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Comments on “Understanding the Evolving Inflation Process”
by Cecchetti, Hooper, Kasman, Schoenholtz, and Watson

Donald L. Kohn

Vice Chairman

Board of Governors of the Federal Reserve System

at the

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This was an interesting paper with an important objective--to contribute to our understanding of inflation dynamics, with a particular focus on the so-called Great Inflation of the 1970s.¹ The better we understand history, the less likely we are to repeat it, even on a reduced scale. Of course, the basic problem in tackling the inflation of the 1970s is that we have one observation and many competing theories. The authors' approach is to consider the experiences of other major industrial countries during that period with the hope that cross-country differences will provide a way to discriminate among the potential causes.

The authors' principal empirical finding is that the onset and, to a lesser degree, the end of the Great Inflation were closely synchronized across a number of countries. On the basis of this timing and other findings, they reject many of the theories about why inflation rose in the period from the late 1960s through the end of the 1970s. According to the authors, the Great Inflation did not stem solely from adverse structural changes to the economy, or from policymaker misunderstandings about the nature of the inflation process, or from errors in gauging aggregate resource utilization. Instead, they say, changes in monetary policy preferences, perhaps accentuated by political influences, are the key part of the story.

I certainly agree with the authors that high inflation could not have emerged and then persisted without an accommodative policy regime and that a period of tight policy was required to produce the sustained moderation in inflation that followed. However, their conclusions do not fit easily with my premise, which is that policymakers did not seek the result they obtained. In thinking about the story told by the paper, I also wonder

¹ Alan Kackmeister and Jeremy Rudd, of the staff at the Board of Governors, assisted in the preparation of these comments. The views expressed here are my own and are not necessarily those of the Board of Governors or its staff.

why political forces and central-banker preferences would necessarily shift at the same time in so many countries. So I am left with the question of why policy was conducted the way it was.

My impulse when it comes to selecting from the list of causative factors in the paper is to say "all of the above." Policymakers in the 1970s--the Federal Reserve among them--were dealt a very bad hand that, for a variety of reasons, they played poorly. The second half of the 1960s saw rising inflation driven by excess demand--a situation not countered sufficiently by a Federal Reserve that perhaps was more subject to political pressures than it should have been. By the early 1970s, politicians as well as the Federal Reserve recognized that inflation was excessive but seemed worried about the cost of reducing it. Those concerns gave rise to the Nixon wage and price controls (which ran from 1971 to 1974).

Into this mix were added some very adverse supply shocks that elevated the costs of disinflation. Productivity growth slowed appreciably in the early 1970s; labor force developments raised the nonaccelerating-inflation rate of unemployment (NAIRU); and oil prices spiked. Moreover, as inflation remained elevated, inflation expectations rose and institutions adapted--for example through cost-of-living adjustments in labor contracts--thus further escalating the presumed cost of disinflation.

Not only were the output costs of disinflation seen to be high but also the monetary policy needed to bring inflation down was consistently miscalculated--economists during the 1970s persistently overestimated both the speed and magnitude of the slowdown in real activity and inflation that would result from a given rise in the federal funds rate. Part of this miscalculation reflected a judgment that the economy and

financial markets were fragile and that small changes in market interest rates would have major effects on aggregate spending (for example, as a result of disintermediation induced by ceilings on the interest rates that banks and thrifts could pay).

But, in addition, the size of the output gap was not correctly perceived. I agree with the authors that this misperception could not have been the whole story; surely consistent surprises on inflation should have been a strong clue that something was amiss. But I was not entirely persuaded by the authors' arguments seeking to minimize this factor, especially those that rely on "new estimates of real-time output gaps," a bit of an oxymoron given that you cannot really produce a *new* real-time estimate of a constructed series like the output gap. Perhaps the gap series produced by the Council of Economic Advisers was viewed skeptically by some contemporary observers, but it was the "official" series published by the Commerce Department, and it was referred to by the Federal Open Market Committee (FOMC) in its policy deliberations. It does not surprise me that forecasters took several years to catch up to the adverse developments in trend productivity and the demographic factors that boosted the NAIRU; in the 1990s, we took a while to realize the implications of favorable movements in both variables even though we were aware from the experience of the 1970s that such changes were possible. Moreover, the oil price shocks, analysis of which was not part of the standard tool kit of economists forty years ago, complicated matters considerably.

For a variety of reasons, then, forecasters consistently underpredicted the future level of inflation, seeing considerably more disinflation from a particular policy stance than in fact occurred. This underprediction was true for the Board staff's outlook prepared for each meeting of the FOMC, in which inflation forecast errors persisted for

some time, and it was also true for the bond market, as realized real interest rates, even at longer maturities, were very low or negative.

These experiences formed the backdrop for the FOMC's October 6, 1979, adoption of a policy targeting the monetary aggregates, a policy whose particular characteristics can be seen as originating from three observations about the 1970s. First, inflation was far too high; it was corroding the economic system; and it was the central bank's responsibility to bring it under control. Second, under the circumstances, economic forecasts had proved to be essentially worthless as a basis for setting monetary policy, so the central bank had to try a different approach for re-establishing price stability--namely, targeting the medium-term growth of the money supply. The third observation was that part of the problem with policy had been its excessive gradualism, possibly to some degree a reaction to political and public pressure. Because interest rates would probably have to move quite a bit to bring inflation down and no one at the time knew by how much, rate movements needed to be less discretionary; one way to achieve this was by changing the focus of policy to rates of money growth.

