on the merits of price stability as a goal in its own right and on the relationship between the price-stability objective and the real long-term objective embedded in the maximum-employment mandate, as well as related goals articulated by policymakers (such as maximum sustainable economic growth).

[3] We focus on Federal Reserve Chairs and the Vice Chairs of the Federal Open Market Committee and the Federal Reserve Board. We also consider public statements of some other high-level Federal Reserve officials (including, in the 1940s and 1950s, senior advisers such as E.A. Goldenweiser and Winfield Riefler, each of whom fulfilled the role of helping to provide explanations to the general public of the economic thinking behind monetary policy).

We bring out how policymakers perceived that elevated inflation rates would be costly in terms of real economic performance—as manifested in the behavior of employment, productivity, and real GDP growth—and that this consideration—rather than narrow monetary-sector considerations, such as inflation's status as a source of costs of holding cash balances—was central in the case that they made for price stability. We also establish that policymakers wished to avoid deflation, as they regarded deflationary conditions as a negative influence on real economic activity.[4] By drawing out the views expressed by pre-2012 policymakers on the costs of departures from price stability, our analysis reveals the antecedents to the FOMC's characterization—as given in successive versions of the consensus statement—of the relationship between its longer-run inflation and employment goals.[5]

We find considerable consistency over time in policymakers' general perception of the implications of above-normal inflation rates for economic performance.[6] We show that the Federal Reserve leadership's emphasis on the costs of inflation and on the corresponding desirability of price stability was prevalent both during the decade from the mid-1950s to the mid-1960s—a period when price stability largely prevailed but the U.S. economy was often seen as vulnerable to an outbreak of inflation—and during the more sustained deviations from price stability that the United States experienced from the mid-1960s through the early 1980s.

In particular, in examining official views over the period since the 1950s regarding the costs of high inflation, we establish numerous parallels with the situation seen since 2021. In the recent period, during which—for the first time in decades—inflation, on multiple measures, has been well above 2 percent for a stretch of time, Federal Reserve policymakers have underscored both the costs of deviating from price stability and the role played by anchored inflation expectations as a necessary condition for the orderly expansion of economic activity. In articulating this point, they have, in effect, been echoing a message that has been conveyed repeatedly over many

[4] The notion advanced in some economic research that mild steady-state deflation might be desirable was not pursued or endorsed by leading policymakers. See Section 2 below.

[5] As indicated presently, we discuss the fact that policymakers consistently viewed variations in inflation as harmful to the execution of stabilization policy. Primarily, however, our focus is on policymakers' perception of the longer-run relationship between the employment and price-stability goals. Consequently, we do not consider in detail changing views over time in the *short-run* connection between inflation and employment. This subject, while important, is separate from the center of attention in this paper.

[6] Because our focus is on policymakers, we will not attempt to cover the evolution of the debate in the research literature on the costs of inflation. We will, however, on occasion point to the verdict of economic research regarding the importance of some of the costs of inflation that policymakers have tended to stress. We will also highlight a number of cases in which the Federal Reserve deviated from the consensus view, and focus, of researchers. One example, already mentioned, is policymakers' lack of interest in—versus many researchers' attention to—monetary frictions as a cost of inflation and in deflation as a means of addressing that cost (see Section 2 below for details). Another example, discussed presently, concerns views on long-run Phillips-curve tradeoffs.

years in Federal Reserve policymakers' statements. In earlier periods, as in recent times, it was frequently stressed by officials that stable long-term inflation expectations—a state that monetary policy can help create—make sustained economic expansion more likely, in part because they better position the central bank to carry out countercyclical monetary policy.[7]

As indicated above, our analysis establishes that an aversion to inflation—on the basis that it generates high real costs—is a fundamental element of *continuity* that we find in Federal Reserve statements over the years. With regard to *change*, we establish that there have been some notable shifts in *policymakers' perceptions of the mechanisms through which inflation hurts, and price stability benefits, the economy*. These shifts sometimes likely reflected reassessments prompted by accumulating empirical evidence. For example, one longstanding policymaker basis for favoring low inflation was the notion that price stability boosts longer-term economic growth. Although it was championed in the 1980s and 1990s by Paul Volcker and Alan Greenspan, this notion has received much less emphasis in more recent decades, as judgments have hardened that factors driving real economic growth are not very sensitive to modest variations in steady-state inflation. Other shifts in policymakers' views on inflation's costs have evidently reflected changes in the structure of the U.S. economy. For example, in the 1950s and 1960s, when the United States and other nations had fixed exchange rates, it was natural to cite inflation as a factor tending to put the overall balance of payments (that is, the sum of the disequilibria of the current and capital accounts) into deficit. This factor no longer figured among the perceived costs of inflation once floating exchange rates allowed overall payments balance to occur automatically in both high- and low-inflation conditions.

It is therefore certainly the case that, in the wake of changes in the financial system and the structure of the real economy, specific costs of inflation have received different degrees of emphasis over time. Nevertheless, a key contention that has been made prominently and recurringly by policymakers, from the 1950s onward, is that entrenched high inflation has adverse implications for the longer-term behavior of aggregate potential output and its components, including long-run levels of employment and productivity.[8] The assessment that these effects are significant bears on policymakers' perspective on the variables that enter the modern dual mandate. Federal Reserve officials have consistently judged there to be adverse repercussions of longer-term deviations from price stability (one of the dual-mandate goals) for

[7] As discussed in Section 4.2, the confidence that policymakers had in their ability to affect inflation, and hence inflation expectations, waned during the 1970s. Even in that period, however, it was accepted that expectations of price stability, if achieved, contributed to real economic stability.

[8] As we discuss in Section 3.2, relative price dispersion and the impairment of saving/investment connections have been highlighted by successive policymakers as key channels through which inflation generates real costs.

the achievement of the goal of maximum employment (the other dual-mandate goal).[9] They have taken this position even in periods, such as the 1960s, when there has been substantial disagreement among outside researchers—notably in U.S. academia—about the desirability of price stability (as compared with deviations from price stability, such as an inflation rate of 3 percent-plus).[10]

The dual-mandate goals of maximum employment and price stability have equal weight by law. When it comes to how Federal Reserve policymakers perceive the task of achieving these two goals, we find that they have consistently tended to emphasize the basic *complementarity of the goals*. As indicated above, Federal Reserve officials have always stressed the disruptions to the level, and stability, of real output arising from inflation. In doing so, they have pointed to the consideration that the occurrence of longer-term inflation complicates the execution of stabilization policy and damages potential output—which has substantiated their conviction that a low longer-term inflation rate is desirable on economic grounds, as well as being a legislative requirement. This stress on an inflation/potential-output linkage extended to policymakers regularly pointing toward price stability as a factor likely to raise economic growth. They did so especially over the 55-year period spanning the William McChesney Martin, Jr. tenure as Chair through the Alan Greenspan years.[11]

Consistent with what policymakers said over time, we take price stability as corresponding to a slightly positive, but single-digit and low, longer-term inflation rate. The conclusions of the current paper do not hinge on what specific inflation rate corresponded in policymakers' minds to "price stability" before 2012. Our analysis here requires only that they perceived price stability as corresponding to the avoidance of sustained deflation and of inflation persistently in excess of 3 percent.[12]

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[9] Although the modern dual mandate of maximum employment and price stability dates to the late 1970s, pre-1970s policymakers also regarded themselves as statutorily required to meet these goals. We discuss this point in detail in López-Salido, Markowitz, and Nelson (2024).

[10] This 1960s literature was centered on the properties of the Phillips curve (see Hoover, 2015, for a detailed analysis of a benchmark reference in this literature—namely, Samuelson and Solow, 1960). As already discussed, because our focus is on *policymakers'* views on inflation over the postwar decades, we do not attempt a systematic discussion of U.S. research developments and debates that occurred in the same period.

[11] Since then, as reflected in the consensus statement, the growth-supporting nature of price stability has continued to receive stress, but principally as a necessary condition for sustainable growth rather than as a reason to expect higher average growth.

[12] In a parallel analysis, we seek to nail down policymakers' pre-2012 inflation goal on the basis of their statements and conclude that the midpoint of their goal was between 1 and 2 percent through the 1980s and about 2 percent consistently from the 1980s onward. See López-Salido, Markowitz, and Nelson (2024).

Our findings in this paper lead us to judge that Federal Reserve policymakers consistently favored price stability. It follows that low-frequency movements of historical U.S. inflation should be seen primarily as sustained deviations from the Federal Reserve's—largely unchanged—inflation goal. In particular, we establish that, during the 1970s—a decade in which actual four-quarter U.S. inflation was continuously above 2 percent, often severely so—high inflation was *not* a goal, and a return to price stability was repeatedly affirmed by the Federal Reserve's leadership as a multi-year policy objective—with such affirmations occurring both before and after the legislative developments of mid-decade that made price stability an explicit statutory objective.

Related literature. In the course of the discussion in subsequent sections, we put our findings in the context of existing studies of U.S. monetary policy objectives. It is worth stressing here, however, that our focus on policymaker statements leads to a substantially different conclusion from those of many previous studies. In particular, as already indicated, we find that price stability has been a consistent goal of Federal Reserve policy. This is a different conclusion from, for example, Sargent, Williams, and Zha (2006) who—in common with many other researchers—operate on the postulate that in the 1960s and 1970s "the monetary authority's inflation target evolves as its estimated Phillips curve moves" (p. 1193).[13] Our result also contrasts with various studies that try to infer a time-varying U.S. implicit inflation target on the basis of actual inflation outcomes (see, for example, Cogley and Sbordone, 2008) or the behavior of the yield curve (see, for example, Doh, 2012) and associate large target-rate increases with periods of high U.S. inflation. Instead, as already indicated, we find that the evidence is consistent with a price-stability-consistent rate being the Federal Reserve's longer-term inflation objective, even when actual inflation was persistently high.[14] The Federal Reserve's consistent belief in the desirability of price stability implies that it was not, in fact, inclined to see raising inflation as beneficial for economic activity or to seek deviations from price stability for the purpose of stimulating output above its potential level.[15]

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[13] Sargent, Williams, and Zha (2006) are part of a tradition that sees U.S. policymaking in the 1960s and 1970s as heavily influenced by 1960s-vintage U.S. economic research, as already discussed, that suggested that the long-run Phillips curve was nonvertical and that higher inflation can buy higher unemployment. As detailed below, we find that, on the contrary, U.S. policymakers, including those at the Federal Reserve, valued price stability throughout this period. In particular, they rejected the notion of a long-run Phillips-curve tradeoff (see Section 4.1).

[14] López-Salido, Markowitz, and Nelson (2024) show that an inflation-target series obtained for the period from 1951 to 2011 on the basis of policymakers' statements differs very substantially from inflation-target series that have been estimated by researchers.

[15] A similar comment applies to research focusing on time inconsistency as a means of understanding postwar U.S. monetary policy developments, such as Ireland (1999) and, to some extent, Sargent (1999). Accounts of this kind, like those appealing to reliance on estimated Phillips curves, require (contrary to our findings in this paper) there to

Our conclusions also differ from those of Meltzer (2009), who sees the Great Inflation of the 1970s as the result of Federal Reserve policymakers assigning a low weight to price stability (and a correspondingly high weight to real goals) in their assessment of the U.S. welfare function. We find, in contrast, that pre-1979 Federal Reserve officials—in common with those in succeeding decades—not only valued price stability highly but also viewed its attainment as essential to the sustained achievement of national goals regarding production and employment. Having such a mindset, policymakers would not—and did not—view high inflation as something to which they and the community had to acquiesce, in order for real goals to be attained. In that light, the high inflation outcomes of the 1970s should be viewed as reflecting the inadequate appreciation among that era's policymakers of monetary policy's centrality to the control of inflation and *not* as evidence of an official position that elevated inflation rates are desirable.[16]

The investigation undertaken here also builds on previous studies of the evidence available in Federal Reserve statements on price stability and monetary policy's objectives. Studies that consider pre-2012 policymakers' perspectives on price stability include Orphanides (2006), who focuses on the Volcker and Greenspan years, and English, López-Salido, and Tetlow (2015), who highlight Alan Greenspan's early discussions of price stability. Compared with these studies, we take the analysis back to the start of the Martin era and greatly expand the number of policymaker statements considered over the Volcker and Greenspan periods.

Among other studies of policymaker statements, Romer and Romer (2002) stress, as we do, continuity in U.S. policymakers' macroeconomic objectives of policymaking in the 1950s to 2002 and, in particular, their emphasis on the benefits of price stability. A key difference in our approach concerns sources. Romer and Romer use two principal sources in gleaning policymakers' views: successive years' editions of the *Economic Report of the President* and records of FOMC meeting deliberations in the form of minutes or transcripts of FOMC meetings (or prior decades' counterparts to these documents). In contrast, we concentrate on Federal Reserve officials' statements before Congressional committees, in speeches, in interviews, and in letters to members of the general public.

The reason for favoring sources such as statements to the general public and to Congressional committees in our analysis is that these materials are among those in which Federal Reserve officials would be most likely to articulate their interpretation of monetary policy's mandate and

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have been periods when policymakers consciously sought high inflation, possibly with the aim of stimulating real economic activity.

[16] See Section 4.3.

their own basis for believing in the desirability of price stability. Such discussions are not to be found in the *Economic Report of the President*, as it is not a Federal Reserve product.[17] They are also likely to appear only sporadically in FOMC meeting deliberations as recorded in transcripts and minutes. The reason is that policymakers' internal discussions, such as those in FOMC meetings, are likely to take as common ground—and therefore, to a substantial extent, often leave unspoken or express only in shorthand form—the Federal Reserve's dual mandate. Matters such as these are more likely to be considered far more explicitly when policymakers talk to the public—and so feel a need to spell out the ultimate goals that monetary policy is pursuing—and to Congress—when they may often trace their decisions to legislatively-assigned goals.

