ONE

The Pragmatic Evolution of the Monetary Standard

The twentieth century was marked by vast, horrific disasters as well as by widespread, beneficent progress. In the first half of the century, two world wars almost ended Western civilization. In the second half, democracy spread and living standards rose. Throughout, monetary instability interacted with social upheaval and political disorder. Inflation and deflation created feelings of powerlessness in the face of impersonal forces that promoted a search for scapegoats. Hyperinflation and depression contributed to the rise of Nazism in Germany. The stability of the deutsche mark then accompanied the German postwar growth miracle (Hetzel 2002a; 2002b).

In the United States, deflation and depression in the 1930s produced a decade of untold human misery. The Great Inflation of the 1970s spawned wage and price controls, which trampled on due process. The feeling of government's loss of control, symbolized by gas lines, helped propel Ronald Reagan into power. After Paul Volcker led the Fed to accept responsibility for inflation in 1979, an increase in monetary stability accompanied an increase in economic stability.

The success of the twenty-first century will depend upon how well societies learn the lessons of the twentieth century. The grand monetary experiment of the last century was the replacement of a gold standard with a fiat money standard. The failure of central banks to understand their new responsibility to provide a nominal anchor for prices lay at the heart of the spectacular monetary failures of that century. What nominal anchor and what monetary standard are in place at the start of the current century?

I. The Volcker–Greenspan Monetary Standard

The U.S. monetary standard has evolved pragmatically rather than by conscious design. The current standard arose out of the consistent effort by the Volcker–Greenspan (V–G) FOMC to reanchor inflationary expectations unmoored by the experience with stop-go policy. Consistency under duress achieved credibility.

Credibility laid the foundation for the current nominal anchor: an expectation of low, stable trend inflation unaffected by macroeconomic shocks.[1]

Something must "anchor" the public's expectation of the future value of money. For the gold standard, it was the commitment to maintain the par value of gold. Under the gold standard as it existed in the late nineteenth century, money received its value from the Bank of England's commitment to maintain in the future a fixed pound price of an ounce of gold. For the contemporaneous money price of gold to be viable, the public had to believe that the Bank would maintain that value in the future.

To achieve the stability in the expected future price level requisite for contemporaneous stability of the price level, today the public must believe that the central bank will behave consistently. Over the quarter century of the V–G era, the Fed did not follow a rule in the sense that it never departed from consistent procedures for setting the funds rate.[2] Nevertheless, the achievement of near price stability derived from an overall consistency of behavior that emerged out of an effort to restore the expectational stability of the earlier commodity standard.[3]

II. Stop–Go Monetary Policy and Loss of a Nominal Anchor

Experience with a commodity standard created an expectation of price stability that persisted into the second half of the twentieth century. The primacy attached to price stability by the early William McChesney Martin FOMC sustained that expectation into the 1960s. Subsequently, stop–go policy opportunistically exploited it and, in time, destroyed the nominal anchor provided by the expectation of price stability.

Keynesians emphasized discretionary manipulation of aggregate demand. Because they assumed the existence of an inertia in inflation independent of monetary policy, they believed that, subject to the inflation–unemployment trade-offs of the Phillips curve, the central bank could manipulate aggregate nominal demand to smooth fluctuations in real output. The exercise of discretion, however, destroyed the prior nominal expectational stability.

Sherman Maisel (1973, 14, 285), a member of the Board of Governors from 1965 until 1972, expressed the Keynesian view:

> There is a trade-off between idle men and a more stable value for the dollar. A conscious decision must be made as to how much unemployment and loss of output is acceptable in order to get smaller price rises. Some price increases originate on the cost side or in particular industries. These cannot be halted by monetary policy, which acts principally on the overall aggregate demand for goods and services. . . . [E]xperience . . . shows that without some type of government intervention in the price–wage bargains struck by labor and industry, the trade-off between inflation and unemployment is unsatisfactory.

Robert Weintraub (U.S. Cong. July 16, 1974, 44) documented the prevalence of these views among FOMC members in the 1970s.[4]

Starting with the Kennedy and Johnson appointments to the Board of Governors, Keynesian views became increasingly prevalent within the FOMC. According to these views, monetary policy should aim for full employment, almost universally assumed to occur at a 4% unemployment rate or less. This figure benchmarked potential output. By 1970, elimination of the resulting presumed negative output gap (actual minus potential output) became a national and an FOMC objective. Furthermore, a nonmonetary view of inflation led the FOMC to believe that monetary policy could be stimulative without increasing inflation as long as the output gap was negative. The inflation that did occur with unemployment in excess of 4% had to arise from cost-push inflation. Failure to accommodate such inflation would require high unemployment.