The memory of the 1970s and the subsequent disinflation are very much alive at the Federal Reserve and, I suspect, at every other central bank. What major lessons have we drawn from that era? First, low and stable inflation--effective price stability--is a necessary condition for the economy to realize its full potential for sustained increases in living standards. I doubt that high inflation was the proximate cause of the 1973 productivity slowdown, which persisted for a decade after 1983 to 1986, the period the authors give for the end of the Great Inflation. And I agree with them that low inflation was not the only cause of the Great Moderation, but I am confident that we would not

have experienced more than two decades of nearly uninterrupted growth if the Federal Reserve had not brought inflation down in the early 1980s and kept it low thereafter. Low inflation reduces distortions from signals in market prices and facilitates longer-term planning. Low and stable inflation also anchors inflation expectations; in turn, anchored expectations make it easier for the central bank to control inflation with smaller variations in real activity.

That brings me to my second major lesson: Expectations are critical to policy success. Expectations about future policy help to determine the financial conditions that affect spending and inflation. In most situations, policy will need to be conducted so that expected *real* interest rates are positive; a policy that pushes expected real rates below zero would be appropriate only in special circumstances, such as when real activity is expected to be persistently weak and inflation undesirably low. Likewise, inflation expectations are critical: Increases in expectations of inflation elevate the cost of returning to price stability, and unanchored expectations make it very difficult to understand where the economy is and where it is going.

As a consequence, I do not agree with the authors' assertion that central banks pay too much attention to inflation expectations. Those expectations may not be as much of a leading indicator of the inflation trend as I would like--although I am not sure that I find the paper's conclusion, that the trend leads expectations, all that persuasive. Indeed, if I accept the authors' assertion that post-1984 expectations have been a lagging indicator of the trend, then, when expectations rise and stay elevated, I should weight that observation heavily, not lightly. Policy cannot be conducted based solely on such a lagging or coincident indicator of inflation, but, of course, it is not. We pay close

attention to those factors that are influencing the outlook for inflation, as for example, the level of resource utilization highlighted in our recent announcements. But a clear lesson of the 1970s is that a central bank must keep a very close eye on sustained movements in inflation expectations.

I think a third lesson is humility--we should always keep in mind how little we know about the economy. Monetary policy operates in an environment of pervasive uncertainty--about the nature of the shocks hitting the economy, about the economy's structure, and about agents' reactions. The 1970s provide a sobering lesson in the difficulty of estimating the level and rate of change of potential output; these are quantities we can never observe directly but can only infer from the behavior of other variables. We cannot effectively implement policy without some reference to the likely level of potential, given that demand-supply pressures are an integral part of the monetary transmission mechanism. But we must be realistic about the accuracy of our estimates of potential while always doing our best to improve them.

Even today, we face a number of sources of uncertainty about the nature of the inflation process. Interestingly, we can draw several examples from the paper. First, any estimate of the persistent component of inflation is inherently uncertain. Comparing the trend inflation estimates for the gross domestic product of the United States in the current study with related estimates based on Stock and Watson's recent paper on the topic reveals an important difference: In the latter, the standard deviation to the innovation of the permanent component of inflation from 1997 onward is not zero but rather permits a small but significant amount of drift in the trend from its late-1990s trough.² Other trend-

² James H. Stock and Mark W. Watson (2007), "Why Has U.S. Inflation Become Harder to Forecast?" *Journal of Money, Credit, and Banking*, supplement to vol. 39 (February), pp. 3-33.

extraction exercises imply either a stable trend or a trend that has drifted up over the past several years; likewise, the behavior of estimated trend inflation over this period differs according to the inflation concept used. Although these differences are small relative to the overall variation in the trend over the past forty years, they are assuredly large enough to be meaningful to a monetary policy maker.

In addition, we do not yet have a consensus structural model of inflation dynamics that satisfactorily explains all the important aspects of the empirical data. As the paper demonstrates, a standard workhorse model--a sticky-price business cycle model with a drifting inflation target and a New Keynesian Phillips curve--cannot mimic one important feature of the inflation process. I will leave it to the modelers to debate the seriousness of this deficiency and to propose how it might be rectified. However, it is clear to me that our understanding of the inflation process still has far to go.

The issue of expectations illustrates our ignorance. As I have already indicated, inflation expectations are among the most important variables policymakers monitor, but we do not have answers to our most basic questions about them: Are available measures suitable indicators of true inflation expectations by households and businesses? How are expectations formed--and in particular what are the respective roles of central bank talk, central bank actions, and actual inflation outcomes? And how do expectations influence price and wage setting? In short, although I believe that inflation expectations are critical to assessing the inflation outlook, I cannot be sure (particularly in real time) that our expectational measures are accurate and so cannot know what precise role expectations play in wage and price dynamics.

In sum, then, I found reading the paper to be useful and instructive because it reminded me not only of what we have learned but also of what we still do not know.