

## ACHIEVING MONETARY STABILITY AT HOME AND ABROAD

*James Gwartney, Kurt Schuler, and Robert Stein*

Economic growth is no accident; it needs an environment of secure property rights, openness to trade, reliance on markets, and monetary stability. Since 1982, the United States has enjoyed relatively low and stable inflation, which has contributed to strong and steady economic growth. During the same period, many developing countries have experienced currency crises and economic collapse. Here we consider the evolution of monetary policy in the United States and analyze the implications for establishing sound money worldwide.

### Views of Monetary Policy in the United States during the 20th Century

Monetary theory and its influence on the monetary policy of the United States in the 20th century can be divided into four distinct eras. The ideas that dominated in the United States during each era also exerted a substantial impact elsewhere.

#### *Era 1 (Prior to the 1930s): The Simple Quantity Theory—Money Does Not Affect the Real Economy*

Until the Great Depression, the simple quantity theory of money held sway, despite stirrings of more sophisticated ideas (Schumpeter 1954: 1074–1135). Economists and policymakers believed that the quantity of money in circulation determined the price level, but little else. According to this view, increases in the supply of money caused a proportional increase in the price level without altering output or employment. Because it was thought that monetary policy did not affect real variables, no one paid much attention to monetary policy.

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James Gwartney is Professor of Economics at Florida State University, Kurt Schuler is Senior Economist at the Joint Economic Committee of the U.S. Congress, and Robert Stein is Chief Republican Economist at the U.S. Senate Budget Committee. Gwartney and Stein were both at the Joint Economic Committee when this paper was written. The views here are the authors' alone, not necessarily those of the committee.

In fact, the *Federal Reserve Bulletin*, the chief publication of the Federal Reserve System, did not even publish money supply statistics.

The simple quantity theory was unable to address the Great Depression. As banks failed and the money supply collapsed, most people blamed the instability of the capitalist system. Only a lonely minority of economists, mostly at the University of Chicago, blamed the Federal Reserve for aggravating the Depression.

*Era 2 (1930s–1960s): The Early Keynesian View—Money Does Not Matter Much*

The Great Depression made economists receptive to the ideas of John Maynard Keynes (1936). The Keynesian view spread through the economics profession in the 1930s and 1940s, and was completely dominant during the 1950s and 1960s.<sup>1</sup> Misled by their failure to understand the real causes of the Great Depression, Keynesians believed market economies were inherently unstable. However, most thought countercyclical fiscal policy could reduce instability. Rather than balanced budgets, Keynesians called for budget deficits during recessions and (at least in theory) surpluses to control inflationary expansions. Keynesians of the 1950s and 1960s were convinced that fiscal policy was highly potent and that monetary policy was largely impotent, except perhaps as a tool for the control of inflation. They often argued that using monetary policy to stimulate output was as ineffective as “pushing on a string.” The early Keynesians were content to let the Bretton Woods system, established in the late 1940s, remain in place.

*Era 3 (1970s): The Later Keynesian View—Monetary Policy as a Tool*

Beginning with Milton Friedman and Anna Schwartz’s (1963) monumental *Monetary History the United States*, a group of economists that became known as monetarists challenged the Keynesian view of the importance of money. The monetarists believed monetary disturbances were the primary cause of economic instability. As Friedman (1968: 12) said in his 1967 presidential address to the American Economic Association:

Every other major contraction in this country [in addition to the Great Depression] has been either produced by monetary disorder or greatly exacerbated by monetary disorder. Every major inflation has been produced by monetary expansion—mostly to meet the

<sup>1</sup>“What Keynes meant” has been a subject of prolonged controversy among economists. Keynes himself might have disagreed with much that came to be called Keynesian.

overriding demands of war, which have forced the creation of money to supplement explicit taxation.