This paper proceeds as follows. In Section 2, we discuss a classic cost of inflation—monetary frictions—that has been emphasized in economic research. In so doing, however, we stress that, for multiple reasons, monetary frictions have not figured importantly in the Federal Reserve leadership's perception of the *economic* basis for supporting price stability and that this has been consistently the case over the postwar period. Policymakers, rather, stressed the importance of avoiding even mild deflation. Section 3 contains a detailed analysis of the various economic arguments for price stability that Federal Reserve policymakers made over time and how their arguments have related to specific channels linking inflation and the economy. Section 4 reconciles our finding that policymakers consistently favored price stability with protracted episodes of high inflation. Section 5 gives some concluding remarks.

2. Monetary frictions

The inconvenience associated with economizing on the amount of money balances associated with any volume of transactions in goods and services—what Woodford (2003, p. 417) calls the "monetary frictions" associated with positive inflation rates—has featured prominently in economic research on the welfare costs of inflation. In theoretical work on, and in quantitative analysis of, general equilibrium models, the presence of monetary frictions has often been suggested as a possible reason for concluding that mild deflation might have a beneficial effect on household welfare.[18]

[17] Our discussion below does recognize, however, that in the Kennedy Administration the executive branch played a prominent role, largely accepted by the time by the Federal Reserve, in expressing the goals of monetary policy.
[18] See, for example, Phelps (1965), McCallum (1990), Woodford (1990), Lucas (2000), and Diercks (2021) for analysis and discussion.

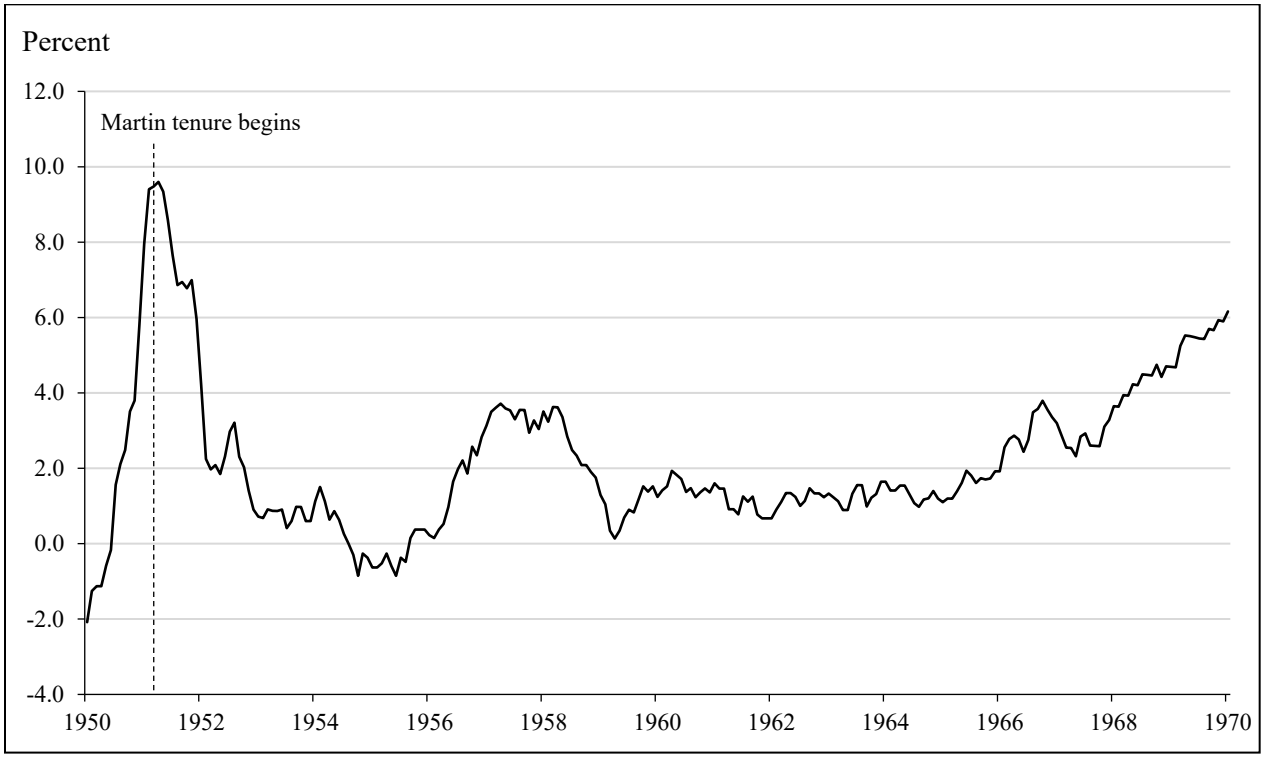
It deserves underlining, however, that, in contrast to the arguments centered on monetary frictions, successive Federal Reserve policymakers have consistently suggested that steady deflation was, on balance, highly undesirable. Ending the steep deflation of the early 1930s had been an aim of Marriner Eccles when he became Federal Reserve Chair in 1933, but he and his successors indicated that they also regarded mild deflation as undesirable. Along these lines, in remarks given after the end of his tenure, Eccles indicated that, as he saw it, "the maintenance of stable money… means the prevention of inflation and also the prevention of deflation."[19]

During the William McChesney Martin era, the Federal Reserve's symmetric perspective on the avoidance of inflation and deflation was reaffirmed, with Martin (1954, p. 3) observing that the Federal Reserve aimed to do "all that it can to minimize inflationary pressures on the upside and deflationary pressures on the downside," adding: "That is the goal we all seek." Martin (1953) acknowledged that, during his own tenure as Chair to date, the pressure on prices had been upward, not downward. This continued to be the case over his tenure (see Figure 1). Martin (1953) noted that, of late, the U.S. economy had not had "anything resembling a deflation" (p. 7), but he also suggested (p. 6) that the avoidance of inflation was partly motivated by the avoidance of price-level fluctuations that could ultimately lead to deflation: "What we are seeking to prevent in the end, of course, is deflation." Accordingly, Martin (1953, p. 5) suggested: "The ideal would be enough to meet the growth needs of the economy, without either inflation or deflation." Similarly, the FOMC's Vice Chair Alfred Hayes (1958) remarked with regard to attaining "maximum sustainable levels" of employment and production, "we believe that requires avoidance of either inflation or deflation in any marked degree."

As these statements indicated, the Federal Reserve emphasized prolonged adverse influences on real economic activity associated with deflation. Along the same lines, Martin (1953, p. 6) remarked that "when deflation sets in, businessman, banker, worker, suffer alike, as most of us here know from the early Thirties." Similarly, in the mid-1960s, Martin (1965a, p. 12) suggested that it was a responsibility of stabilization policy "to avert domestic deflation and unemployment," and noted, with respect to monetary policy specifically: "At all times, the central banker needs to be aware of the risk that the country might slide into either inflation or deflation… Hence, he will always be in the middle."[20] In sum, although policymakers were predominantly confronted by inflationary rather than deflationary concerns in the postwar period, they also recurrently indicated that deflation was an undesirable condition and did not give an

[19] Testimony of April 16, 1958, in Committee on Finance, U.S. Senate (1958, p. 1737).
[20] Martin (1965b, p. 4).

Figure 1. CPI inflation (twelve-month percent change), January 1950 to January 1970.



Source: FRED (Federal Reserve Bank of St. Louis).

important weight to welfare-based arguments for steady deflation, of the kind found in the monetary-frictions literature. This posture was evident when Volcker (1985c, p. 12), while noting that the United States now included among its population "a generation brought up to expect inflation," stipulated that *both* inflation and deflation should be avoided: "in conducting our affairs, we should [ideally] be able to assume the general level of prices won't change over relevant planning horizons by significant amounts in one direction or another."

Consistent with the strongly unfavorable perspective toward deflation just sketched, the warnings against inflation made by successive Federal Reserve Chairs have *not*, in fact, given monetary frictions a particularly prominent place among the costs of deviations from price stability. Correspondingly, there has been no interest at the policymaker level in deliberately producing deflation of the price level: for example, Chairman Martin stated (1953, p. 6), "when deflation sets in, businessman, banker, [and] worker suffer alike."

Aside from their unfavorable disposition toward deflation, another part of policymakers' viewpoint worked further toward implying a lack of stress on monetary frictions and on

addressing them through monetary policy. As we document in the next section, when policymakers have articulated the rationale for price stability, they have primarily emphasized channels that bear much more directly on the adverse repercussions that high inflation had for the levels, growth, and variability of output and employment.

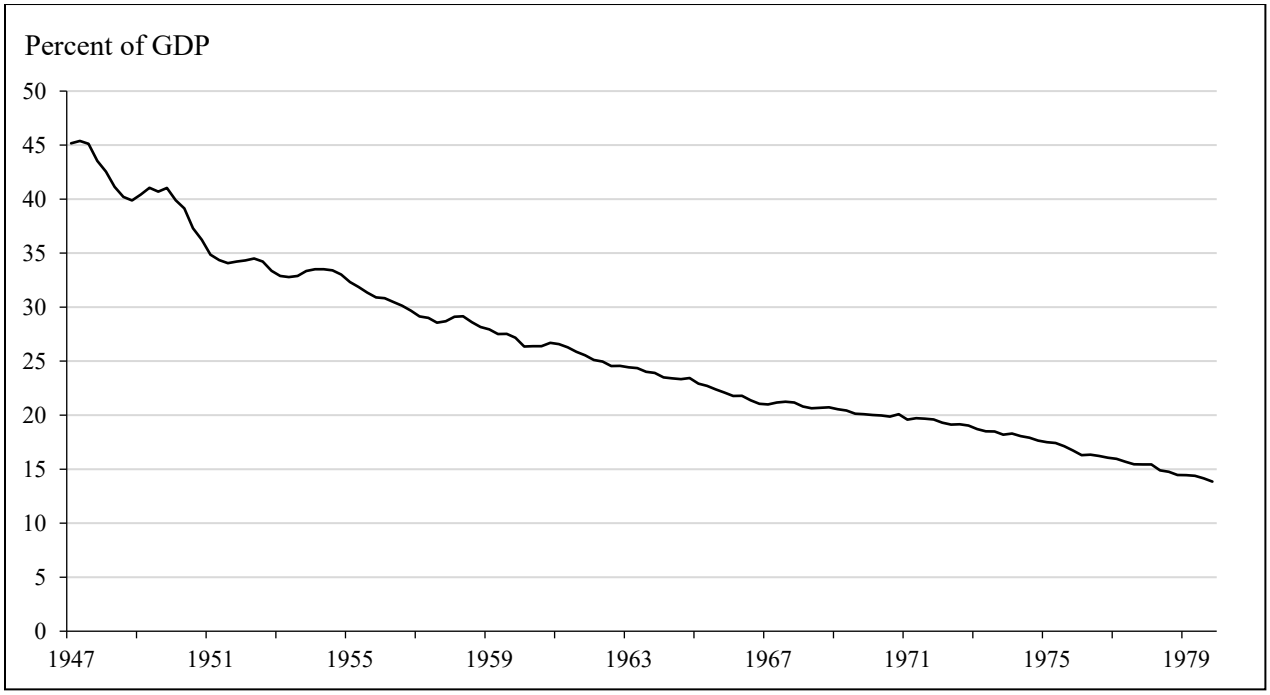
Why were monetary frictions deemphasized? In addition to the factors already cited, institutional considerations likely have played a major role in shaping how policymakers have ranked the costs of inflation. A key reason for the absence of a Federal Reserve policymaker emphasis on monetary frictions is that, throughout the postwar period, a significant component of U.S. households' money balances has taken the form of interest-bearing accounts, including time deposits (traditionally included in M2-type definitions of money) and savings deposits at thrift institutions (included in the definition of M2 since 1980). These interest-bearing components of money—the non-M1 share of M2—were a rising share of the money stock from the 1950s through the early 1980s, while M1 holdings fell *vis-a-vis* the economy (see Figure 2).

It is true that, until the mid-1980s, many interest-earning household deposits were subject to federal government interest-rate ceilings.[21] Even so, when these ceilings were binding, non-M1 money balances typically received interest at rates that, even when notably below yields on short-term securities, were at least equal to (and, more usually, somewhat above) price-stability-consistent inflation rates. In mid-1962, for example, the lowest ceiling rate was 2.5 percent, on deposits of more than three months' maturity, and the lowest ceiling rate was raised to 4 percent in 1963 (see Tobin, 1970, p. 5). In principle, therefore, these deposits always were, or could be, protected from low positive rates of inflation.

Under these circumstances, it may not be too surprising that the Federal Reserve leadership has over the decades tended *not* to point toward the cost of holding money balances as a prime cost of elevated rates of inflation. It is also likely, however, that the lack of emphasis by Federal Reserve policymakers on this cost reflected a judgment that the noninterest-bearing component of money—currency and demand deposits, the traditional components of M1—should not be a central concern in considerations regarding the appropriate or desirable inflation rate. Correspondingly, it was evidently believed that the existence of noninterest-bearing money should not be at center stage when arguing for price stability (and still less should serve as a

[21] In force since the 1930s, these ceilings had been used by the Federal Reserve during the 1960s as one of its monetary policy tools. In 1979, however, the Federal Reserve, along with other federal government agencies, recommended the phased removal of the ceilings (see President's Inter-Agency Task Force on Regulation Q, 1979). This step was legislated in 1980 and implemented in the subsequent years through 1986.

Figure 2. Currency plus demand deposits as a share of nominal GDP, 1947:Q1–1979:Q4.



Source: Data on currency and demand deposits consist of the quarterly averages of the old definition of U.S. M1 (seasonally adjusted), with the levels of this series as tabulated in Lothian, Cassese, and Nowak (1983, p. 704) used for 1947:Q1–1976:Q4, and subsequent levels through 1979:Q4 derived using the annualized quarterly growth rates tabulated in Simpson (1980, Table A1, p. 112). Quarterly data on nominal GDP were obtained from FRED (Federal Reserve Bank of St. Louis).

basis for preferring or advocating deflation).

As we now discuss, there were likely a number of particular institutional reasons for the lack of strong attention being placed on the cost of holding M1 balances.

