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'Constrained Discretion' and Monetary Policy

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What is the appropriate framework for making monetary policy? This crucial question has sparked lively debate for decades. For much of the period since World War II, at least until recently, the debate has been carried on mainly between those favoring the use of *rules* for making monetary policy and those arguing for reliance on *discretion*.

Under a *strict rules-based approach* to monetary policy, advocated most prominently by Milton Friedman and his followers, the policy instruments of the central bank would be set according to some simple and publicly announced formula, with little or no scope for modification or discretionary action on the part of policymakers. For example, under Friedman's most famous proposal, the so-called *k-percent rule* (Friedman, 1960), the central bank would be charged with ensuring that some specified measure of the national money supply increase by a fixed percentage each year, irrespective of broader economic conditions. Friedman believed that such a rule would have the important advantage of preventing major monetary policy errors, as when the Federal Reserve permitted the U.S. money supply to collapse in the 1930s--a blunder that contributed substantially to the severity of the Great Depression. In addition, Friedman argued, a rule of this type would have the advantages of simplicity, predictability, and credibility, and it would help insulate monetary policy from outside political pressures and what Friedman saw as an inherent tendency toward excessive policy activism.

Neither the k-percent rule nor any comparably strict policy rule has ever been implemented, but "rule-like" monetary policy arrangements have existed in the real world. An important example is the international gold standard, the dominant monetary system of the late nineteenth and early twentieth centuries. Under the gold standard, at least in principle, the central bank's responsibility regarding monetary policy extended

only so far as ensuring that the value of the currency in terms of gold was stabilized at the legally specified value. In short, under a strict gold standard the monetary policy rule would be, "Maintain the price of gold at so many dollars per ounce." Although the gold standard system malfunctioned and ultimately collapsed during the chaotic economic and financial conditions that followed World War I, many economic historians have credited it with promoting price stability and robust international trade and capital flows during 1870-1913, the so-called classical gold standard era.[1] Another example of a rule-like monetary policy institution is a currency board, such as the ones currently employed by Hong Kong and several eastern European nations.

On the other side of the debate, advocates of *discretion* have firmly rejected the use of strict rules for policy, arguing that central bankers must be left free to set monetary policy as they see fit, based on their best judgment and the use of all relevant information. Supporters of discretion contend that policy rules of the type advocated by Friedman are simply too mechanical and inflexible for use in real world policymaking; in particular, simple rules cannot fully accommodate special circumstances or unanticipated events.[2] During the past few decades, for example, financial innovation and new transactions technologies have led to large and difficult-to-predict changes in the empirical relationship between money growth and the rates of growth of output and prices. If central banks had slavishly followed Friedman's k-percent rule for money growth during this period, critics point out, substantial economic instability would have

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[1] The Bank of England's capable "management" of the pre-war gold standard was an important element in its success; after the war, Great Britain no longer had the economic and financial power needed to occupy a central position in the world monetary system.

[2] Proponents of discretion do not necessarily reject the use of "rules" or formulas--such as the famous Taylor rule (Taylor, 1993)--as rough guides to policy, so long as policymakers remain free to deviate from the rule as they see fit. John Taylor himself advocates using his eponymous rule in this way.

been the likely result; indeed, most central banks have de-emphasized money growth as a policy target or indicator in recent years. More generally, opponents of rules have argued that, as a practical matter, policymakers can never credibly commit to abandoning discretion in favor of supposedly "unbreakable" rules.[3] The problem, this argument runs, is that the public will understand that the central bank always has the option of abandoning its rule, should the rule happen to dictate a policy action perceived at the time as counterproductive. Hence, an announcement by the central bank that it is adopting a strict policy rule would carry little credibility.

Although a strict rules-based framework for monetary policy has evident drawbacks, notably its inflexibility in the face of unanticipated developments, supporters of rules in their turn have pointed out--with considerable justification--that the record of monetary policy under unfettered discretion is nothing to crow about. In the United States, the heyday of discretionary monetary policy can be dated as beginning in the early 1960s, a period of what now appears to have been substantial over-optimism about the ability of policymakers to "fine-tune" the economy. Contrary to the expectation of that era's economists and policymakers, however, the subsequent two decades were characterized not by an efficiently managed, smoothly running economic machine but by high and variable inflation and an unstable real economy, culminating in the deep 1981-82 recession. Although a number of factors contributed to the poor economic performance of this period, I think most economists would agree that the deficiencies of a purely discretionary approach to monetary policy--including over-optimism about the

[3] For example, even the classical gold standard contained important elements of discretion in practice, as when countries took measures to prevent their domestic money supplies from being influenced by international gold flows. Moreover, the gold standard often was suspended during wars or national emergencies.

ability of policy to fine-tune the economy, low credibility, vulnerability to political pressures, short policy horizons, and insufficient appreciation of the costs of high inflation--played a central role.