In the 1960s, monetarists convinced many other economists that monetary policy was highly potent and that inappropriate monetary policy had contributed to past disturbances, including the Great Depression. But this was the golden era of Keynesian economics. The Keynesians believed governments could stimulate output and employment and manipulate demand so as to reduce the instability that was thought to be an inherent characteristic of a market economy. Thus, contrary to the intentions of monetarists, their view regarding the potency of monetary policy was merely integrated into the Keynesian arsenal of tools available to manipulate and control the economy.<sup>2</sup>

The resulting synthesis and the end of the Bretton Woods gold standard in the early 1970s paved the way for activist monetary policy in the 1970s. Policymakers thought they could smooth business cycles by adding monetary stimulus during recessions and shifting to restraint during inflationary booms. Friedman and other monetarists had warned that monetary policy lags were lengthy and unpredictable. They argued that because of this unpredictability, activist monetary policy would do more harm than good. Unfortunately, they were unable to convince the policymakers of the 1970s. Policymakers sought to exploit the alleged Phillips Curve tradeoff between inflation and unemployment, by creating inflation in an effort to reduce unemployment. The public soon began to anticipate higher inflation and the alleged tradeoff dissipated. The stop-go monetary policies of the 1970s were the underlying cause of both the high inflation and the broader economic instability of the decade.

#### *Era 4 (1980s–Present): A Focus on Controlling Inflation*

The experience of the United States and other countries in the 1970s convinced economists and policymakers that using monetary policy to try to manipulate output, employment, and other real economic variables increases rather than reduces instability. Today, most developed countries have shifted toward monetary policy designed to achieve price stability.

<sup>2</sup>The evolution of the Keynesian view can be illustrated by the changes in the classic introductory textbook of Paul Samuelson, America's foremost Keynesian economist. Samuelson's textbook dominated the market from the late 1940s through the 1970s. In an interview prior to the 12th edition of the book in 1985, Samuelson stated, "In the early editions of the book, fiscal policy was top banana. In later editions that emphasis changed to equality. In this edition we've taken a stand that monetary policy is most important" (Kilborn 1985).

## Monetary Policy under Bretton Woods

Until the final collapse of the Bretton Woods system in 1973, the gold standard formed the backdrop for monetary theory and policy worldwide. Under the Bretton Woods version of the gold standard, the United States agreed to buy and sell gold with foreign central banks at a price of \$35 per ounce. In turn, most other countries established pegged exchange rates between their currencies and the U.S. dollar. (A pegged exchange rate is one where the exchange rate is constant for the moment—but not necessarily for a long period—in terms of some anchor currency and the monetary authority has discretionary power to vary the monetary base. A fixed rate is one where the exchange rate is constant and the monetary authority, if any, lacks discretionary power to vary the monetary base. A floating rate is one that is not maintained constant in terms of any anchor currency.)

The Bretton Woods system limited the monetary discretion of the United States. The U.S. dollar's peg to gold meant that if the Federal Reserve expanded the supply of dollars too rapidly, demand for gold rose. Foreign central banks would bring dollars to the United States and exchange them for gold. The outflow of gold would signal an overly loose monetary policy by the United States. The Fed would have to tighten, or risk depleting U.S. gold reserves. On the other hand, when demand for dollars rose faster than the supply, gold reserves rose, signalling the need for the Fed to pursue a more expansionary monetary policy.

The Bretton Woods system also limited the monetary discretion of other countries. If a country expanded its money supply too fast, domestic prices would rise, stimulating imports relative to exports. This would cause an excess supply of the domestic currency in the foreign-exchange market. If the country did not tighten its monetary policy, it would lose dollar reserves and eventually be unable to maintain its currency's pegged exchange rate with the dollar. The discipline the system imposed was generally effective: median annual inflation for the period 1951 to 1970 was 3.2 percent for developed countries, 3.5 percent for developing countries with central banking, and 2.1 percent for developing countries with other monetary systems (Schuler 1996: 26).