On the regulatory side, there were arrangements in place in the postwar United States that tended to make nominal returns on demand deposits low. Therefore, these low returns were partly a policy choice, rather than something that it was natural for monetary policy to offset. Two policy-driven factors making for low returns on M1 money were embedded in U.S. legislation: the prohibition of interest on reserves (repealed in 2008); and the prohibition of interest on demand deposits (repealed in 2011). A third factor working in this direction was a mixture of legislation and Federal Reserve policy choice: demand deposits tended to have higher reserve requirements than did non-M1 M2 money balances. For example, in 1979–1980, the reserve

requirements applicable to banks' demand deposit liabilities ranged from 7 to 16.25 percent.[22]

In addition to these factors, it needs to be borne in mind that, in terms of household utility, noninterest-bearing money likely had attractions not brought out by standard calculations of opportunity cost. It was widely conjectured in the 1950s through the 1970s that the zero measured nominal return on demand deposit balances obscured a substantial implicit return, consisting of the services associated with the medium-of-exchange properties of these assets, as well as various conveniences offered by banks to demand-deposit holders. Additional evidence favoring this conjecture emerged when U.S. banks were allowed in the early 1980s to provide households with transaction accounts other than demand deposits—specifically, bank-issued negotiable order of withdrawal (NOW) accounts and Super NOW accounts. The conditions associated with households' holdings of these accounts typically involved restrictions on their checkability, as a *quid pro quo* for the deposits being interest-bearing. This pattern tended to reinforce the presumption that there was a sizable preexisting implicit interest rate on regular demand deposits (see Higgins and Faust, 1983, p. 8).

A further institutional development, in force by the mid-1990s, was the deposit-sweeping behavior of commercial banks. Together with other financial innovations, the advent of large-scale deposit sweeping made it even easier for households (or banks on their behalf) to change the mix of their deposit holdings between low- or noninterest-bearing transactions accounts and accounts that bore market-linked interest rates. This situation likely cast further doubt on approaches that suggested that the cost of holding money balances should figure prominently in arguments for price stability, as it underlined the fact that households' not receiving interest on money balances was a *choice* on their part.

As for the currency component of money, a similar consideration applied, as the mix between currency and deposits was always a choice on the part of households. By the 1990s, furthermore, a substantial volume of currency was held abroad—and so its noninterest-bearing status could not be regarded as a cost borne by U.S. households.[23] Even decades ahead of this development, however, it was clear that the Federal Reserve was disinclined to make the behavior of currency a key driver of Federal Reserve economic goals, with a senior Federal Reserve official observing (Goldenweiser, 1939, p. 1): "Currency, however, is only the small

[22] See the table included in Paul Volcker's testimony of July 24, 1980, in Committee on Ways and Means, U.S. House of Representatives (1980, p. 402).
[23] Schmitt-Grohé and Uribe (2011) incorporate the fact that much currency is held abroad into a formal calculation of the optimal U.S. inflation rate.

change of business… By far the more important part of our monetary medium are bank deposits."

In light of the U.S. background described above, the Federal Reserve drew attention to monetary frictions in discussing inflation but did not make it the prime reason for seeking price stability. For example, in December 1958, Chairman Martin (1958, p. 1), after noting, "The Federal Reserve System is designed to regulate the supply of money in order to foster high levels of employment and stable prices," went on to state of the latter objective: "Stability is not an end in itself but a means by which this higher standard of living can be attained and without which a lower standard of living becomes inevitable."

Chairman Volcker, speaking in an era in which price stability had been made an explicit statutory mandate, acknowledged: "We are, of course, concerned with price stability," when discussing the mandates assigned to the Federal Reserve by Congress.[24] He elaborated that (in contrast to Martin) he saw the price-stability goal as having merits as an economic objective in its own right, but that (in common with Martin) he saw price stability as necessary for achieving real aims: "this continuing effort reflects not simply a concern about the need for greater monetary and price stability for its own sake—critical as that is. The experience of the 1970s strongly suggests that the inflationary process undercuts efforts to achieve and maintain other goals, expressed in the Humphrey-Hawkins Act, of growth and employment."[25]

Two things are worth noting about Volcker's articulation of the goals. First, although he definitely affirmed price stability as a worthwhile goal separate from the behavior of real variables, he did not explicitly invoke monetary frictions. This likely reflects the fact that the impact of inflation on noninterest-bearing money figured much less importantly as a reason for "monetary and price stability for its own sake" than other considerations that he had in mind, and that, in particular, Volcker was mainly thinking of the need to bolster, through domestic price stability, the nominal value of the U.S. dollar exchange rate (which had depreciated considerably over most of the 1977–1980 period of revived U.S. inflation). Second, Volcker postulated an important long-run negative relationship between domestic real variables—output growth and

[24] Testimony of May 15, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980b, p. 59).

[25] Testimony of July 22, 1980, in Committee on Ways and Means, U.S. House of Representatives (1980, p. 97). At a separate Congressional hearing on the same day, Volcker likewise stated, "we want price stability for its own sake," but in the same sentence stressed its link to the real goals: "there is basic agreement… that this American economy is going to operate better in an atmosphere of price stability" (testimony of July 22, 1980, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1980b, p. 124).

employment—on inflation and saw this relationship as a key economic basis for price stability. His reasoning behind this long-run relationship will be discussed in detail later.

By the 1990s, monetary frictions had come to have a minimal role in the official rationale for price stability.[26] For example, Greenspan (1997c) stated: "Our goal has never been to contain inflation as an end in itself… If inflation had no effect on economic growth, we would be much less concerned about inflationary pressures. But the evidence is compelling that low inflation is necessary to the most favorable performance of the economy… Low inflation is being increasingly viewed as a necessary condition for sustained growth." Similarly, Alice Rivlin (then Vice Chair of the Federal Reserve Board) remarked on April 4, 1997 (Rivlin, 1997a): "Low inflation should not be thought of as an end in itself, but as a means to an end. Accelerating inflation has proved a threat to the sustainability of growth…"

3. The Federal Reserve's economic rationale for price stability: the output costs of inflation

As the comments of Greenspan and Rivlin indicate, the intersection of the real economy and nominal variables—and, in particular, the costs that deviations from price stability imply for the performance of the economy—have had pride of place in the case against inflation articulated by policymakers. As we now show, this has consistently been the case under successive Federal Reserve leaderships since the 1950s. Specifically, in this section, we consider the principal costs of inflation that have been articulated in successive periods by Federal Reserve Chairs and other senior U.S. monetary policy officials. In contrast to the traditional monetary frictions that are prevalent in theoretical analyses of the costs of steady-state inflation—frictions that, as shown above, have been mentioned or alluded to, but not heavily stressed, by senior Federal Reserve officials—real costs of inflation have been repeatedly and prominently articulated by successive officials. We show that the outlines that they have given of the costs of inflation have relayed judgments that inflation has an adverse impact on the distribution of income (Section 3.1), on the execution of economic-stabilization policy (Section 3.2), and on the long-run behavior of potential output, its components, and its growth rate (Section 3.3). We further explore policymakers' views on the potential output/inflation link by concluding this section with an examination of specific transmission channels that Federal Reserve officials stressed over time (Section 3.4).

[26] In economic research, too, Svensson (2003, p. 462) argued that because "most money pays some interest these days," the justification for inflation targeting had to, and did, overwhelmingly rest on grounds other than the presence of monetary frictions. In Woodford's (2003) study of monetary policy, most of the analysis takes place under the assumption that the amount of noninterest-bearing money outstanding is negligible.

3.1. Real distributional costs of inflation

A cost of inflation that has been expounded by successive Federal Reserve Chairs has been the adverse effect on the distribution of income, including harm to low/fixed income earners. For example, Martin (1953, p. 6) observed: "Inflation is a sneak thief. It seems to be putting money into our pockets when in fact it is robbing the saver, the pensioner, the retired workman, the aged —those least able to defend themselves."[27] Martin's successor Arthur Burns (Federal Reserve Chair, 1970–1978) likewise stated in 1974: "Because of its capricious effects on the income and wealth of a nation's families and businesses, inflation inevitably causes disillusionment and discontent. It robs millions of citizens who… have set aside funds for the education of their children or their own retirement. It hits many of the poor and elderly especially hard."[28]

Paul Volcker, too, mentioned inflation's distributional costs. Volcker (1979, p. 2) stated: "the impact of inflation is uneven. Those on fixed incomes suffer." He likewise noted in 1980, "the poorest people in the economy are hurt by inflation," and: "Inflation places tremendous pressures on the budgets of many households."[29] Volcker, however, also cast this as one element of numerous economic costs imposed by entrenched inflation: "Beginning in the mid-1960s, inflation increasingly became a way of life, and in the process distorted economic incentives, sapped our productive energies, and caused arbitrary and capricious transfers of income and wealth."[30]

As Volcker's comments implied, inflation tended to be seen as having multiple adverse repercussions for the behavior of the real economy beyond its effect on straining household budgets. These costs, in fact, have been stressed by multiple Federal Reserve Chairs: a variance cost, implying that stabilization policy is impeded; and a level or growth-rate cost, manifested in lower potential output.[31] We discuss these successively in the next two subsections.

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[27] Similarly, some years later, Federal Reserve Board Vice Chairman Balderston (1957, p. 8) stated: "Inflation causes an unfair redistribution of wealth and disrupts the social and political fabric." Later still in the Martin era, President John F. Kennedy stated that inflation is "[a]lways a cruel tax upon the weak" (in Joint Economic Committee, U.S. Congress, 1961, p. 305).

[28] Burns (1974a, p. 7). Also in Burns (1978, p. 164).

[29] The quotations are respectively from Volcker's testimony of July 24, 1980, in Committee on Ways and Means, U.S. House of Representatives (1980, p. 395), and of November 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980d, p. 9). In addition, Volcker (1983c) remarked on "the myriad inequities that it [inflation] creates."

[30] Submitted testimony of March 2, 1982 (Volcker, 1982, p. 3).

[31] The distributional costs also continued to be stressed in discussions of inflation by the Federal Reserve leadership. For example, FOMC Vice Chair William J. McDonough (1997, p. 3) stated: "inflation also tends to fall particularly hard on the less fortunate in society, often the last to get employment and the first to lose it. These people do not possess the economic clout to keep their income streams steady, or even buy necessities." More recently, see, for

3.2. Disruption to economic stabilization

Federal Reserve Chairs have often stressed price stability as a condition needed to deliver full employment of the economy on a sustained basis—and so preventing economic advance from being interrupted more often than necessary by economic downturns. It has consistently been the case over the years that leading U.S. monetary policy officials have advanced the argument that inflation, once it emerges, will eventually have to be dealt with and that, when that occurs, tightening of aggregate demand will be part of the process of dealing with inflation.[32] That being the case, inflation will eventually be followed by a period of slow growth in economic activity and of elevated rates of unemployment, and the more that inflation is allowed to rise, the greater the subsequent correction.

Along these lines, Martin (1957, p. 7) argued: "If inflation is allowed to pursue its course, it feeds upon itself in such a way that, when the inevitable correction finally comes, unemployment will be that much worse." Martin's conclusion was: "Price stability is essential to sustainable growth."[33] Martin (1961, p. 8) correspondingly stated: "If we permit prices to rise rapidly, we will not long sustain high levels of employment…" This perspective on inflation was also given by a senior Federal Reserve Board official, Winfield W. Riefler (assistant to the Chairman): in a 1959 public submission, he stated that inflation "increases instability—high levels of activity cannot be sustained for long when inflation is expected to prevail."[34]

In taking the position just described, Martin felt vindicated by the experience of price stability and economic growth seen during his tenure as Federal Reserve Chair. He believed that this period had provided a new empirical confirmation of his position on price stability: "I think it's quite significant if you stop to think about it that we only broke the back of the American inflation in the period [from] 1957 to 1960. And when we got the wonderful stability in prices

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example, Powell's (2023, p. 3) observation: "high inflation imposes significant hardship, as it erodes purchasing power, especially for those least able to meet the higher costs of essentials like food, housing, and transportation."

[32] As discussed below, this argument dovetails well with the logic underlying the expectations-augmented Phillips curve. But it is not dependent on the use of that version of the Phillips curve and applies to any case in which a rise in inflation tends to squeeze out the real increase in spending provided by any given growth of nominal aggregate demand. It was accordingly a concern in policy circles even before the Phillips-curve literature developed. In particular, Martin (1966, p. 114) recalled that in a conversation with John Maynard Keynes in the mid-1940s Keynes made the observation that the postwar "problem that we're going to face is how to keep inflation from getting ahead of us so that we will not have the inevitable corrections that come while inflation gets ahead of you and you have [greater unemployment than] if you had restrained the inflation at the proper time."

[33] Testimony of August 13, 1957, in Committee on Finance, U.S. Senate (1957, p. 1262). Also quoted in Orphanides and Williams (2013, p. 258).

[34] Riefler (1959, p. 3369).

that we had from 1961 up to the middle of 1965 we had the most dramatic growth I think that this country has experienced in many years. And I question very much whether[,] without the stability of prices[,] you will get permanent, sustainable, worthwhile growth and employment."[35] Figures 3(a)–(c) show the patterns that Martin was describing.

It is also worth underscoring that fixed exchange rates (specifically, the Bretton Woods system) prevailed throughout the Martin era. Therefore, exchange-rate adjustment was not available as a means of achieving overall equilibrium in the U.S. balance of payments. In this environment, major U.S. balance-of-payments deficits emerged by the start of the 1960s. In response, policymakers cited price stability as one of the conditions necessary to attain balance-of-payments equilibrium. For example, Martin (1961, p. 8) contended: "If we permit prices to rise rapidly, we will not long sustain high levels of employment nor high rates of growth[,] and we will not be able to establish equilibrium in our balance of payments."[36] Similarly, in an economic message of February 2, 1961, President John F. Kennedy stated that "inflation is now the certain road to a balance-of-payments crisis" (in Joint Economic Committee, U.S. Congress, 1961, p. 305). In the era of largely pegged exchange rates of the 1950s and 1960s, therefore, U.S. policymakers saw inflation as liable to generate external imbalances in addition to domestic economic instability.