Is there then no middle ground for policymakers between the inflexibility of ironclad rules and the instability of unfettered discretion? My thesis today is that there is such a middle ground--an approach that I will refer to as *constrained discretion*--and that it is fast becoming the standard approach to monetary policy around the world, including in the United States.[4] As I will explain, constrained discretion is an approach that allows monetary policymakers considerable leeway in responding to economic shocks, financial disturbances, and other unforeseen developments. Importantly, however, this discretion of policymakers is constrained by a strong commitment to keeping inflation low and stable. In practice, I will argue, this approach has allowed central banks to achieve better outcomes in terms of *both* inflation and unemployment, confounding the traditional view that policymakers must necessarily trade off between the important social goals of price stability and high employment.

In the rest of my talk, I will first define constrained discretion more precisely and argue that, to an increasing extent, this approach characterizes contemporary Federal Reserve policymaking. I will then explain why I think constrained discretion is the best operating framework for monetary policy, and in particular why it constitutes the best approach for achieving the economic goals that the Congress has set for the Fed. Finally, I will briefly discuss the close relationship between constrained discretion and the strategy for monetary policy known as inflation targeting. Before proceeding, though, I

[4] To the best of my knowledge, this term was first used in connection with monetary policy by Bernanke and Mishkin (1997).

should note that my remarks today do not necessarily represent the views of my colleagues on the Board of Governors of the Federal Reserve System or the Federal Open Market Committee.

What is constrained discretion?

The approach to monetary policy that I call constrained discretion can be defined by two simple and parsimonious principles.

First, through its words and (especially) its actions, *the central bank must establish a strong commitment to keeping inflation low and stable*.

Second, *subject to the condition that inflation be kept low and stable*, and to the extent possible given our uncertainties about the structure of the economy and the effects of policy*, monetary policy should strive to limit cyclical swings in resource utilization.*

In short, under constrained discretion, the central bank is free to do its best to stabilize output and employment in the face of short-run disturbances, with the appropriate caution born of our imperfect knowledge of the economy and of the effects of policy. However, a critical proviso is that, in conducting stabilization policy, the central bank must also maintain a strong commitment to keeping inflation--and, hence, public *expectations* of inflation--firmly under control. Because monetary policy influences inflation with a lag, keeping inflation under control may sometimes require the central bank to anticipate and move in advance of inflationary developments--that is, to engage in "preemptive strikes" on inflation.

In my view, constrained discretion characterizes the current monetary policy framework of the United States. And it has done so to an increasing degree over time. First, since the Fed under Chairman Paul Volcker broke the back of inflation in the early

1980s, inflation in the United States has been both declining and becoming more stable. From a high of nearly 10 percent in 1980, inflation (as measured by the core PCE deflator, twelve-month rate of change) fell to 4 percent by the end of 1984 and to 3 percent by the end of 1992.[5] Inflation breached the 2 percent barrier in the spring of 1996 and has remained consistently within the narrow range of 1.5 to 2 percent for the past six and a half years--for practical purposes, a good approximation to price stability.[6] Likewise, expected inflation--as measured by financial-market indicators as well as surveys of both professional forecasters and consumers--has stabilized at a low level. Thus, the Fed in recent years has demonstrated a commitment to keeping inflation low and stable--the first principle of constrained discretion.

The Fed's commitment to low inflation has not, however, prevented it from being flexible in implementing policy in the short term; in particular, the Fed has not been precluded from responding to adverse shocks to the economy (the second principle). Since the taming of inflation by the Volcker Fed, the United States has faced two recessions, in 1990-91 and in 2001. In both cases, as you know, the Fed eased policy significantly to support real activity. In particular, in 2001 the Federal Open Market Committee lowered the federal funds rate target by 475 basis points in a period of just

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[5] Throughout this talk I follow a common Fed practice in using the core personal consumption expenditure (PCE) deflator to measure inflation. Relative to the more familiar consumer price index (CPI), the PCE deflator (1) has broader coverage, (2) is believed to be based on more accurate expenditure weights, (3) is constructed in a manner that reduces so-called substitution bias, (4) is measured more consistently over time, and (5) arguably does a better job measuring medical inflation. The *core* PCE deflator excludes volatile components, notably the prices of food and energy. Core inflation measures in general are probably better indicators of the underlying rate of inflation, with which central banks are typically most concerned.