As Table 1 indicates, the economic performance of the United States was good in the Bretton Woods era. The relatively steady long-term relationship between the price of gold and the general price level of goods and services gave people confidence that the general level of prices would not change dramatically. This confidence encouraged investment. During the 1950s and 1960s, the in-

TABLE 1  
THREE PERIODS OF U.S. MONETARY POLICY

	Bretton Woods (1950–70)	Activist Policy (1971–82)	Price Stability (1983–present)
Average annual inflation (%)			
Consumer prices	2.4	7.9	3.3
GDP deflator	2.5	7.1	2.7
Standard deviation of inflation (%)			
Consumer prices	2.0	3.1	1.1
GDP deflator	1.7	1.8	0.9
Average unemployment rate (%)	4.7	6.8	6.2
Average annual growth of GDP/person (%)	2.5	1.6	2.5
Average annual growth of productivity (%)	2.8	1.6	2.5

SOURCE: Haver Analytics.

flation rate averaged 2.5 percent, hovering in the 1 percent to 4 percent range. Between 1950 and 1970, GDP per person expanded at an average annual rate of 2.5 percent and nonfarm productivity grew at an average annual rate of 2.8 percent.

The system worked reasonably well as long as policymakers thought monetary policy exerted little impact on the economy. There were, however, some major problems. One was that monetary policy had a discretionary element. The monetary base did not change always and only in response to inflows and outflows of gold. The Fed could alter the supply of dollars by adding or draining liquidity from the banking system or changing bank reserve requirements. At times, the Fed expanded the money supply even though the United States was losing gold reserves. As long as gold reserves were large, the Fed had substantial discretion.

Other countries also had some discretion. Upon losing foreign exchange reserves, some chose to devalue rather than alter monetary policy. The devaluations reduced confidence that they were fully committed to sound money. Many countries also imposed trade barriers (tariffs and quotas) or exchange controls to prop up their currencies.

With the rise of monetarism during the 1960s, more and more economists of all persuasions became convinced that monetary policy exerted a strong impact on output and employment. As we have noted, though, the 1960s were also the heyday of Keynesian economics and the Phillips Curve. These factors created a conflict between the restraint of an idealized Bretton Woods system and the desire to use monetary policy to promote output and employment. Policymakers had a strong incentive to stimulate output and employment by increasing the money supply. The incentive was not as strong to reduce the money supply, thereby risking a slowdown in the economy, to preserve the pegged exchange rates of the Bretton Woods system. There was a conflict between pegged exchange rates and the discretionary use of monetary policy to achieve domestic economic goals. Policymakers are not angels. If they are allowed to manipulate the system, they will eventually do so if it is to their perceived political advantage.

As the United States increased its reliance on discretionary monetary policy, monetary expansion increased and inflation rose beginning in the late 1960s. People lost confidence in the dollar's peg to gold, expectations of inflation rose, and foreign central banks demanded more gold than the United States wished to supply. In August 1971, the United States broke its promise to exchange gold at \$35 an ounce. The Nixon administration decided that rebuilding con-

confidence in the peg to gold would result in an economic slowdown hazardous to its political chances; it opted instead first to suspend and by the end of 1973 to abandon the gold standard.

### Inflation: The Economic Plague of the 1970s

The collapse of the Bretton Woods system removed limits on the Federal Reserve's discretion in monetary policy. The results were bad. Consumer prices in the United States rose at an average annual rate of almost 8 percent during 1971–82. Inflation soared to double digits in 1974–75, and again in 1979–81. Productivity and economic growth per person slowed by more than one-third (see Table 1).

Inflation harmed the economy in a number of ways. The interaction of inflation and the tax code was particularly pernicious. Income tax brackets were not indexed for inflation until the 1980s, so even if a worker's nominal earnings kept pace with inflation he faced a higher marginal tax rate, thereby reducing his incentive to work. The expected effective capital gains tax was often many multiples of the official rate, thereby deterring investment. For example, if someone expected the price level to double and expected an investment of \$1,000 to grow to \$2,500, an official capital gains tax rate of 35 percent would be an expected *effective* tax rate of 105 percent.<sup>3</sup> If the investment grew only to \$2,000 or less, the capital gains tax would be as much as \$350 even though in real terms the investor suffered a loss; in effect, the tax rate would be infinite. Also deterring corporate investment was the effect of inflation on depreciation schedules. Companies that purchase productive assets often must deduct the associated costs over the life of the assets, rather than all in the year of purchase. Inflation eroded the value of depreciation allowances.