The advent of greater exchange-rate flexibility under Martin's successors meant that the Federal Reserve Chairs over most of the 1970s, Arthur Burns and G. William Miller, did not highlight balance-of-payments deficits as a cost of inflation. However, with regard to the consequences for domestic economic activity of inflation, they echoed the sentiments that Martin had expounded. For example, Arthur Burns stated: "Greater price stability is a key requisite to the achievement of sustainable economic growth and lower unemployment."[37] Later still, Paul Volcker, who became Chair in 1979, affirmed that testimony that "there is basic agreement… that this American economy is going to operate better in an atmosphere of price stability."[38] Subsequently, Volcker (1985b, p. 6) stated that price stability was the "prerequisite… for sustained and balanced growth."

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[35] Martin (1966, p. 114).

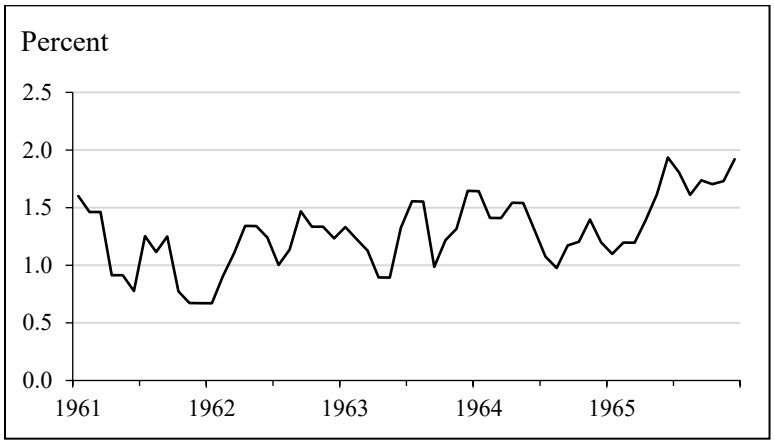
[36] Later in the decade, FOMC Vice Chair Alfred Hayes (1968, p. 90) remarked: "Besides sowing the seeds of future recession and producing a multitude of domestic inequities, the current inflation is doing untold damage to the United States balance of payments by sucking in imports at a very rapid pace and by making United States exports less and less competitive in world markets."

[37] Burns (1977a, p. 7). Also in Burns (1978, p. 472).

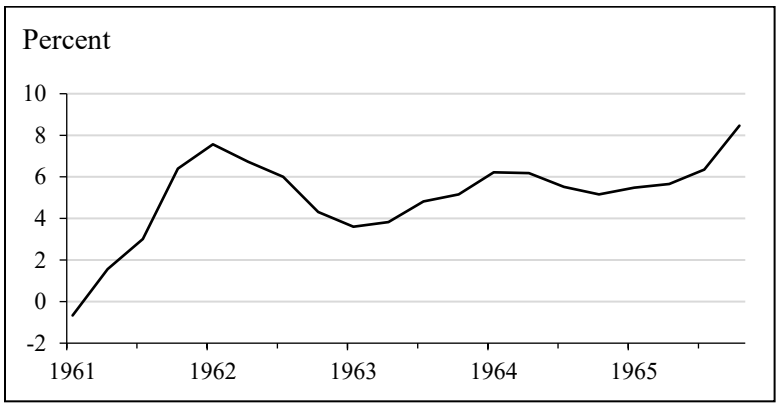
[38] Testimony of July 22, 1980, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1980b, p. 124). Earlier, on October 17, 1979, Volcker testified that inflation "undermine[s] our ability to deal with… cyclical problems" (Joint Economic Committee, U.S. Congress, 1980a, p. 15).

Figure 3. Economic outcomes, 1961–1965.

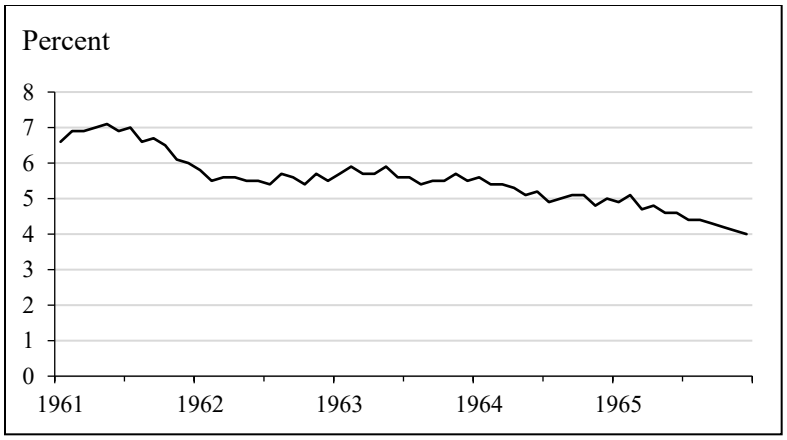
(a) CPI inflation (twelve-month percent change), January 1961 to December 1965.



(b) Real GDP growth (four-quarter percent change), 1961:Q1–1965:Q4.



(c) Unemployment rate (twelve-month percent), January 1961 to December 1965.



Source: FRED (Federal Reserve Bank of St. Louis).

The long-run-vertical expectations-augmented Phillips curve way of looking at inflation was accepted at the policymaking level during Volcker's tenure.[39] Consequently, Volcker's articulation of the argument that inflation hindered the success of stabilization policy was more closely tied to this modern view of the Phillips curve, with its focus on rising inflation expectations as a development worsening both inflation and unemployment. For example, he suggested that the unemployment rate in the vicinity of 8 percent (its rate in the aftermath of the 1980 recession) should be considered a "residual effect of what we have been doing in past years." Volcker suggested that unemployment would not have reached this high level if the United States had not allowed inflation to reach the levels that it had attained. Correspondingly, he stressed the need for policies that permitted a situation in which unemployment could decline alongside price stability (or in conditions in which disinflation continued to proceed).[40] Along similar lines, Volcker remarked in this period: "The insidious pattern of rising rates of inflation *and* unemployment in succeeding cycles needs to be broken."[41] He testified that in the presence of inflation and recession, "stimulative policies…, far from assuring more growth over time, by aggravating the inflationary process and psychology, they would threaten more instability and unemployment."[42]

The same sentiment about the link between price stability and the execution of stabilization policy underlay policymaker statements in later decades. For example, in a Congressional hearing on March 20, 1997, Alan Greenspan noted, "what we tend to focus on is to make sure that the inflation rate stays down… [as] it is our judgment that if we allow that to get away, we will at the end of the day find that we have set in motion a set of forces which will bring the

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[39] This was true of the Greenspan period, too—a situation reflected in Romer and Romer's (2002) treatment of the combined Volcker-Greenspan period as governed by "the modern consensus." Although the emphasis in the present paper is on policymakers' perceptions of *long-run* connections between inflation and other variables, it should be stressed that this consensus also implied an acceptance of a short-run inflation/unemployment (inverse) relationship and associated short-run tradeoff. For example, Greenspan (1987b, p. 4) noted resource pressures as an influence on inflation, while Greenspan (1987b, pp. 1–2) observed that "the art of central banking is to balance the conflicting objectives facing the policymaker." See also his written submission, included in his July 1987 nomination materials, that the Volcker disinflationary moves necessarily entailed "a painful short-run economic fallout" (in Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1987, p. 64).

[40] Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 114).

[41] From Volcker's written testimony of July 23, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980c, p. 24). See also his spoken remarks at the same hearing (p. 12) as well as related remarks given by Volcker before another Congressional committee two days later (Committee on Ways and Means, U.S. House of Representatives, 1980, p. 326).

[42] From Volcker's testimony of February 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980a, p. 3). Similarly, a year later Volcker observed: "Attempts to stimulate the economy without dealing with inflation are bound, in the end, to be self-defeating." (Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1981, p. 112.)

long-sustained stable recovery to an end."[43]

A specific aspect of this argument figured prominently in the case for inflation targeting made in economic research in the 1990s (see, for example, Bernanke and Mishkin, 1997, pp. 104–107). This was the notion that a credible inflation objective makes it more possible for the central bank to ease in periods of economic weakening, without its actions being misconstrued as implying a desire for higher inflation. In fact, Volcker (1985c, pp. 15–16) had explicitly endorsed this notion and suggested that it was beginning to characterize U.S. policymaking: "There was, for instance, no inconsistency in my mind between a continuing priority concern about inflation and our recent decision to, in the jargon, 'ease money' by lowering the discount rate… The sensitivity of some to any action that could be interpreted as inflationary is an understandable, if mistaken, heritage of the absence of effective consistent governmental policies to deal with inflation over years. One reward of a record of greater stability—and a credible commitment to maintain that stability—will in fact be greater operational flexibility for the monetary authorities."

Under Chair Bernanke and subsequently, this particular line of reasoning would appear in the consensus statement's indication that keeping "inflation expectations firmly anchored" has the effect of "enhancing the Committee's ability to promote maximum employment in the face of significant economic disturbances" (Federal Open Market Committee, 2012).

3.3. Adverse implications of inflation for long-run real economic performance

Beyond their discussions of inflation as a factor that could impede sustained economic expansion, leading Federal Reserve policymakers stressed adverse influences of inflation on the *longer-run path of real economic activity*. Particularly in the period spanning the Martin through the Greenspan eras, the Federal Reserve leadership postulated the empirical relevance of a negative long-run connection between inflation and potential output—through which inflation would exert an adverse influence on potential output, its growth rate, and the components of potential output, including productivity.[44]

The notion that *extreme* inflations (of high double-digit rates or beyond) generate permanent and

[43] In Joint Economic Committee, U.S. Congress (1997, p. 38). See also the other 1997 remarks by Greenspan and Federal Reserve Board Vice Chair Rivlin, already quoted.

[44] As will be indicated below, policymakers explicitly indicated a negative long-run influence of inflation on employment. Of course, some of the references made by officials to "employment" may have been intended to encompass a broader set of measures of labor market conditions than simply the aggregate of workers employed.

adverse effects on the real economy is not controversial and had longstanding acceptance at the Federal Reserve, largely on the basis of inflation experiences outside the United States. In light of such experiences, the already-mentioned senior Federal Reserve official E.A. Goldenweiser (1941, p. 292) noted that extreme inflations produce "at the worst, a complete wiping out of all savings and the ultimate collapse of the economy."

It is more controversial, however, to suggest that more moderate inflation rates have powerful negative effects on real output. McCallum (1990, p. 972), for example, notes that superneutrality (the invariance to inflation of the long-run real values of variables other than real money balances) tends to hold in standard monetary general-equilibrium models. Nevertheless, Federal Reserve leaderships have argued, in public interventions over several decades, that as an empirical matter there are appreciable negative influences of inflation on the long-run value of output in the United States even in the case of inflation rates at or below 10 percent. For example, upon taking office, Chairman Martin (1951a, p. 1) stated: "Unless inflation is controlled, it could prove to be an even more serious threat to the vitality of our country than the more spectacular aggressions of enemies outside our borders." The Federal Reserve explicitly expressed this threat as being to economic growth: for example, Riefler's (1959) submission was titled "Inflation: Enemy of Growth," while Martin (1952, p. 4) reaffirmed, "Inflation can be even more serious to the growth and development of our country than an enemy from without our borders." In a similar vein, during the mid-1970s Arthur Burns remarked that "inflation has now reached a stage where it is endangering our economic and political future."[45]

The notion of inflation, at the rates that the United States experienced in the 1970s, as a source of negative long-run effects on real economic activity was stressed repeatedly by Paul Volcker, both in the course of the main period of disinflationary policy in 1979–1982 and during the subsequent consolidation of the country's disinflation.

In making this case, Volcker emphasized the importance of real economic performance as a national goal and monetary policy objective. As indicated above, Volcker did see price stability as a desirable goal in itself. Nevertheless, he suggested that real variables figured more highly in welfare. Testifying in February 1981, Volcker observed that "in an ultimate sense, the object of economic policy is to achieve high conditions of employment, high conditions of growth, rising standards of living for Americans."[46] He consequently remarked with regard to the employment

[45] Burns (1974b, p. 1). Also in Burns (1978, pp. 181–182).
[46] In Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981, p. 117).

goal: "I give it the highest priority." But Volcker emphasized that price stability was a necessary condition for high employment: "We have to deal, in the present timeframe, with the inflationary problem or, in my judgment, we will never succeed in reaching the employment goal."[47]

In addition to reducing long-run employment, inflation, according to Volcker, reduced potential output further by pulling down the level and growth rate of productivity. He stated in testimony given on July 24, 1980: "We don't think the economy is going to work satisfactorily over time, and we're not going to get the growth and productivity and sustained recovery we want, if we don't break this pattern of successively higher levels of inflation in every cyclical movement of the American economy."[48] He further testified on September 10, 1980: "I am convinced that the stability and vigor of our economy will not be restored over time unless the ominous cycle of rising levels of inflation in successive periods of expansion can be brought to a halt."[49]

Volcker was articulating these views at a time when economic research—most prominently that of Martin Feldstein (for example, Feldstein and Summers, 1979)—was pointing to adverse influences of inflation on saving and investment, operating in part via the U.S. tax system. The Volcker-era Federal Reserve likely was fortified in its view of the costs of inflation by this research. Nevertheless, the emphasis that Volcker placed on a linkage between inflation and productivity *growth* likely rested on arguments beyond those advanced by Feldstein. Indeed, Feldstein (1978, pp. 190–191) had noted that impediments to saving of the kind emphasized in his research primarily implied a lower long-run output level, rather than a reduced growth rate.