[6] Standard inflation measures probably overstate increases in true inflation by about 1.0 percentage point. For example, Lebow and Rudd (2002) estimate that measured inflation using the consumer price index overstates the actual change in the cost of living by about 0.9 percentage points per year, with a confidence interval ranging from 0.3 percentage point to 1.4 percentage points per year. (The bias in the PCE deflator, which is chain-weighted, may be a bit less.) In addition, as I discussed in a previous talk, aiming for an inflation rate modestly above zero provides a useful buffer against deflation risk.

under a year. Importantly, inflation and inflation expectations seem to have been virtually unaffected by this large move--a direct benefit, I argue, of the Fed's previous investment in establishing a commitment to price stability. Moreover, both output and employment have become considerably more stable in the past twenty years, relative to previous decades--a result I attribute in substantial part to improvements in monetary policy.[7] The Fed has also responded aggressively and flexibly to crisis conditions in financial markets, in episodes ranging from the 1987 stock market crash to the 1998 Russian crisis to the aftermath of the September 11, 2001, terrorist attacks.

In the United States, the Congress has assigned to the Federal Reserve the objectives of maintaining price stability, maximum employment, and moderate long-term nominal interest rates. Of course, the Federal Reserve System, and in particular the Federal Open Market Committee, treats each part of this congressional mandate with utmost seriousness. Because the Fed appears to an increasing degree to be following a policy of what I have called constrained discretion, one must ask: Is this policy approach consistent with the Congress's mandate for monetary policy?

My answer is absolutely yes. In my view, this policy framework achieves *each* of the goals set by the Congress with greater consistency and effectiveness than any alternative of which I am aware. Broadly, there are three reasons why successful monetary policy is built on a foundation of price stability, as implied by the framework of constrained discretion. First, of course, price stability is one of the objectives for

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[7] Stock and Watson (2002) note that the standard deviation of annual growth rates in real GDP fell from 2.7 percent during 1960-83 to only 1.6 percent in 1984-2001. They attribute 20 to 30 percent of this reduction in volatility to improvements in monetary policy. Arguably, however, stabilizing factors that Stock and Watson treat as exogenous, such as the reduced variability of commodity prices (other than oil), are actually in part the result of more stable policies.

monetary policy set by the Congress and, indeed, is highly desirable in its own right. And, of course, the price level is the macroeconomic variable over which a central bank exerts the most direct control in the long run. Second, *in the long run* price stability promotes high employment and low nominal interest rates--the other objectives set by the Congress--as well as productivity and economic growth. Third, and most subtly, *in the short run* a record of consistently low inflation increases central bank credibility and stabilizes inflation expectations, effects that in turn actually *increase* the flexibility of the central bank to respond to shocks to the economy. I will discuss each of these points, beginning with the importance of price stability in the long run and then turning to the short-run issues.

Price stability and economic performance in the long run

Constrained discretion, at its foundation, recognizes the critical importance of maintaining price stability, both in the long run and in the short run. The desirability of maintaining price stability in the long run is by now hardly a matter for dispute, with virtually all economists in agreement that, in the long run, low inflation confers many benefits on the economy. Most fundamentally, only when inflation is low do nominal--that is, dollar--values provide a reasonably stable measure of real economic values. We should not underestimate the importance of this simple point. Although economists are used to the idea of "real" or inflation-adjusted quantities, making inflation adjustments in practice requires significant information, expertise, and effort. Thus, instability in the price level significantly impedes the ability of the typical household to make long-term financial plans, for example, or to compare prices of goods and services separated in space and time. (In a high-inflation economy, price information grows "stale" more

quickly than newly baked bread.) Planning, investment, and pricing decisions by firms are likewise complicated and often distorted by inflation. Because prices constitute the market economy's fundamental means of conveying information, the increased "noise" that inflation adds to prices raises transactions costs and erodes the efficiency of the free market system.