The loss of expectational stability began in 1966 when the FOMC, unlike 1957, did not move in a sustained way to eliminate nascent inflation. Bond yields began a long, irregular climb to the low double-digit figures reached in the early 1980s. They fell briefly during the 1970 recession but resumed rising in spring 1971. The Nixon administration wanted rapid M1 growth to stimulate output sufficiently to reduce the unemployment rate to 4.5% by summer 1972. Arthur Burns, FOMC chairman, campaigned for wage and price controls as the price of stimulative monetary policy. In their absence, inflationary expectations, Burns contended, would counter the stimulative effects of expansionary policy. On August 15, 1971, Nixon delivered the controls Burns wanted and Burns obliged with expansionary monetary policy (Chapter 8).

Charls Walker (U.S. Cong. November 1, 1971, 36), treasury undersecretary, later summarized the forces leading the Nixon administration to adopt wage and price controls:

> [I]nflationary expectations . . . began to come back on us last winter after we had them under some control. Interest rates were going down, and then [they] shot back up again. . . . [L]abor tended to leapfrog into the future and get 3-year contracts to guard against additional inflation. Inflationary expectations are what really got us.

Keynesian aggregate demand management relied on inertia in actual and expected inflation as the lever with which increases in aggregate nominal demand lowered unemployment. By the end of the 1970s, that apparent inertia disappeared. The public's response to price controls offered an early example. Initially, their imposition did assuage inflationary fears and permit stimulative monetary policy. However, as George Shultz (Shultz and Dam 1978, 71), Treasury secretary in the Nixon administration, wrote:

> Once the suspicion of permanence sets in, gamesmanship develops between the private and public sectors. It becomes apparent that the controls process is not a one-way street in which the government does something to the private sector; rather, it is a two-way street, with the government taking an action, the private sector reacting to it,

the government reacting in turn, and so forth. It is a continual process of interplay and interrelations through which those "controlled" develop ways of doing whatever they really want to do.

Apart from wartime, before 1965, the United States had never experienced sustained high inflation. Experience with a commodity standard had conditioned the public to expect stationarity in prices. However, the sustained rise in inflation produced by stop–go monetary policy changed expectations. As the public learned that policy did not provide for stationarity in either the price level or the inflation rate, an increase in expected inflation increasingly offset the stimulative effect of the expansionary policy followed in the go phases of stop–go policy. By 1979, the Fed found itself operating in the world described by Barro and Gordon (1983) and Kydland and Prescott (1977) where the public believes that the central bank possesses an incentive to raise inflation to lower unemployment below its sustainable value.[5] Forward-looking expectations on the part of the public offset the stimulative effect of monetary policy on the unemployment rate.

Herbert Stein (U.S. Cong. July 30, 1974, 71), Council of Economic Advisers (CEA) chairman in the Nixon administration, foresaw the environment that Volcker inherited upon becoming FOMC chairman in 1979:

> If policy or external events slow down the growth of demand, price and wage increases abate little if at all, as everyone is looking across the valley to the next surge of inflation. Because price and wage increases persist at a high rate employment suffers, and governments are driven or tempted to prop up demand, validating the expectation of continued or ever accelerating inflation.

Volcker (December 3, 1980, 4) observed:

> [T]he idea of a sustainable "trade off" between inflation and prosperity . . . broke down as businessmen and individuals learned to anticipate inflation, and to act in this anticipation. . . . The result is that orthodox monetary or fiscal measures designed to stimulate could potentially be thwarted by the self-protective instincts of financial and other markets. Quite specifically, when financial markets jump to anticipate inflationary consequences, and workers and businesses act on the same assumption, there is room for grave doubt that the traditional measures of purely demand stimulus can succeed in their avowed purpose of enhancing real growth.

Greenspan (U.S. Cong. February 19, 1993, 55–6) made the same point:

> The effects of policy on the economy depend critically on how market participants react to actions taken by the Federal Reserve, as well as on expectations of our future actions. . . . [T]he huge losses suffered by bondholders during the 1970s and early 1980s sensitized them to the slightest sign . . . of rising inflation. . . . An overly expansionary monetary policy, or even its anticipation, is embedded fairly soon in higher inflationary expectations and nominal bond yields. Producers incorporate expected cost increases quickly into their own prices, and eventually any increase in output disappears as inflation rises.