Volcker's own position on these matters implied a belief that price stability was a necessary condition for securing satisfactory all-round economic performance. He summed up his perspective on February 26, 1981: "our own approach and policies are designed to recognize what I think is a very hard fact of life: That if we try to ignore the inflation side of the equation,

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[47] In Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981, p. 118).
[48] In Committee on the Budget, U.S. Senate (1980, p. 231). In his nomination materials in July 1979, he wrote (see Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1979, p. 16): "I believe that ultimately the only sound foundation for continuing growth and prosperity of the American economy is much greater price stability." In a television interview in October 1979, he stated (ABC, 1979, p. 4), "we want to create conditions in this country where we can grow again, and I think we can. We have had a decade of moving in the wrong direction."
[49] In Committee on the Budget, U.S. House of Representatives (1980, p. 156). Volcker made similar statements in later rounds of Congressional hearings, including on February 5, 1981 (Joint Economic Committee, U.S. Congress, 1981, p. 19), when he stated that "[the country would not] lay a solid groundwork for recovery and sustained prosperity without dealing with this inflation problem" and on February 26, 1981 (Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1981a, p. 8), when he remarked that "the goals of employment, productivity, and growth, which must be the basic objectives of policy—will not be dealt with successfully unless we are successful in dealing with this inflation problem."

those fundamental and needed objectives for employment and growth will not, in fact, be reached. That is what has happened in the last few years."[50]

The 1979–1982 main phase of disinflationary policy and its aftermath therefore saw the Volcker Federal Reserve give a mixed account of the long-run effects of monetary policy, rather than one based on full long-run neutrality of the real economy with regard to nominal variables. On the one hand, as already indicated, in arguing for disinflation Volcker stressed natural-rate ideas—and so he highlighted notions closely connected to that of long-run monetary neutrality—by indicating that monetary restriction would have permanently lower inflation while only temporarily raising the unemployment rate. But, on the other hand, he also strongly emphasized key areas of violations of long-run superneutrality of money, by suggesting that deviations from price stability affected potential output, including by worsening the long-run level and growth rate of the U.S. economy.[51] As Volcker noted in summing up his first term as Chair, "I have indicated many times that if we did not face up to the inflation problem, ultimately we would have had a worse problem in the economy."[52]

The centrality of inflation in the diagnosis of poor real economic performance was evident in Volcker's references during 1981 to "the inflation problem that lies at the heart of so much of our economic malaise" and to "the inflationary situation which lies behind so much of our economic difficulties."[53] In the peak inflation year, 1980, he noted that "inflation has been the

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[50] In Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 112).

[51] In this context, the *cyclical* and *longer-run* patterns of productivity growth need to be strongly distinguished from one another, owing to the differences in the linkages between monetary policy and the two types of behavior. At least through the mid-1980s, U.S. business cycles were noted as tending to feature *procyclical* productivity behavior—that is, productivity growth rose above its longer-term rate in economic expansions and was slower, or negative, during recessions (see, for example, Wilson and Eckstein, 1964, and Bernanke and Powell, 1986). This pattern was straightforwardly interpretable as being, in part, a manifestation of the short-run nonneutrality of monetary policy. Under this interpretation, the level and growth rate of productivity were among the output-related variables boosted in the short run by stabilization-policy actions that stimulated nominal aggregate demand. This interpretation was also consistent with the notion—implied by the long-run neutrality of monetary policy actions for real variables, as well—that the effects of monetary policy on productivity wore off over time. That notion was embedded in Chairman Volcker's remark (see ABC, 1979, p. 3) that monetary policy (by implication, monetary expansion) could not address weakness in U.S. productivity: "It is nothing that is directly susceptible to monetary policy."

As we document in the text, however, beyond this standard view (which pertained to the *aggregate-demand*-related effects of monetary policy), Volcker articulated a further position—according to which productivity (its level and growth rate alike) and monetary policy *were* related in the long run, via *aggregate-supply* mechanisms. This position implied that, over time horizons beyond the business-cycle frequency, monetary policy did affect productivity growth, in a direction that was of the opposite sign of its short-run influence, through adverse implications of inflation on potential output growth.

[52] Testimony of July 20, 1983, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1983, p. 215).

[53] The first quotation is from Volcker (1981, p. 3). The second quotation is from Volcker's testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 8). In the

single most disruptive element on the economic scene."[54] The same judgment applied to the 1970s: "the lesson of the last decade very clearly [is] that the inflationary problems go hand in hand with these other problems of rising unemployment, decline in productivity, and declining growth."[55]

Volcker's diagnosis of an inflation/economic-growth linkage was made in the wake of the downturn in productivity growth in the 1970s (see Figure 4). But the perceived linkage was also stressed in the Greenspan era, as detailed shortly. Greenspan's emphasis on this postulated relationship, already an important part of his statements since 1987, would be bolstered by the distinct upturn in U.S. productivity growth that appeared, alongside continuing low inflation, in the mid-1990s (an upturn also shown in Figure 4).

With regard to Volcker specifically, the linkage between low productivity growth and high inflation was prominent in his statements in his first term in office, but it receded in prominence in his discussions of inflation during his second term as Chair. After a revival in 1983–1984 (the first couple of years of the United States' post-disinflation economic expansion), aggregate productivity growth fell back to values closer to the slow growth rates of the 1970s, even though the lower-inflation environment established since 1982 continued and was consolidated upon. By the end of his tenure, Volcker was taking slow productivity growth to be a continuing feature of the U.S. economy (one present since the early 1970s).[56]

In contrast, Alan Greenspan's tenure saw renewed emphasis by the Federal Reserve leadership on the idea that deviations from price stability implied lower longer-term economic growth, including lower productivity growth. For example, at the start of 1997, Greenspan stated:"It is becoming increasingly evident that a key ingredient in achieving the highest possible levels of productivity, real incomes, and living standards over the long run is maintenance of price stability… Clearly price stability should and will remain the central goal of our activities."[57] Conversely, he suggested that a take-off of inflation would ultimately curtail both growth in

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same hearing, Volcker amplified his message by observing (p. 129): "We have an enormous inflationary problem that is, as I have tried to emphasize here, at the very root of many of our economic difficulties."

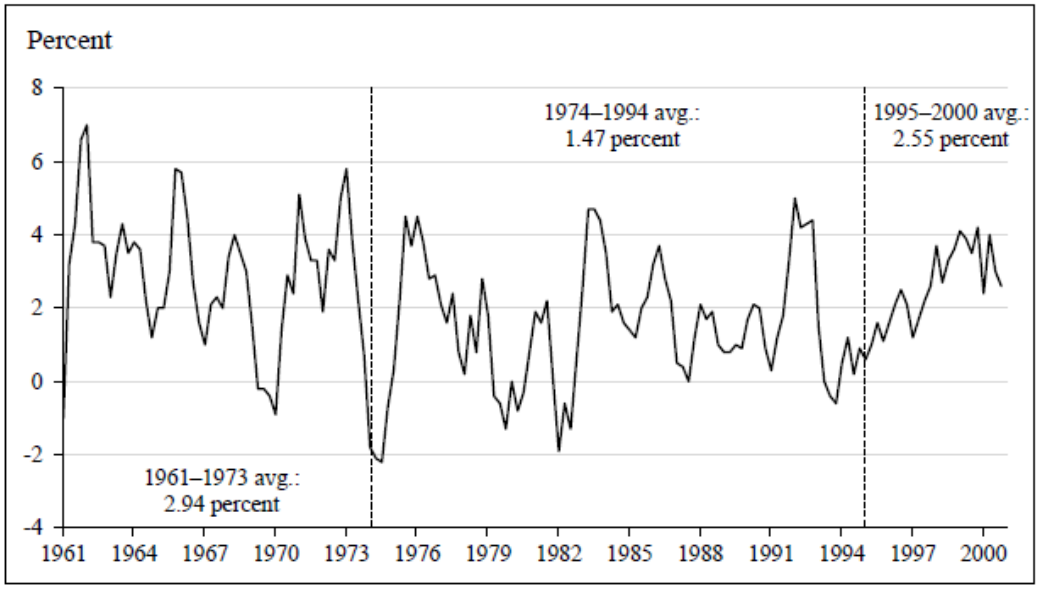
[54] Testimony of November 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980d, p. 9).

[55] Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 8). Volcker saw the prior decade's pattern as part of a historical regularity, observing in Volcker (1983c) that "reduced long-run growth … [has] tended to accompany inflation in the past."

[56] See, for example, his remarks of July 21, 1987, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1987, pp. 8, 44).

[57] Greenspan (1997a).

Figure 4. U.S. productivity growth (four-quarter percent change), 1961:Q1–2000:Q4.



Source: Nonfarm business sector output per hour in FRED (Federal Reserve Bank of St. Louis).

employment and "our fundamental goal of maximum sustainable growth."[58]

Judgments that the achievement of ongoing price stability not only set the stage for output to proceed along its potential path but also implied that potential output was higher—in both level and growth terms—than otherwise permeated Greenspan's statements from the beginning of his tenure in 1987. For example, in a speech given in his first month in office, he stated: "The goals of monetary policy, of course, are to promote sustainable economic growth and minimal unemployment[,] and this presupposes appropriate price stability."[59] Near the end of 1987, he reaffirmed: "The mandate for economic policy in the United States and elsewhere should be to maintain the maximum growth in real income and output that is feasible over the long run. A necessary condition for accomplishing that important objective is a stable price level."[60]

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[58] In testimony of March 20, 1997, in Joint Economic Committee (1997, p. 24). Greenspan noted at the same hearing (Joint Economic Committee, 1997, p. 40): "[Price stability] is a goal… we direct our actions toward because we need that to sustain long-term economic growth, which is our primary objective."

[59] Greenspan (1987a, p. 3). Greenspan had, correspondingly, earlier observed (in his confirmation hearing of July 21, 1987): "what the Fed is trying to do is to set an environment in which steady long-term maximum economic growth is feasible in our economy… That is the primary goal… [and] allow[ing] the inflation genie to get out of the bottle… will clearly undercut that goal." (In Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1987, p. 56.)

[60] Greenspan (1987c, p. 8). Similarly, in describing U.S. monetary policy as conducted in the first six months of his tenure, Greenspan (1988, p. 7) testified: "The Committee continued to focus on maintaining the economic expansion and on progress toward price stability, which was seen as a necessary condition for long-term sustained economic growth."

A decade on, Greenspan (1997c) outlined his position on the structural linkage between price stability and productivity growth in terms of price stability reducing the costs assessed to be associated with business projects: "In my view, improving productivity and standards of living necessitates increasing incentives to risk-taking. To encourage people to take prudent risks, the potential rewards must be perceived to exceed the possible losses. Maintaining low inflation rates reduces the levels of future uncertainties and, hence, increases the scope of investment opportunities. It is here that the Federal Reserve can most contribute to long-term growth."[61]

Greenspan's other statements indicated that part of the channel linking low inflation and higher investment and economic growth was through real interest rates. He judged that high inflation, once entrenched, was likely to be associated with not only higher nominal interest rates but also higher real interest rates (as might occur if inflation raised uncertainty). In 1992, Greenspan expressed the wish for economic policy "to create the type of noninflationary environment that lowers the cost of capital in real terms, and maximizes the capability of getting significant long-term growth out of the system."[62]

Notwithstanding such reasoning, a stress on a strong inflation/growth linkage was against the grain of the theoretical position prevailing in much economic analysis that superneutrality prevailed in the long run. Empirical research in the 1950s and 1960s had generally been supportive of superneutrality on this point and had suggested that there was not a systematic relationship link between longer-run growth and inflation for low and moderate values of inflation and deflation (see, for example, Eckstein, 1958, pp. 361–362, 373; and Wilson, 1961). Using later data—a panel of 118 countries covering 1959–1992, Judson and Orphanides (1999), in published research derived from their work as Federal Reserve staff analysis during the Greenspan years, found that inflation did adversely influence real aggregate income growth but that inflation had to reach double digits before such an influence became clear.

And, even in the Greenspan years, Federal Reserve policymakers stressed that the contribution

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[61] In a similar vein, when serving on the Federal Reserve Board under Greenspan, Bernanke (2003) stated: "Price stability promotes economic growth and welfare by increasing the efficiency of the market mechanism, facilitating long-term planning, and minimizing distortions created by the interaction of inflation and the tax code, accounting rules, financial contracts, and the like."

[62] Testimony of March 3, 1992, in Joint Economic Committee, U.S. Congress (1992, p. 127). The following year, in testimony given on October 13, 1993, Greenspan suggested moving to a "lower [value of] the inflation rate—even [in the case of bringing it] under 5 percent—is consistent with higher growth rates in productivity." (See the 2-hour-47-minute point of https://www.c-span.org/video/?51415-1/us-federal-reserve-policy, as well as the record of this portion of the hearing—including some minor transcription errors—in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1994, p. 40.)

that price stability could make to economic growth was an incremental one and that potential output growth was mostly driven by processes separate from considerations related to inflation. For example, Greenspan (1998) suggested that a "new industrial revolution" was underway, and Greenspan's (2000) discussion of the recent productivity upsurge correspondingly focused on real developments—specifically, information technology—while Rivlin (1997b) remarked that "monetary policy cannot do much to determine how high the sustainable growth rate is."

The ambiguity of the empirical evidence and the theoretical presumption in favor of superneutrality probably help explain why, in the post-Greenspan era, key authoritative Federal Reserve documents—such as the consensus statement—have tended not to list higher economic growth as a benefit of price stability (at least *vis-a-vis* moderate inflation rates).

3.4. Channels linking inflation and long-run economic performance

What were the channels that policymakers saw as lying behind these major violations of monetary superneutrality? As indicated below, the precise mechanisms cited as producing adverse implications of inflation for the behavior of real variables differed over time and across different leaderships of the Federal Reserve. But, consistently, they prominently included those working under two broad categories: relative price dispersion and via capital markets.

Relative price dispersion. Across the tenures of multiple Federal Reserve Chairs, part of the Federal Reserve leadership's advocacy of price stability has rested on the fact that different prices (including costs) adjust at different speeds to an ongoing process of inflation and that the resulting disruption to the relative price structure generates distortions to resource allocation. Slower-adjusting prices (for example, nominal wages) do catch up in time to the new inflation rate. But the different adjustment speeds could be a factor making for variations in output.[63]

Successive Federal Reserve policymakers have, however, also perceived this relative-price mechanism of inflation as having an adverse influence on the level and growth rate of potential output, by creating uncertainty and misjudgments about the future constellation of prices.