In a similar vein, as economist Martin Feldstein has frequently pointed out, price stability permits contracts, tax laws, accounting rules, and the like to be expressed in nominal (dollar) terms without concern about fluctuations in the value of money.[8] If prices are instead variable and unpredictable, then contracts or laws written in dollar terms will produce unintended and probably undesired economic outcomes.[9] Feldstein, for example, has emphasized how the interaction of inflation with the tax code leads to unintended increases in the real cost of capital, which inhibit investment and reduce economic growth. Likewise, because debt contracts are written in nominal terms, unanticipated inflation transfers wealth from creditors to debtors, adding to the risk of financial contracting and at times posing a significant threat to the financial system itself. For example, the savings and loan crisis of the 1980s, which cost U.S. taxpayers hundreds of billions of dollars, was to a substantial extent the result of the unexpected inflation of the 1970s, which greatly reduced the real value of mortgage loans made by the S&Ls in an earlier, low-inflation era. These losses effectively de-capitalized the savings and loans, setting the stage for the problems that followed.

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[8] See Feldstein (1997) and references therein.

[9] In principle, indexation to the price level could remove or moderate the unanticipated consequences of inflation in laws and contracts. In practice, however, indexation can be costly and complex, as suggested by the fact that people seem reluctant to adopt indexation even when inflation is relatively high. The shortcomings of indexation as a solution to high inflation have been illustrated by the experience of many developing countries in recent years.

Given the Congress's mandate to the Federal Reserve, the long-run relationship between price stability and employment is an issue of particular importance. Our understanding of this relationship has evolved considerably over the past forty years. During the 1960s, U.S. policymakers appeared to believe that a long-run tradeoff between these two objectives existed and that that tradeoff could be exploited for policy purposes (Samuelson and Solow, 1960). That is, it was thought that by accepting a modest increase in the inflation rate, policy could achieve a *permanently* lower rate of unemployment. Both economic theory and U.S. economic experience have shown this view to have been in error, and that no long-run tradeoff between inflation and unemployment exists is now widely accepted. Indeed, because price stability promotes efficiency, productivity, and capital investment, one can reasonably presume that low inflation actually *increases* employment and real wages in the long run. Because price stability also promotes moderate long-term nominal interest rates, a commitment to price stability clearly is fully consistent in the long run with the objectives set by the Congress.

Price stability and economic performance in the short run

That price stability is beneficial to the economy in the long run is well established. As economists and policymakers have increasingly come to recognize, however, the benefits of a commitment to price stability in the short run are probably at least as significant.

I think it worthwhile, before discussing the short-run benefits of price stability for the economy, to note the simple fact that, historically, periods of unstable prices have also tended to be periods of marked instability in output and employment. In the nine decades since the founding of the Federal Reserve System, the United States has

experienced two large, sustained departures from price stability. The first was the precipitous deflation of 1929-33, during which prices fell at a rate of about 10 percent per year; the second was the prolonged inflationary period that began in the latter part of the 1960s and did not end until the early 1980s. Of course, each of these episodes was associated not only with instability of prices but also with exceptionally poor economic performance more generally. The 1929-33 deflation ushered in, and to a significant extent was the cause of, the broad economic collapse we now know as the Great Depression. The inflation that began in the United States in the second half of the 1960s was associated with slow growth, bouts of high unemployment, and instability in economic activity, including the two worst recessions of the postwar period in 1973-75 and 1981-82.

What is the link between price instability and instability in output and employment in the short run? In a previous talk I focused on the risks, so evident in the 1930s, that uncontrolled deflation poses for the economy, and I doubt that many of my listeners today will require much convincing on that point.[10] So that no misunderstanding occurs, however, let me state clearly that the commitment to price stability under constrained discretion entails strict avoidance of *deflation* as well as of *inflation*. That said, I will concentrate for the remainder of the talk on the risks that inflation creates for economic stability in the short run. For illustration, I will emphasize the U.S. "Great Inflation," the experience of the late 1960s through the early 1980s.

The primary cause of the Great Inflation, most economists would agree, was over-expansionary monetary and fiscal policies, beginning in the mid-1960s and continuing, in

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[10] See "Deflation: Making Sure that 'It' Doesn't Happen Here", November 21, 2002, www.federalreserve.gov.

fits and starts, well into the 1970s. The fiscal expansion of this period had a variety of elements, including heavy expenditures for the Vietnam War and President Johnson's Great Society initiatives. Monetary policy first accommodated the fiscal expansion, and then--for reasons I will note--began to power the inflationary surge on its own. The breakdown of the price stability that had characterized the 1950s and early 1960s was remarkably quick; inflation was perceived as a problem by the late sixties. Though temporarily restrained by the Nixon price controls, inflation (again as measured by the core PCE deflator) rose from 2.6 percent in February 1973 to 9.8 percent in February 1975. After the deep 1973-75 recession, inflation fell back to the range of 6 to 7 percent for several years before rising again to 9.8 percent in September 1980.