III. A New Nominal Anchor

By summer 1979, the United States had lost the nominal anchor provided by a residual expectation of inflation stationarity. The bond rate fluctuated widely at a level that exceeded 10% until December 1985. The persistent effort to change the inflationary expectations of the public, unmoored in the prior period of stop–go monetary policy, formed the crucible in which Volcker and Greenspan forged a new monetary standard. At the time, the change to a preemptive policy of raising the funds rate in the absence of rising inflation engendered fierce criticism. The abandonment of aggregate-demand management in favor of stabilizing inflationary expectations was a departure for unknown shores.

Volcker and Greenspan had to reduce the expectation of high inflation manifested in the high level of bond rates. Furthermore, financial markets had come to associate inflation shocks (relative price shocks that pass through to the price level) and positive growth gaps (above-trend real output growth) with increases in trend inflation. After the initial disinflation that brought inflation down to 4% in 1983, the FOMC still had to convince markets that a go phase would not follow a stop phase. It had to forego expansionary policy early during economic recovery when inflation had fallen but unemployment had not yet returned to full employment. The V–G expected-inflation/growth gap policy emerged in 1983 when the FOMC raised the funds rate in response to rising bond rates despite the existence of high unemployment and falling inflation. Greenspan reconfirmed the policy during the "jobless recovery" from the 1990 recession when the FOMC lowered the funds rate only gradually to work down the inflationary expectations embodied in long-term bond rates.

As a consequence of responding to the increases in bond rates produced by positive growth gaps, the FOMC replaced an output-gap target with a growth-gap indicator. It raised the funds rate in response to sustained above-trend growth rather than waiting until a perceived negative output gap approached zero and inflation rose. The more expeditious movement in the funds rate eventually convinced markets that FOMC procedures would keep real growth in line with potential growth promptly enough to prevent increases in inflation. As a result, in response to shocks, market participants began to move forward real interest rates embodied in the yield curve continuously in a way effectively estimated to return real output to potential (Hetzel 2006). The alternation of intervals of stimulative and restrictive monetary policy disappeared. Ironically, allowing the price system to work rather than attempting to improve upon it produced more rather than less economic stability.

TWO

Learning and Policy Ambiguity

The Fed does not possess a systematic procedure for acquiring knowledge about the working of monetary policy and for communicating such knowledge to the public. In this chapter, I argue that to learn and communicate in a systematic manner the Fed must use the language of economics to engage in a dialogue with the academic community over the interpretation of monetary history.

I. Disagreement over the Nature of Monetary Policy

Disagreement arises over whether the Fed must choose between stabilizing unemployment and stabilizing prices. In the 1960s, the question was whether achievement of low unemployment required acceptance of inflation (Samuelson and Solow 1960). In the 1980s, when the Fed's primary objective changed from low, stable unemployment to low, stable inflation, the question became whether stability in prices required variability in unemployment (Modigliani and Papademos 1975). For those who answered affirmatively, the empirical correlations of the Phillips curve promised a quantitative answer.

The fundamental disagreement comes from differing views over the nature of price-level determination. Is there a hard-wired (intrinsic) persistence to actual and expected inflation that exists independently of monetary policy? Alternatively, does the behavior of actual and expected inflation derive from the systematic part of monetary policy – the rational expectations assumption? The attempt here is to provide relevant evidence by using different monetary policies over the twentieth century as experiments yielding outcomes useful for testing hypotheses. Especially, does the public learn to form its expectations of inflation in a way that is conformable to the systematic part of monetary policy?

The twentieth century offers two grand monetary experiments. The first came from the Fed's intermittent acceptance of responsibility for the price level. For most of the 1920s, led by Governor Benjamin Strong at the New York Fed, the Fed accepted that responsibility by sterilizing gold inflows. After the 1951 Treasury–Fed Accord, led by Martin, the Fed also accepted it, and it did so again in the V–G era.

In contrast, just after World War I, during the Great Depression, and during the stop–go period from 1965 through 1979, the Fed assumed that the behavior of prices derived from market (nonmonetary) forces.