In this vein, Martin (1960, p. 10) had argued: "Quite aside from its other evils, inflation brings about misapplications of resources that actually reduce the true value of current production." His

[63] Along these lines, Martin (1957, p. 7) suggested: "as costs go up, it becomes increasingly hard to pass those costs along to the customer in the form of price increases, and it becomes increasingly easy to misjudge or miscalculate the market… The cutback in production leads to a cutback in employment."

assistant, Winfield Riefler, had spelled out a process by which inflation "fosters the misallocation of capital" (Riefler, 1959, p. 3369) by connecting the process to relative price dispersion: "individual costs and prices do not move at the same relative rates during a period of inflation… In such a period, therefore, it is much more difficult for management to judge accurately as between the future efficiencies of differing productive techniques than it is in a period of more stable cost relationships."[64]

As Federal Reserve Chair, Arthur Burns similarly postulated the disturbance to relative prices as an adverse influence on firms' decisions: "inflation is totally inimical to a healthy business environment. Having little basis for projecting how inflation will affect their enterprises…, they feel bewildered in attempting to judge their future costs or their future selling prices."[65] Alan Greenspan also endorsed an important channel running from inflation to economic growth via relative-price disruption: "Price stability implies reduced uncertainty in the forecasts of relative prices crucial for investment decisions… For such reasons, price stability can have a substantial positive effect on the prospects for long-run economic growth."[66]

In contrast, Chair Paul Volcker was less prone to talk about relative-price-based channels *explicitly*—instead treating them implicitly, grouped under the heading of "the instability and distortions growing out of inflation" (Volcker, 1981, p. 3), and in making observations such as: "Inflation can create distortions in an economy, resulting in reduced economic efficiency."[67] In common, however, with earlier and later Federal Reserve Chairs, Volcker did frequently stress that inflation acted adversely on the saving-and-investment process—one of his many statements on the subject being his observation that "inflation has many undesirable economic effects… [that] include distortions of the pattern of investment and capital accumulation."[68] It is worth analyzing this capital-market channel, linking inflation to potential output, as a distinct category.

Incentives to save and impairment of capital market functioning. As a factor operating through channels separate from relative price dispersion, Federal Reserve officials have consistently cited inflation as having adverse long-term implications for saving, investment, and their interaction. Riefler (1959, p. 3369) argued that inflation "distorts the saving-investment process." With regard to saving more specifically, Martin (1952, p. 4) argued that inflation "penalizes the thrifty

[64] Riefler (1959, p. 3370).
[65] Burns (1977c, p. 11). Also in Burns (1978, p. 46).
[66] Greenspan (1989, p. 16).
[67] Volcker (1983a). Henry Wallich, a Federal Reserve Board Governor under Burns, Miller, and Volcker, tended to refer to relative-price channels more explicitly, with Wallich (1977, p. 7) noting: "Inflation therefore does affect real variables—the level and distributions of income and wealth, relative prices, investment, growth, and employment."
[68] Volcker (1983c).

and industrious," and Burns (1974a, p. 7) suggested that inflation "robs millions of citizens who… have set aside funds for the education of their children or their own retirement."[69] In the same vein, Greenspan (1989, p. 16) suggested that the growth-enhancing aspects of price stability included the "elimination of the distortionary effects of inflation taxes on asset returns."

Volcker himself also highlighted the deterrence to saving associated with uncertainty about the future inflation rate.[70] But he particularly pointed to the notion that saving and investment would decline jointly in response to inflation, arguing: "Inflation… distorts spending and saving decisions, inhibits productivity-expanding business capital formation, erodes the foundations of the domestic and international financial systems, and in the process saps confidence at home and abroad in our future."[71] Volcker suggested that the best way to boost both saving and investment in the United States was to get rid of inflation (testimony of March 18, 1980, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1980a, p. 43).

In making the case that aggregate saving and investment were exhibiting a joint decline generated by the United States' loss of price stability, Volcker emphasized the damage that U.S. inflation had done to financial markets' and businesses' engagement in longer-term commitments. Volcker observed in 1986: "It takes literally years to give people the confidence to want to invest long-term when they've gone through a violent inflationary period."[72] One facet of this development that Volcker cited was the way in which inflation had disrupted financial intermediaries' lending practices. Longer-term yields in the 1960s proved to be low *vis-a-vis* later years' values of short-term interest rates and inflation—likely implying that inflation was considerably under-forecast (see the Treasury yields shown in Figure 5). This outcome generated changes in loan-making, with Volcker (1981, p. 4) pointing to the fact that insurance companies had ended fixed-rate longer-term lending.[73] Many Volcker statements also

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[69] Also in Burns (1978, p. 164).

[70] For example, Volcker suggested (in testimony given on February 26, 1981: see Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1981a, p. 130) that low or uncertain real return on saving, combined with taxation of the whole nominal interest payment on saving, had given rise to questioning of "what is the use of saving, anyway, under these conditions?"—a mindset that Volcker considered to be one "that is infecting the country [and] that is extremely damaging to growth and productivity."

[71] Testimony of November 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980d, p. 9).

[72] Testimony of February 26, 1986, in Committee on the Budget, U.S. House of Representatives (1986, p. 801).

[73] Volcker's suggestion that inflation had, in practice, reduced longer-maturity private-sector financing in the United States echoed a message that the Federal Reserve leadership had relayed in the late 1950s and early 1960s when there was a perceived threat of a major inflation breakout (even though, in the event, inflation was largely contained in these years). The Federal Reserve Board's Vice Chair warned in this period that "inflation affects adversely both the habit of saving and the allocation of funds to the capital markets" (Balderston, 1959, p. 4) and that inflationary developments "tend to direct a growing proportion of financial saving into shorter-term rather than longer-term uses,

cited the damage that inflation had done to the financial conditions of thrifts, whose housing lending had been fixed-rate.[74] Conversely, with regard to lowering inflation, Volcker (1985a, p. 6) stressed the boost to long-term intermediation that would be generated as private-sector confidence in price stability reemerged: "As borrowing and lending horizons are lengthened, the financial structure should be strengthened, and less 'inflation insurance' will be built into long-term interest rates."

Volcker especially cited the damage done by inflation to the mobilization of funds for businesses' spending on capital equipment. Notably, the U.S. equity market was in a slump starting in the late 1960s (see Figure 6). Volcker suggested: "The performance of the equity markets for a good many years has been another of those symptoms of our unsatisfactory economic performance, and, again, in a broad sense, it certainly seems to be affected by the kind of problems that inflation creates."[75]

Volcker acknowledged, of course, that there was a considerable degree of new long-term borrowing by the U.S. private sector that did proceed in fixed-interest terms in a situation of elevated inflation. Interest rates on these loans had, however, increasingly adjusted by the late 1970s to a high-inflation environment. Inherent in this adjustment was the danger that a subsequent, and unexpectedly rapid, disinflation could greatly increase the real interest cost to the borrower (that is, debt-deflation-type mechanisms would operate). In early 1986, for example, Volcker pointed to the fact that, in the current disinflationary period, the U.S. agricultural sector had heavy loan-repayment obligations against a backdrop of depressed world commodity prices (Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1986, p. 56).

Volcker saw inflation as not only reducing saving but diverting it from conventional longer-term financial instruments into outlets less likely to be associated with the promotion of business capital formation. He suggested that an inflationary environment created speculation.[76] Volcker saw a prominent aspect of speculation as consisting of households deciding to direct their funds toward the purchase of commodities and collectibles. He believed that the diversion of resources of this kind—into "the largely futile search for ways to 'beat' inflation"—was itself productivity-

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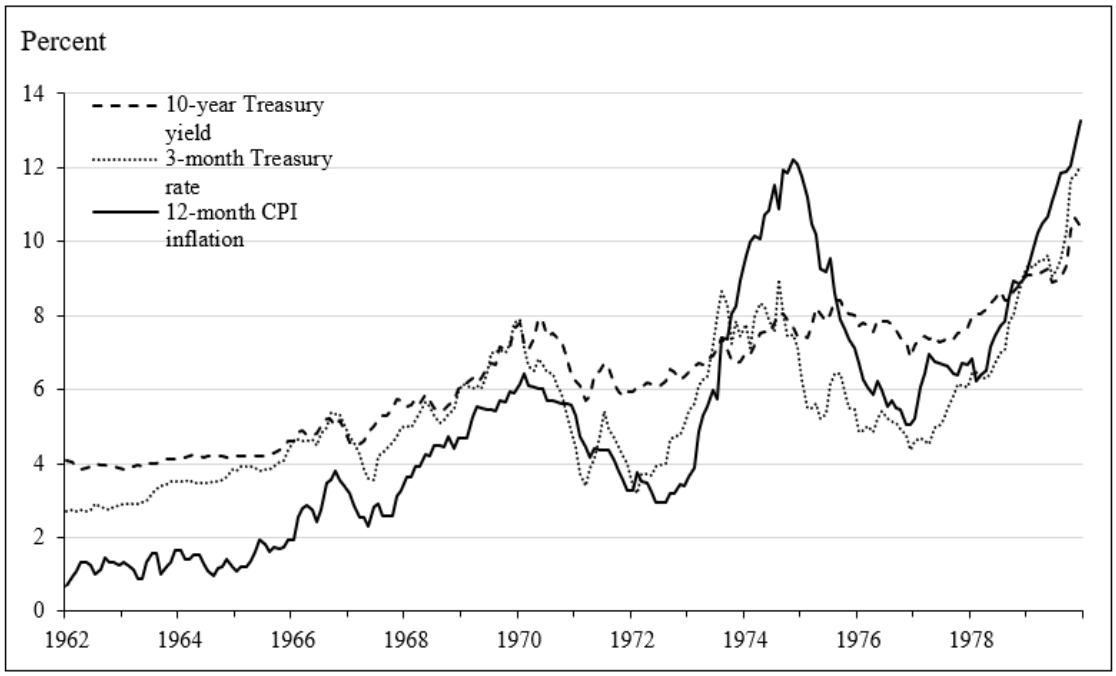
and into existing rather than new equities" (Balderston, 1960, p. 9). As already indicated, other Federal Reserve officials—such as Martin and Riefler—made similar observations.

[74] Testimony of January 7, 1981, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1981a, p. 9).

[75] Testimony of February 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980a, p. 142).

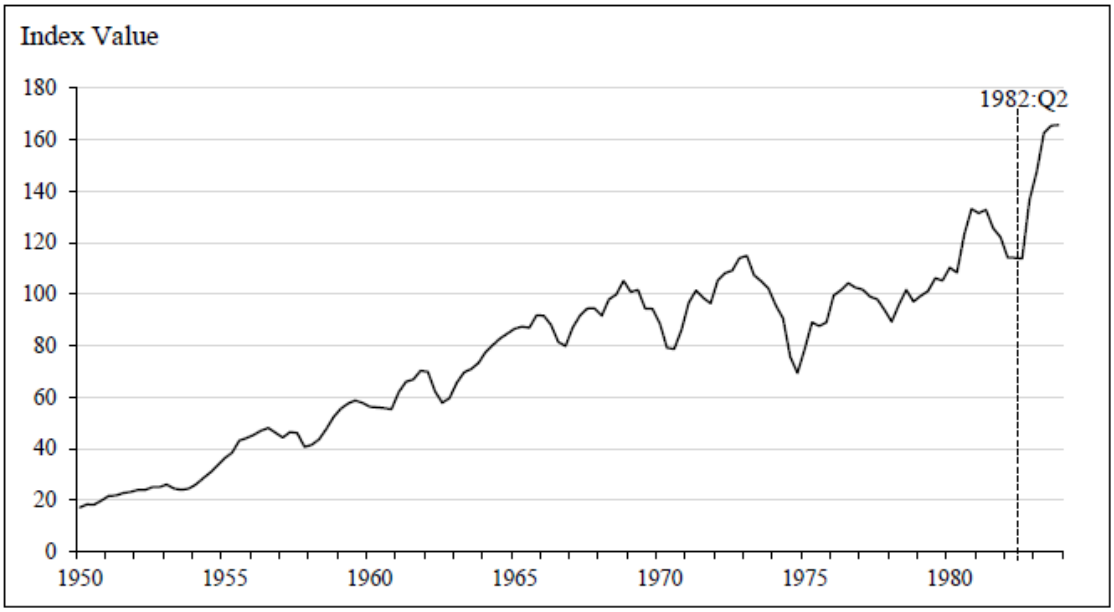
[76] Testimony of May 1, 1980, in Committee on Agriculture, Nutrition and Forestry, U.S. Senate (1980, p. 246).

Figure 5. 10-year Treasury yield, 3-month Treasury rate, and 12-month CPI inflation, 1961:Q1–1979:Q4.



Source: FRED (Federal Reserve Bank of St. Louis).

Figure 6. Stock prices, 1960:Q1–1983:Q4.



Source: Stock price index used in Balke and Gordon (1986, pp. 806–808).

reducing (Volcker, 1985a, p. 6).[77] But he put special stress on the adverse implications of this pattern of behavior for the development of the business sector's capital stock. Purchases of inflation hedges, Volcker argued, were being chosen over investing in U.S. corporations via the equity market. In this connection, he suggested that inflation had both lowered savings and diverted funds from savings instruments into such items as gold, diamonds, Persian rugs, and house extensions.[78] He saw this situation as likely to prevail until price stability was restored: "[If] public policies seem to be consistent with more inflation rather than less… savings will be impaired or directed to inflation hedges…"[79] Relatedly, Volcker (1979, p. 2) stated that hedging against inflation was "frequently built on heavy indebtedness or highly speculative investments." His verdict was also that "there are no reliable havens" against inflation.[80]

Durability of the arguments. The basic channels of relative price dispersion and impairment of capital markets have recurred in Federal Reserve policymakers' accounts of the adverse implications of inflation for real economic activity. In their descriptions of the channels, however, the details of policymakers' sketches of inflation's costs have tended to be tied to the institutions and regularities associated with particular eras. Both Martin and Burns, for example, cited the danger that inflation would lead to the imposition of price controls as a cost of inflation and a reason it caused business uncertainty.[81] As a factor associated with inflation, this danger was essentially removed when the U.S. government dismantled the remaining incomes-policy apparatus in early 1981.