Like inflation, the real economy was also highly volatile during this whole period. The civilian unemployment rate, below 4 percent throughout the second half of the 1960s, rose above 6 percent during the 1969-70 recession, declined briefly, then rose again to 9 percent in May 1975. Unemployment declined slowly from there, falling below 6 percent only in late 1978 and early 1979. But during the 1981-82 recession, unemployment peaked at 10.8 percent--a rate not seen since the 1930s--and remained above 10 percent as late as June 1983. Taking the inflation and unemployment performance together, one should not be surprised that a recent chronicler of the period called the Great Inflation the 1970s "the greatest failure of American macroeconomic policy in the postwar period" (Mayer, 1998, p. 1).

Why was this episode so dismal? Critically, although Fed officials often mentioned the importance of keeping inflation low during the 1960s and 1970s, the record of inflation outcomes during that period shows that their commitment to

maintaining price stability was spotty. Several factors contributed to the Federal Reserve's inflationary policies, including the political pressures exerted by the Johnson and Nixon administrations (Mayer, 1998, chapter 5). Mistakes of analysis--among them a tendency to blame nonpolicy factors (such as union wage pressures) for inflation, a misplaced belief in the potential efficacy of wage-price controls, and overly optimistic assessments of the economy's growth potential in both the 1960s (DeLong, 1997; Romer and Romer, 2002) and early 1970s (Orphanides, 2001)--also played a key role.

Yet another miscalculation, particularly important in the early stages of the Great Inflation, was the already-mentioned idea of an exploitable long-run tradeoff, according to which policymakers supposedly would be able to achieve permanently lower unemployment by accepting a bit more inflation.[11] Indeed, initially the tradeoff idea appeared to be valid, for unemployment fell while inflation rose only moderately during the latter part of the 1960s. However, as we now understand, in this early period the Fed was living off the capital of two previous decades of price stability, which had conditioned the public to expect low inflation. Because the period began with expected inflation under control, monetary expansion in the latter part of the 1960s stimulated real spending and production without leading immediately to wage and price pressures. As the public woke up to the new reality of high and rising inflation, however, inflation expectations began to rise as well. Within a few years, the Federal Reserve found itself in a situation in which inflation and inflation expectations had risen considerably, while the earlier gains in terms of lower unemployment and higher growth had dissipated.

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[11] Romer and Romer (2002) make this argument and provide historical documentation. See also Taylor (1997) and Mayer (1998).

The high and erratic inflation of this period contributed to instability of output and employment in a number of ways. I will highlight two. First was the pattern of *go-stop policies* followed by the Fed. The Fed understood in principle that stabilizing inflation and inflation expectations was important, but--knowing that a slowdown in spending and output (of a magnitude difficult to guess) would be an unwelcome side effect--it was extremely reluctant to tighten monetary policy enough to do the job. The resulting compromise has been appropriately described as "go-stop" policy. First, over-expansion led to inflation, the "go" phase. Then, periodically, when inflation became bad enough, the Fed would tighten policy (the "stop" phase), only to loosen again when the resulting slowdown in the economy began to manifest itself. The net result of this policy pattern was to exacerbate greatly the instability of both inflation and unemployment, while making little progress toward restoring price stability or re-anchoring inflation expectations. This cycle ended only under Chairman Volcker, who (together with his colleagues on the FOMC) had the courage to keep policy tight until inflation and inflation expectations finally began to stabilize in the early 1980s. Of course, the cost of this critical stabilization was the high unemployment and lost output associated with the sharp 1981-82 recession.

The second link between the instability of inflation and that of unemployment in the Great Inflation operated through the behavior of *inflation expectations*. As I have noted, when the episode began in the 1960s, inflation expectations were well anchored, in the sense that the public was conditioned by long experience to expect low inflation. Hence, the first expansionary policy moves of the 1960s did succeed in raising output and employment without much initial effect on prices. As demand pressures accumulated

and inflation rose, however, the Fed's credibility as an inflation-fighter was lost and inflation expectations began to rise. The unmooring of inflation expectations greatly complicated the process of making monetary policy; in particular, the Fed's loss of credibility significantly increased the cost of achieving disinflation.