The second grand monetary experiment came from the back-to-back combination of stop–go policy and the V–G policy. With the prior policy, the primary objective was low, stable unemployment sought for in the management of aggregate demand. With the latter, it became low, stable inflation sought for in the establishment of expectational nominal stability (low, stable expected inflation). The underlying premise for stop–go policy was the existence of intrinsic inflation persistence, that is, the hard-wired propagation of today's inflation into tomorrow's inflation absent an increase in unemployment above full employment.

Intrinsic inflation persistence is a two-edged sword. Through its control over aggregate nominal demand, the central bank can exercise systematic control over real aggregate demand and unemployment. However, to control the inflation that arises from inflation shocks, periodically it has to raise unemployment. In the politically and socially charged environment of the 1960s and 1970s, low, stable unemployment became the policy priority. Given this priority, to lessen the presumed cost in terms of unemployment of controlling inflation, policymakers turned to a range of incomes policies from presidential interference in the price setting of corporations to full-fledged wage and price controls. The direct attempt to stabilize real variables destabilized them. In contrast, in the V–G era, stabilization of inflation stabilized output.

The association of monetary and price-level instability in the periods when the Fed rejected responsibility for the price level conforms to the quantity theory hypothesis that the price level varies to endow nominal money with the purchasing power desired by the public. The failure of the inverse relationship between inflation and unemployment to survive stop–go policy and the failure of the inverse relationship between inflation variability and unemployment variability to survive the V–G policy contradict the idea of an exploitable Phillips curve with intrinsic inflation persistence. These outcomes support the Friedman–Lucas natural-rate/rational-expectations hypothesis. First, real variables possess well-defined values ("natural" values that would obtain with perfect price flexibility). Second, rational, forward-looking individuals form expectations conformably with the systematic behavior of the central bank and set prices conformably with those expectations. It follows that the central bank cannot predictably manipulate real variables – real money or unemployment. It can control trend inflation, but it must do so through consistent (rule-like) behavior that creates the expectation of unchanging trend inflation.

II. A Normative Roadmap

Learning requires knowledge of the strategies followed by the central bank. What were the objectives of monetary policy and what consistent behavior underlay the actions that policymakers took to achieve those objectives? Historically, the

Fed has obfuscated the answers. At best, it has revealed only its policy actions, while appealing to "discretion" to avoid clear statement of objectives and strategy. Policy ambiguity in the form of unwillingness to announce explicit objectives and a strategy for achieving them impedes learning. Rather than blaming past mistakes on a failure to learn resulting from this ambiguity, the temptation has been to imbue mistakes with inevitability.

The judgment of inevitability applied to the Great Depression of the 1930s and Great Inflation of the 1970s rests uneasily with the fact that a period of relative stability preceded each. In the 1920s, Governor Strong sterilized gold inflows to preserve price stability. He also moved the Fed in the direction of a lean-against-the-wind interest rate policy directed toward macroeconomic stability. At the same time, however, Strong wrapped himself in the cloak of policy ambiguity.

Irving Fisher (1934, 151) reported a conversation in which he urged Governor Strong to support a bill of Representative Strong's mandating the Fed to stabilize the price level (Hetzel 1985, 8):

> In talking with him [Governor Strong], he said, "Don't compel me to do what I am doing. Let me alone and I will try to do it. If I am required by law to do it, I don't know whether I can, and I will resign. I will not take the responsibility." I said to him, "I would trust you to do it without a legislative mandate, but you will not live forever, and when you die I fear this will die with you." He said, "No, it will not."

Fisher then recounted how Governor Strong and Representative Strong, shortly before the former's death, drafted a mandate instructing the Fed to maintain "stable purchasing power of the dollar." However, Governor. Strong felt compelled to seek approval of the Board, which it failed to provide, and Representative Strong's bill came to naught.

Prior to the Great Inflation, Martin presided over a period of low inflation. He reinvented the Fed in a way that looked forward to the V–G era. Instead of a monetary policy focused on financial intermediation and the control of speculation, Martin emphasized economic stabilization. Lean-against-the-wind replaced real bills (Hetzel and Leach 2001a; 2001b). Martin believed that the Fed had responsibility for the purchasing power of the dollar, by which he meant price stability, not low inflation. Although internal division and political attack pushed him off course in the last part of the 1960s, he returned to monetary restriction in 1969. Martin's term, however, ended in January 1970.