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[77] Similarly, in making the case for price stability during the Greenspan era, the FOMC's Vice Chair William J. McDonough (1997, p. 2) remarked that inflation generates "distortions that create perverse incentives to engage in nonproductive activities."

[78] Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 129). The notion that inflation promoted speculation at the expense of capital formation was a longstanding one, and Riefler (1959, p. 3369) had cited the judgment that inflation "encourages over-speculation" as one of the grounds for seeking price stability. Riefler saw evidence of speculative behavior of the kind described in businesses' behavior in response to the mild U.S. inflation of the 1950s. But the behavior of households in the Great Inflation period presented a clearer-cut example of this phenomenon. In line with Volcker's later depiction of the situation, Porter (1979) described: "[S]tock prices across the board stumbled into a plunge so prolonged… that Wall Street earned the unenviable reputation of being a disaster area. Since then, tens of billions of dollars have moved in mounting volume into the offbeat, far-out investment-speculative areas. Among them: Coins which aren't for spending, books which aren't for reading, paintings which aren't for viewing, stamps which aren't for mailing… antiques… rugs… baseball cards…"

[79] Testimony of January 7, 1981, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1981a, p. 9).

[80] As indicated below, Volcker was opposed to creating specifically inflation-proofed instruments.

[81] Martin (1952, p. 7) suggested that inflation "produces disorders that result in controls and regimentation." This description was likely intended to cover both price controls and rationing. Burns (1977c, p. 11; also in Burns, 1978, p. 46) suggested that a fear of reimposition of price controls (lifted in 1974) was a feature of the 1970s inflationary environment.

Volcker's emphasis on the saving-investment linkage in describing inflation's costs also occurred against a long background of the United States having net capital outflows, and so he did not anticipate the period from the early 1980s when large capital inflows weakened the link between saving and investment.[82] That said, his position that disinflation might boost the condition of U.S. capital markets was largely borne out: the end of the Great Inflation was followed by a lasting stock market revival (again, see Figure 6 above).

Adaptation to inflationary conditions. Most of the linkages between inflation and longer-term real economic activity that were postulated by Federal Reserve officials and were described above rested on the existence of arrangements in the economy that did not adapt completely to ongoing inflation. Conversely, many of the permanent real costs of inflation that policymakers cited were ones that, in theory, could be avoided in an economy whose institutions adapted to a significantly positive steady-state inflation rate—for example, through indexation schemes. Paul Volcker, however, addressed this possibility and rejected the notion that, as a practical matter, the United States could reach a state of being able to protect the real economy from the harm that would otherwise be generated by inflation. Volcker argued against ratifying existing inflation through monetary policy in the hope of acclimatizing the economy to high inflation: that "offers no solution."[83] Rather, he suggested that the postulate that the U.S. economy could become immune to an ongoing moderate rate of inflation was "pure delusion." He indicated the basis for this conclusion: "Experience here and abroad indicates unambiguously that we have not been successful in living with inflation—that in an economy like ours, persistent inflation, stagnation, and reduced productivity are inexorably related."[84]

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[82] Analyses of U.S. productivity growth in the postwar period tend to stress demographic and technological developments rather than inflation, including in the analysis of the post-1973 growth slowdown (see, for example, Fernald, 2016). Consequently, it might also be argued that Volcker overestimated the role that high inflation had played in the productivity growth slowdown. As already indicated, after the productivity growth slowdown continued into the 1980s, Volcker did not stress the linkage as heavily as he had previously. But he reaffirmed his view that the slowdown had been partly due to the Great Inflation: "Experience of the past decade has shown that sustained economic growth can best be achieved in an environment of reasonably stable prices; the slowing of real growth in the decade of the 1970s coincided, not coincidentally in my view, with a marked acceleration of inflation." (Written testimony after the hearing of February 26, 1985, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1985, p. 138.) He had earlier indicated that inflation was only one factor in the slowdown (testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1981a, p. 128), and in 1985 he reaffirmed his position that "an environment of [price] stability, while necessary to sustained growth, is not sufficient to assure that the rate of growth and productivity will return to the earlier, more rapid trend." (Written submission following the hearing of February 26, 1985, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives, 1985, p. 138.) As indicated above, the notion of an inverse inflation/productivity-growth relationship was subsequently reaffirmed by Alan Greenspan.

[83] Testimony of July 24, 1980, in Committee on Ways and Means, U.S. House of Representatives (1980, p. 326).

[84] Testimony of January 7, 1981, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1981a, p. 15).

Indeed, Volcker suggested that an attempt to live with a high inflation rate would lead to widespread dissatisfaction when it turned out that the costs in terms of poor longer-run real performance continued to be present. He suggested that this process, in turn, would create pressure for the United States to tolerate a still-higher inflation rate, rather than a lower one: "left alone [i.e., if accommodated], inflation will get worse, not better."[85] Consequently, he viewed a situation of policymaker acquiescence to high inflation as bound to dial up monetary policy settings, and the economy, toward a still-higher inflation rate: "Expectations of inflations would roar ahead, the whole process of inflation would quickly accelerate, and I fear sooner rather than later the growth and investment that is sought would crumble away, leaving us with a more difficult situation."[86] With regard to monetary policy, the impairments to economic performance that inflation generated underlay Volcker's (1985b, p. 5) conviction that there was a "fundamental priority for [price] stability in a well-functioning economy."

The notions that the U.S. economy cannot adapt well to high inflation and that above-price-stability rates encourage expectations of still-higher rates were essentially endorsed by Chair Ben Bernanke in the period approaching the FOMC's choice of a 2 percent inflation objective (see, for example, Jefferson, 2023, for a discussion).

During his period as head of the Federal Reserve, Volcker was particularly skeptical about the merits of indexation as a means of insulating the real economy from inflation. Volcker regarded the "mentality" of indexation as itself unhealthy.[87] He was unsympathetic to proposals to institute indexation as a practice in either the private or public sectors, observing: "I am generally opposed to indexing of all kinds."[88] Part of his objection rested on his belief that indexation was perceived as an alternative to price stability: "the more we try indexing, the more the temptation to try to live with inflation."[89] Indeed, Volcker viewed indexation as making disinflation both less feasible and more costly, as it would both undermine a community consensus to lower

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[85] Testimony of January 7, 1981, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1981a, p. 15). See also page 9 of the same testimony. He reaffirmed in Volcker (1985c, p. 13): "In the end, it cures nothing and seems to speed up the process."

[86] Testimony of November 19, 1980, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1980d, p. 11). Similarly, Volcker had earlier observed in testimony of February 1, 1980 (in Joint Economic Committee, U.S. Congress, 1980b, p. 57) when asked about troubled sectors of the economy: "there is no escape from the problem, as I see it, by accepting inflation… If we don't deal with inflation, these problems will intensify over time—they won't ease."

[87] Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 126).

[88] Testimony of July 21, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981b, p. 246).

[89] Volcker (1983c).

inflation and introduce dynamics into the inflation process that would make it harder to bring inflation down.[90] Volcker (1983c) underlined his conviction that, even in conditions of steady-state high inflation, indexation would not achieve its intended goal of making real outcomes as high as they would be under price stability: "in a practical sense it is hard to imagine a world in which indexation made it possible to live with inflation." "I don't like the idea of indexing things," he testified in July 1985. "… You [only] cure the inflation problem by getting rid of inflation, in my judgment."[91]

In sum, with or without the introduction of indexation schemes, Volcker thought the U.S. economy would always find itself unable to function satisfactorily in the presence of ongoing appreciable inflation and that this would generate pressures to try to relieve the situation by allowing a still higher inflation rate. In response, therefore, to a question about indexing the federal tax system, Volcker explained: "I would like to get the economy back on a basis where price stability is a normal presumption and the issue of [tax] indexing wouldn't even arise."[92]

Planning. Volcker's reference in the remark just quoted to creating a "normal presumption" of price stability reflects an element common to many Federal Reserve discussions of the cost of inflation—the disruption to private-sector planning.

This was articulated in discussions of inflation by pre-1979 Federal Reserve Chairs. For example, Arthur Burns had remarked in 1974: "As a result of… inflation, much of the planning that American business firms and households customarily do has been upset and the driving force of economic expansion has been blunted."[93] But it was brought to the fore especially by Volcker and Greenspan when, in their respective tenures, they expounded the case for moving from the single-digit inflation rates that followed the end of the Great Inflation to still lower rates more consistent with price stability. For example, Volcker (1983d, p. 3), in arguing for "preserving, and extending, the gains against inflation that have been achieved, with so much effort and sacrifice, in recent years," suggested: "We cannot, in my judgment, build a strong and efficient economy on the shifting sands of a depreciating currency. Inflation is the enemy of orderly planning. It breeds a psychology of short-term gains, of speculation, of neglect of the

[90] Testimony of February 26, 1981, in Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives (1981a, p. 173).
[91] Testimony of July 18, 1985, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate (1985, p. 106). Similarly, Volcker (1983a) suggested regarding indexation: "[It] treats the effects rather than the causes of inflation. Financial discipline in both monetary and budget policies, in contrast, get to the heart of the matter… In short, the best solution to the indexing issue is to have it muted and mooted by a conviction of enduring price stability."
[92] Testimony of February 24, 1982, in Committee on Finance, U.S. Senate (1982, p. 105).
[93] Burns (1974b, p. 182). Also in Burns (1978, p. 182).

fundamentals of productivity and efficiency—in other words, it is the enemy of sustained real growth." Volcker (1985a, p. 6) correspondingly indicated that he sought a post-Great Inflation disinflationary environment in which "expectations of greater price stability… become increasingly woven into the fabric of household, business, and financial decision-making."

Similarly, Alan Greenspan (1997b) stressed the benefits conferred to private-sector planning in making his own argument for a low-inflation/strong-growth linkage: "continued low levels of inflation and inflation expectations have been a key support for healthy economic performance. They have helped to create a financial and economic environment conducive to strong capital spending and longer-range planning generally, and so to sustained economic expansion." It was on this basis, Greenspan indicated, that the Federal Reserve "believes it is crucial to keep inflation contained in the near term and ultimately to move toward price stability." In fact, the notion of private-sector planning underlay the Volcker-Greenspan definition of price stability that they expressed qualitatively (and occasionally in more quantitative terms, as we detail in López-Salido, Markowitz, and Nelson, 2024).

4. Policymakers' consistent rejection of high inflation as a policy option

What emerges from the preceding discussion is the fact that, although the details offered about the channels running from inflation to real economic performance differed across Federal Reserve Chairs, successive leaderships of the Federal Reserve and FOMC were consistent in advocating price stability. In light of this consistency, we now elaborate on why we do not believe that the empirical deviations from price stability seen in the United States from the mid-1960s to the early 1980s provide a sound basis for inferring a policymaker desire for high inflation. Specifically, we stress that policymakers rejected the notion of a long-run tradeoff between inflation and unemployment (Section 4.1) and that, although policymakers' views on the responsibility of monetary policy for inflation have differed across periods, there has been uniformity over time in seeing price stability as a desirable condition (Section 4.2).

4.1. No long-run tradeoff

On the basis of the preceding discussion, it is clear that, although Federal Reserve policymakers from the 1950s onward often saw long-run linkages between inflation and output, they did *not* see these linkages as implying a long-run Phillips-curve tradeoff. In contrast to tradeoff-based views—which suggest that permanently higher inflation can make unemployment permanently lower and output permanently higher—Federal Reserve policymakers repeatedly articulated the

position that ongoing inflation was harmful to the long-run levels of output and employment.

This conclusion, drawn from the documentary evidence on policymakers' views, contrasts significantly with many accounts in research papers (including a number cited in Section 1 above) that have examined data on the assumption that the run-up in inflation in the 1960s and the Great Inflation of the 1970s reflected a conscious effort by pre-1979 policymakers.

The valid element underlying these accounts is that the acceptance of natural-rate-hypothesis-type notions underlay Paul Volcker's rationale (documented above) for reducing inflation through monetary policy. He was correspondingly forthright in rejecting the notion of a long-run inverse tradeoff between inflation and unemployment. For example, Volcker (1983b) suggested, with regard to "the so-called tradeoff between controlling inflation and fighting unemployment," "In my view such a tradeoff exists, if at all, only in the short run; over the longer run, sustainable high levels of employment are consistent only with low inflation, or price stability. The experience of the last half of the 1970s and early 1980s is that high and rising inflation eventually brings with it stagnation and unemployment."[94] Volcker regarded the noninflationary expansion seen in his second term as something that "puts the lie to the notion, which once had wide acceptance, that there is a meaningful tradeoff between price stability and job growth."[95]

The invalid element of many Phillips-curve-oriented accounts of empirical monetary policy developments, however, is that they attribute to pre-1979 policymakers the belief that there *was* a tradeoff. In fact, although there were indeed nonstandard aspects in pre-1979 policymakers' views on the causes of inflation (see the next subsection), it is wrong to think that 1979 was preceded by a period in which policymakers sought high inflation in pursuit of a tradeoff associated with a perceived permanently-downward-sloping Phillips curve. Instead, as already implied and documented further in Section 4.2, price stability was the goal throughout the postwar period.[96] It is true, as Volcker (1987) observed, that there was "wide acceptance" of long-run tradeoff views. But that acceptance—and, in particular, the usage of Phillips-curve-type ideas to advocate deviations from price stability—was a characteristic of U.S. economic-

[94] Note that this statement regarding the long-run situation incorporated Volcker's view, discussed above, that high inflation would ultimately damage (actual and potential) output. He had expressed his rejection of a tradeoff in combination with this view on previous occasions, too. For example, on February 25, 1981, Volcker rejected the notion of a long-run tradeoff while also observing: "I bring in price stability because we will not be successful, in my opinion, in pursuing a full employment policy unless we take care of the inflation side of the equation while we are doing it." (In Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1981b, p. 28.)
[95] Volcker (1987, p. 2). In common with many policymaker shorthand discussions of Phillips-curve ideas, this Volcker statement apparently used "job growth" as a stand-in for both resource gaps and growth in employment.
[96] This was stressed by Romer and Romer (2002), as discussed in Section 1 above.

research circles, not monetary policymaking circles. As we will now discuss briefly, in the 1950s and later, Federal Reserve policymakers were arrayed against some in the U.S. research community who favored deliberate inflation as a means of lowering the unemployment rate.