The severity of the 1981-82 recession, the worst of the postwar period, clearly illustrates the danger of letting inflation get out of control. This recession was so exceptionally deep precisely because of the monetary policies of the preceding fifteen years, which had unanchored inflation expectations and squandered the Fed's credibility. Because inflation and inflation expectations remained stubbornly high when the Fed tightened, the impact of rising interest rates was felt primarily on output and employment rather than on prices, which continued to rise.[12]

One indication of the loss of credibility suffered by the Fed by the time of the 1981-82 episode, and the difficulty of getting it back once lost, was the behavior of long-term nominal interest rates. For example, the yield on 10-year Treasuries peaked at 15.3 percent in September 1981--almost two years after Volcker's Fed announced its disinflationary program in October 1979--suggesting that long-term inflation expectations were at that point still in the double digits. The 10-year Treasury yield did not fall below 10 percent until November 1985. Remarkably, 30-year Treasury yields were only slightly lower than 10-year yields throughout the episode, implying that the markets had no confidence that inflation would *ever* return to 1950s or 1960s levels.

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[12] In an important paper, Orphanides and Williams (2003) use a theoretical model to show that when the public forms its expectations of inflation behavior by observing the actual behavior of inflation, the importance of the central bank keeping inflation low and stable--and thereby "anchoring" the public's inflation expectations--is greatly increased.

The behavior of long-term nominal interest rates in the early 1980s can be contrasted with that of more recent years. Today the 10-year Treasury yield is approximately 4 percent, suggesting substantial confidence on the part of financial market practitioners that inflation will remain low for the next decade. Indeed, we have the benefit of a developed market for indexed debt to make that inference more precise: The expected inflation rate inferred from the yield on 10-year inflation-protected Treasury bonds is now about 2.0 percent for CPI inflation. Also notable is the fact that the substantial easing of monetary policy during 2001 appeared to generate no concerns about future inflation, as evidenced by the record low long-term interest rates and stable survey-based inflation expectations that we are still seeing.

You may have noticed that I have discussed the Great Inflation of the 1970s with an emphasis on Federal Reserve behavior but without mentioning oil prices. My reading of the evidence suggests that the role the conventional wisdom has attributed to oil price increases in the stagflation of the 1970s has been overstated, for two reasons. First, the large increases in oil prices that occurred in this period would not have been possible in an environment that was not already highly inflationary because of previous monetary expansion. In an important paper, Barsky and Kilian (2001) make this case in some detail. They note, for example, that prices of other industrial commodities and raw materials rose substantially at the same time as oil prices, suggesting that broader monetary forces--and not factors specific to the oil market--account for much of the rise in the oil price in 1973.[13]

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[13] In related work, Bohi (1989) and Bernanke, Gertler, and Watson (1997) provide evidence that macroeconomic policy, rather than the behavior of oil prices, was the most important source of macroeconomic instability in the 1970s.

Second, without Fed accommodation, higher oil prices abroad would not have translated into domestic inflation to any significant degree. To see this point, note that oil prices do not directly affect the measure of inflation that I have been using here--the change in the core PCE deflator, which excludes energy prices. Thus, any link of oil prices to inflation must be through so-called second-round effects, in which increased fuel prices push up wages and other costs. Comparison of the 1970s and the 1990s confirms the common finding in the literature that the degree of "pass-through" to core inflation from supply shocks, such as a rise in oil prices or a depreciation of the exchange rate, depends strongly on how well domestic expectations of inflation are anchored.[14] Because inflation expectations were not well anchored in the 1970s, the oil price shocks were in fact associated with substantial pass-through, that is, increases in core inflation. As already noted, core PCE inflation rose by a whopping 7 percentage points in the years 1973-74, the period of the sharpest increase in oil prices. In the 1990s, by contrast, oil price changes seemed to have no noticeable effect on core inflation. For example, the price of oil at the end of 1998 was a little more than $11 per barrel; over the next two years the price of oil tripled, exceeding $34 per barrel late in 2000. Then, over the subsequent year, the price of oil suddenly reversed itself, dropping 40 percent. Despite these gyrations, core inflation remained firmly anchored throughout the period, registering between 1.5 percent and 2.0 percent on a twelve-month basis in every month. Although structural changes have occurred in the economy since the 1970s, including increased energy efficiency, this difference in the degree of pass-through from oil prices to general inflation can be explained, in my view, only by differences in the stability of

[14] In a study of OECD countries, Ball and Sheridan (2003) find that the effect of commodity price shocks on inflation in recent years has dropped by a factor of ten, relative to earlier decades.

inflation and inflation expectations. Overall, it is reasonable to conclude that macro policy, particularly monetary policy, was the most important single reason for the poor economic performance experienced during the U.S. Great Inflation.