Earlier, in fall 1928, before the onset of the Depression, Strong died. Governor George Harrison, who followed Strong, was a weak leader (Hetzel 2002a, Appendix). Arthur Burns, who followed Martin, was a strong but poor leader. Under Burns, the political system wanted the Fed to maintain low unemployment as a way of assuaging the political divisions produced by a variety of distributional shocks. In the 1960s, those shocks included the Vietnam War, the need for higher taxes due to expansion of the welfare state, and disorder in the inner cities. In the 1970s, they included imports that created protectionist pressures and low

productivity growth that reduced the revenue growth needed for the expansion of government programs demanded by an activist Congress. Burns believed that monetary policy could give the political system what it wanted, provided the political system gave him the additional instrument of price controls.

Neither Strong nor Martin left a Fed that could cope with the poor leadership of their successors. Policy ambiguity obscured the primacy that Strong and Martin assigned to price stability. The political advantages of policy ambiguity gave way to the longer run disadvantage of confusion about the appropriate role for monetary policy. No internal debate occurred capable of establishing consensus over the role of policy. Faced with external shocks and poor internal leadership, the Fed has foundered. The United States can institutionalize monetary stability. However, to do so, the Fed must be open and promote the necessary debate. Policy ambiguity prevents debate and invites instability.

III. Measurement without Theory

Koopmans (1947) and Lucas (1976) criticized policymaking within an atheoretical framework. In his review ("Measurement without Theory") of Burns and Mitchell's book, *Measuring Business Cycles*, Koopmans (1947, 167) wrote:

> There is no . . . awareness of the problems of determining the identifiability of, and measuring, structural equations as a prerequisite to the practically important types of prediction. . . . Without resort to theory . . . conclusions relevant to the guidance of economic policies cannot be drawn. . . . [T]he mere observation of regularities in the interrelations of variables then does not permit us to recognize or to identify behavior equations among such regularities.

With only the descriptive language of business economics, policymakers cannot make predictions based on cause and effect. With that language, the Fed cannot talk about what macroeconomic variables it controls and how it controls them. Without a framework that yields falsifiable predictions from alternative policies, learning is haphazard.

Like Burns, Greenspan understood monetary policy through the business forecasting perspective, which encourages characterization of optimal policy as the optimal period-by-period choice of policy actions. It focuses on the difficulty of near-term forecasting, which requires the relentless synthesis of a vast amount of disparate information. The constant arrival of unanticipated news makes forecasting inherently difficult. From this perspective, the world is fraught with complexity and uncertainty. The simplifying abstractions of economic models appear irrelevant or naïve.

Nevertheless, those abstractions explain how central banks have succeeded in combining price and economic stability. The price level is a monetary phenomenon: The procedures central banks use to control monetary base creation determine the behavior of inflation. Expectations are rational: The public learns to form its

expectations of inflation conformably with the consistent behavior of monetary policy. The price system works to equilibrate macroeconomic activity: Fluctuations in the real interest rate within moderate limits maintain real output in line with potential output over time. These characteristics allowed the V–G FOMC to follow rule-like behavior that both stabilized expected trend inflation and allowed the price system to work (Hetzel 2006).

IV. Concluding Comment

The central bank is responsible for the value of money. Because money's value today derives from the value that individuals expect it to have tomorrow, Lucas's (1980, 255) argument for rules applies naturally to monetary policy:

> [O]ur ability as economists to predict the responses of agents rests, in situations where expectations about the future matter, on our understanding of the stochastic environment agents believe themselves to be operating in. In practice, this limits the class of policies the consequences of which we can hope to assess in advance to policies generated by fixed, well understood, relatively permanent rules (or functions relating policy actions taken to the state of the economy). . . . [A]nalysis of policy which utilizes economics in a scientific way necessarily involves choice among alternative stable, predictable policy rules, infrequently changed and then only after extensive professional and general discussion, minimizing (though, of course, never entirely eliminating) the role of discretionary economic management.

Lucas (1980, 255) also noted:

> I have been impressed with how noncontroversial it [the above argument for rules] seems to be at a general level and with how widely ignored it continues to be at what some view as a "practical" level.

Concern for nominal expectational stability imparted a rule-like consistency to policy in the V–G era. However, apart from the nonborrowed reserves strategy adopted October 1979, policy evolved pragmatically rather than as a conscious choice of strategy by the FOMC. In no case has it ever involved "extensive professional and general discussion," much less discussion with the academic community utilizing the language of economics. The resulting lack of public understanding of the monetary standard imparts fragility to that standard.