The contrast between researchers and Federal Reserve economists on the desirability of moderate inflation (of a kind that implied a departure from price stability) during the William McChesney Martin, Jr. years was recounted by Arthur Burns, who noted that "prominent economists" in the United States in the 1950s and 1960s saw a conscious deviation from price stability as worth undertaking in order to lower the unemployment rate.[97] Although Burns did not name specific economists, one of the earliest and most prominent was leading Keynesian Seymour Harris. Harris stated in 1954 testimony: "I would be inclined to risk a certain amount of price instability, say, even an increase of 2 or 3 percent, and get rid of, say, one or two million unemployed. I would be ready to take that risk. The authorities don't seem to be ready to take that risk."[98]

The Federal Reserve leadership, however, explicitly took the opposite position, in both the 1950s and the 1960s.[99] For example, Martin (1956, p. 13) observed: "I am convinced that, apart from transitory effects, the result of inflation is the destruction of jobs and prosperity." Similarly, the FOMC's Vice Chairman Allen Sproul (1956, pp. 6–7) referred to the Federal Reserve policymakers' "belief that stability of the dollar and a growing high-level economy are compatible."[100]

During the 1960s, this message was repeated. Sproul's successor, Alfred Hayes, noted (Hayes, 1966, p. 236): "All too many citizens, including some leading businessmen, seem to assume that 'a little inflation' is a reasonable price to pay for continuing economic growth. When 'a little' meant a rather steady upward drift of about 1.5 percent per annum, there was something to be said for this view. But at 3 to 4 percent per annum a different view must be taken." Likewise,

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[97] See Burns (1975a, p. 22; also in Burns, 1978, p. 212). Burns elaborated: "During the 1950s and 1960s, they frequently argued that 'creeping inflation' was a small price to pay for full employment. Some even suggested that a little inflation was a good thing…"

[98] Testimony of December 6, 1954, in Joint Committee on the Economic Report, U.S. Congress (1954, p. 146).

[99] The rejection of a long-run tradeoff between inflation and unemployment by the Martin Federal Reserve in the 1960s was stressed by Rotemberg (2013, p. 74), while Romer and Romer (2002, p. 19) argue that "monetary policymakers in the 1950s also had a relatively modern view of the process of disinflation."

[100] In the year after he left office, Sproul (1957, p. 30) similarly observed: "I would not want our monetary authorities to accept the questionable dictum that high level of production and employment, and reasonable stability of the purchasing power of the dollar, are incompatible." As if in answer to arguments of the kind specifically advanced by Seymour Harris, Sproul (1957, p. 30) also rejected as "insidious" the "idea that a little bit of inflation—a decline in the purchasing power of the dollar of say 2 or 3 percent a year—is a sort of economic tranquilizer which we can take regularly without harm." (As discussed in López-Salido, Markowitz, and Nelson, 2024, from the late 1960s onward a rate of 2 percent inflation became more widely accepted as compatible with price stability.)

the administrations that were in office during the Martin era (including the Eisenhower, Kennedy, and Johnson administrations) all supported the price-stability goal.[101] The rejection by policymakers in the 1950s and 1960s of 3 to 4 percent inflation as an attractive alternative for the U.S. economy reflects not only the fact that price stability was a key goal at the time but also their conviction, firmly held even before the era of stagflation, that deviations from price stability do not provide a lasting economic stimulant.

In the course of the 1970s, too, Federal Reserve officialdom rejected a long-run unemployment/inflation tradeoff. For example, Arthur Burns stated in 1975: "Whatever may have been true in the past, there is no longer a meaningful tradeoff between unemployment and inflation."[102]

4.2. Continuity in views on inflation's costs versus discontinuity on inflation's control

It is worth stressing that our finding of continuity in views on inflation over time refers to the costs of inflation—not to the Federal Reserve's position on where the ultimate responsibility lies for preventing inflation. On this latter point, there have been shifts in the Federal Reserve leadership's view over time, with major changes in what was viewed as the Federal Reserve's responsibility regarding the control of inflation. This situation is summarized in Table 1.[103]

The table highlights the point that, although successive Federal Reserve Chairs have concurred that low inflation is desirable, not all of them have viewed it as technically feasible for the *central bank* to achieve an inflation objective and so—despite their stress on the necessity for control of inflation to be a national goal—not all Federal Reserve Chairs have portrayed monetary policy as having a central role.

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[101] On the Eisenhower and Kennedy administrations, see Romer and Romer (2002), Blinder (2022), and López-Salido, Markowitz, and Nelson (2024). With respect to Kennedy, it is notable that Seymour Harris, although himself supporting a higher inflation rate, observed (Harris, 1965, p. 47): "One of the fundamental objectives of the Kennedy Administration was price stability. The president sought to disassociate himself from a view… that the Democrats are the party of inflation." Indeed, President Kennedy's economic message early in his administration (February 2, 1961) ruled out "seek[ing] to buy short-run economic gains by paying the price of excessive increases in the cost of living" (quoted in Joint Economic Committee, U.S. Congress, 1961, p. 305). With regard to the Johnson Administration, Nelson (2022) provides a detailed discussion of administration economists' views in 1965–1969 and concludes that price stability continued to be an aim common to the administration and the Federal Reserve in this period.

[102] Burns (1975b, p. 12) (also in Burns, 1978, p. 221). Similarly, Burns (1977b, p. 3) contended: "Inflation and unemployment are not alternatives for our economy… Inflation in time causes serious unemployment." (Also in Burns, 1978, p. 416.)

[103] More detailed evidence appears in Romer and Romer (2002, 2004) and Nelson (2005, 2022).

Table 1. Views held by selected Chairs on the Federal Reserve's ability to control inflation

Chair	Chair's view on question: (1) Monetary policy has some influence on inflation?	(2) Monetary policy on its own can (and is the only way to) control inflation (in the long run)?	Illustrative quotation on (2)
Marriner Eccles (Chair, 1934–1948)	Yes	No	"I do not know what monetary policy could possibly be pursued to bring about a fixed price level and maintain it; I do not know how that would be possible… We possibly can exercise some control through monetary action, but I do not think we can exercise absolute control…" (Eccles testimony, March 15, 1935, pp. 311–312.)
William McChesney Martin, Jr. (Chair, 1951–1970)	Yes	Yes	"The [U.S.] central bank was designed to… create more stable values…" (Martin, October 2, 1951 [Martin, 1951b, p. 1].) "The Federal Reserve System is designed to regulate the supply of money in order to foster high levels of employment and stable prices." (Martin, December 12, 1958 [Martin, 1958, p. 1].)
Arthur F. Burns (Chair, 1970–1978)	Yes	No	"I expect this country will move into a vigorous price-wage policy. We have been moving in that direction. I think we need it." (Burns television interview, January 30, 1971 [NBC, 1971, p. 19].)
G. William Miller (Chair, 1978–1979)	Yes	No	"In sum, our arsenal of weapons against inflation is somewhat restricted…" (Letter to Committee on Ways and Means, U.S. House of Representatives, January 17, 1979.)
Paul A. Volcker (Chair, 1979–1987)	Yes	Yes	"Monetary policy is central to the process of dealing with inflation. Economic theory and experience alike indicate that inflation cannot persist without excessive growth in money and credit; or—to state the proposition in reverse—that progress toward price stability cannot be expected without appropriate restraint on the growth of money and credit." (Volcker speech, November 11, 1983 [Volcker, 1983d, p. 4].)
Alan Greenspan (Chair, 1987–2006)	Yes	Yes	Greenspan (1997a): "A central banker cannot be exempted from one very basic fact: In the long run inflation is essentially a monetary phenomenon."
Ben S. Bernanke (Chair, 2006–2014)	Yes	Yes	FOMC (2012): "the Committee has the ability to specify a longer-run goal for inflation."

As the table illustrates, the William McChesney Martin, Jr. period and, even more so, the tenure of successive Chairs since 1979 have seen the Federal Reserve emphasize the central bank's preeminence in the task of controlling inflation and the restoration of price stability in the event of a breakout in inflation. This contrasts with assigning monetary policy a subordinate role and suggesting merely that the central bank must confine itself to providing the maximum, and highly limited, contribution that it could make to controlling inflation. In this latter vein, Marriner Eccles (who served as Chair for most of the two decades prior to Martin) and, in the 1970s, Martin's immediate successors Arthur Burns and G. William Miller consistently suggested that nonmonetary factors had a bearing even on the longer-run inflation rate.[104]

Policymakers' stance on inflation's causes is not the focus of our paper. But the changes in official views over time about inflation's causes are fully consistent with our finding that successive Federal Reserve leaderships uniformly viewed inflation as costly and regarded price stability as being the preferable economic condition. Policymakers' consistent aversion to inflation means that the high-inflation period of the 1970s did not signify policymakers' approval of, or acquiescence to, elevated rates of inflation.

In sum, during the Great Inflation period, policymakers were as critical of inflation as their counterparts in other periods. The occurrence of high inflation did not reflect a difference in policymaker goals, or in the weights on those goals, from those prevailing in adjacent periods.[105] But—in contrast to their counterparts in most other periods—policymakers during the Great Inflation characterized the main means of curing high inflation as consisting of measures other than monetary policy.[106]

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[104] And, specifically, that these factors mattered for the long-run inflation rate via channels operating beyond their influence on potential output and so on long-run economic growth.

[105] The retrospectives of Alan Greenspan on the U.S. policy record of the 1970s are consistent with this characterization. Greenspan was critical of monetary policy as it had been practiced in the 1970s. He suggested that "the Federal Reserve had to do what it did" under Paul Volcker because of prior "policies in which we failed to restrain inflation" (testimony of July 21, 1987, in Committee on Banking, Housing, and Urban Affairs, U.S. Senate, 1987, pp. 35, 36) and that, by 1979, the United States had a "legacy of failed attempts during the decade to restore stability with gradualist plans and with various incarnations of incomes policies" (Greenspan, 2004, pp. 2–3). But he also suggested that the high-inflation outcomes of the 1970s occurred "inadvertently" (Greenspan, 2004, p. 1) and that, with regard to national economic goals including price stability, "Arthur Burns dedicated his public service career to these objectives" (Greenspan, 1987b, p. 2).

[106] Orphanides and Williams (2006, p. 367) summarize their own interpretation of the 1970s inflation: "the interaction of natural-rate misperceptions and a monetary policy strategy that emphasized the attainment of full employment undermined the public's confidence in the Federal Reserve's commitment to price stability." The point stressed here is that, although Federal Reserve policymakers had a commitment to price stability during the 1970s, in that period they also doubted the contribution that monetary policy could make in achieving price stability. Such doubts shaped their reaction function over the period. This factor, in turn, interacted with the elements nominated by Orphanides and Williams.

5. Conclusion

The examination in this paper of statements by the Federal Reserve leadership has established considerable continuity in policymakers' general perception of the implications of elevated inflation rates for economic performance. In particular, policymakers have consistently emphasized inflation's costs and have argued that economic analysis points strongly to the desirability of price stability.

Our finding that policymakers have repeatedly stressed inflation's costs means that it is invalid to take actual deviations from price stability as indicating a policymaker belief in the desirability of inflation. In particular, the Great Inflation of the 1970s should not be regarded as reflecting a high or increased Federal Reserve target rate of inflation. In related work (López-Salido, Markowitz, and Nelson, 2024), we develop this point further by attempting to glean the Federal Reserve's numerical inflation objective. Consistent with the basic conclusion of this paper, we argue that the longer-run inflation goal in the 1970s was close to, but somewhat below, 2 percent. High inflation in the 1970s did not reflect changing views about inflation's merits but the misconceived views in officialdom at the time about how to control inflation.

Our analysis also examined what specific transmission channels were highlighted when policymakers outlined their rationale for price stability. This analysis identified the main change that has occurred in policymakers' views on inflation's costs. Over time, there has been diminished stress on a linkage between price stability and longer-term *growth* in the economy. Federal Reserve Chairs through Alan Greenspan endorsed such a linkage, but the fact that productivity growth has had periods of both strength and weakness in the post-Great Inflation period likely raised doubts about the importance of the inflation-growth connection in the United States, and the Federal Open Market Committee's (2012) consensus statement instead stressed other reasons for the importance of price stability. Overall, however, the arguments raised by policymakers in their advocacy of price stability have exhibited notable consistency over time.

Finally, we note that the focus in this paper has been on the Federal Reserve leadership and its views on the implications of deviations from price stability. Consequently, we have not systematically investigated the processes by which the consensus Federal Reserve view, as expressed by the leadership of the central bank, materialized. Considering this matter would be an important extension of our analysis. Such an inquiry could ascertain the degree to which a new Chair sets the tone of economic thinking of the FOMC—a possibility suggested by Romer and Romer's (2004) finding that Federal Reserve Chairs (through Alan Greenspan), once in

office, have mostly articulated views about the economy's workings that they held prior to their tenure. Another important area of inquiry would be to investigate the extent to which the FOMC's approach to the making of monetary policy has been shaped by the percolation of ideas advanced by Federal Reserve Bank presidents, with these ideas in turn informed by exposure to economic research. Such a long-term influence of Federal Reserve Banks on FOMC thinking would be consistent with the analysis of Bordo and Prescott (2023).

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