Constrained discretion and inflation targeting

I mentioned at the beginning of the talk that constrained discretion characterizes at least to some degree the policy approach of many of the major central banks around the world. It is, in fact, closely related to the policy framework known as inflation targeting. Let me take a moment to explain the relationship between what I have termed "constrained discretion" and the more familiar concept of inflation targeting.

It is useful, I think, to divide monetary policymaking into two parts--roughly, what you do and what you say about it. "What you do" covers the operational aspects of policy--the assessment of economic conditions and the setting of policy instruments (such as the federal funds rate in the United States). "What you say" is about how you talk to the public and relates to the issues of central bank transparency, communication, and accountability. "What you do" is certainly the more important of the two, though I think most central bankers understand that communication is a valuable tool.

The details of inflation-targeting regimes vary by country and have evolved over time. Broadly speaking, however, the operational, or "what you do," side of what I consider to be best-practice inflation targeting is well described as constrained discretion, as I have characterized it here.[15] Specifically, most inflation-targeting central banks try to stabilize output and employment subject to the constraint that inflation remain low and

[15] The Federal Reserve has a dual mandate, with responsibility for both employment and inflation. The formal mandates for inflation-targeting central banks vary, but in practice virtually all take employment and output into consideration as well as prices--that is, they practice what is sometimes referred to as "flexible" inflation targeting.

stable--in the case of formal inflation targeters, of course, within the declared target range for inflation. As I have noted, constrained discretion also describes reasonably well the recent policy approach of the Federal Reserve, though of course the Fed does not have publicly announced inflation targets. Thus, on the operational side, the policy frameworks of the Federal Reserve and of the leading central banks with formal inflation targets are today rather similar.

The second element of inflation targeting--the communication, or "what you say," side--consists of not only a public announcement of a target range for inflation (the hallmark of inflation targeting) but also a variety of other mechanisms for talking to markets and the public. These include the regular publication of so-called Inflation Reports, release of forecasts, prompt release of minutes, and other measures. Here is the principal area in which the Federal Reserve--though it has certainly become markedly more transparent in the past decade--has not chosen to adopt the whole framework of inflation targeting.[16] Many have concluded that central banks that have adopted the transparency and communication aspects of inflation targeting have strengthened their overall policy performance--through enhanced communication to the public of their objectives and plans, improved management of expectations, greater consistency of policy, and heightened accountability.[17] The Fed has much in common with other major

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[16] Among the steps taken by the Federal Reserve to increase transparency in recent years include immediate announcement of changes in the target for the policy rate, the issuance of a "balance of risks" statement, and the publication of minutes and (with a five-year lag) the transcripts of each FOMC meeting.

[17] Case studies of several inflation-targeting central banks are presented in Bernanke, Laubach, Mishkin, and Posen (1999). Ball and Sheridan (2003) find that there has been substantial improvement in monetary-policy outcomes in OECD countries generally in the 1990s, a result that can reasonably be attributed to widespread adoption of what I have here referred to as constrained discretion. Ball and Sheridan also find that inflation-targeters improved by somewhat more than non-inflation-targeters, but they attribute this finding to the phenomenon of "regression toward the mean" rather than to any benefits of formal inflation-targeting per se.

central banks, but of course it also differs in important ways, including its history, legal framework, and institutional structure. Whether adopting any or all of these communication strategies would be useful for the Federal Reserve is an important issue about which I hope to say more in the future.

Conclusion

My objective today has been to lay out the advantages of using a framework of constrained discretion for making monetary policy. The essence of constrained discretion is the central role of a commitment to price stability. Not only does such a commitment enhance efficiency, employment, and economic growth in the *long run*, but--by providing an anchor for inflation expectations--it also improves the ability of central banks to stabilize the real economy in the *short run* as well. An important and interesting implication is that, under a properly designed and implemented monetary policy regime, the key social objectives of price stability and maximum employment tend to be mutually reinforcing rather than competing goals.

Thank you very much for your attention.

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