Inflation also created other problems. First, as inflation became higher it also became more volatile. As Table 1 shows, the standard deviation of the inflation rate (as measured by the consumer price index) rose from 2.0 in the Bretton Woods years of 1950 to 1970 to 3.1 in the activist policy years of 1971 to 1982. The volatility of inflation made long-term planning more difficult for both households and businesses. Households had more difficulty determining the level of savings that would yield the real asset values they sought to attain. Businesses had more difficulty determining the profitability of their ventures. A sudden unexpected shift in inflation could turn what appeared to be a lucrative endeavor into an unprofitable one.

<sup>3</sup>A nominal gain of \$1,500 taxed at 35 percent makes the tax payment \$525. The real gain on the investment would be \$500, since the inflation-adjusted basis for the investment would be \$2,000.

Second, inflation undermined the role of relative prices in signaling relative scarcity, leading to less productive allocation of resources. Generalized inflation did not lead to simultaneous and proportional increases in prices. Prices of some goods rose more quickly than others, largely depending on what stage of production the goods were associated with. Price increases caused by inflation rather than increases in relative scarcity inefficiently diverted production toward items whose prices were rising fastest. Ultimately those goods were overproduced, which resulted in high costs when resources were shifted back to more efficient uses after people realized inflation had fooled them.

Third, inflation induced people to use their time and energy protecting against inflation rather than producing goods and services. Capital that could have been used in production was used to buy inflation hedges, such as real estate, gold, and silver.

### Disinflation: Setting the Stage for Growth Since the 1980s

Wringing out the inflationary excess of the 1970s caused a recession in 1981–82 but set the stage for strong long-term economic growth thereafter. Since 1983, inflation has generally remained within the 1 percent to 4 percent range. As Table 1 shows, the standard deviation of the inflation rate during the last 18 years has been 1.1 percent (0.9 percent when measured by the GDP deflator), which is significantly lower than during either the Bretton Woods era or the 1970s. In fact, the year-to-year volatility of inflation has been lower than for any similar period in recorded U.S. history. The low and stable rates of inflation created the environment for the strong growth the United States has experienced since the early 1980s. Of course, other factors including increased trade, lower taxes, and reductions in spending as a share of the economy were also important, but the gains from these factors would have been smaller had it not been for the relative price stability of the era.

Lower inflation reduced the effective tax rate on capital gains and increased the value of depreciation allowances to companies purchasing productive assets. The more stable environment made long-term planning easier for households and businesses, improved the efficiency of resource allocation, and induced investors to switch resources from inflation hedges into more productive assets. As Table 1 indicates, both productivity and economic growth per person rebounded to the levels typical of the Bretton Woods era. Unemployment fell, and by the late 1990s reached levels not seen since the 1960s.

## Monetary Policy Lessons of the 20th Century

As George Santayana (1905) warned, “Those who cannot remember the past are condemned to repeat it.” What are the lessons of the 20th century for monetary policy and their implications for the Federal Reserve? The following points stand out.

1. *Monetary policy, especially bad monetary policy, has potent short-run effects.* Bad monetary policy is the most common cause of both inflation and recession. When monetary policy is too expansionary, it leads to inflation. When it is too restrictive and results in lower inflation than people anticipate, it leads to recession. The 20th century is a testimony to the potency of monetary policy. Expansionary monetary policy fueled the inflations of the world wars and the 1970s; deflationary monetary policy caused (or at least aggravated) the Great Depression; and stop-go monetary policy has contributed to economic instability throughout the century.

2. *Monetary policy cannot reliably be used to control real economic variables over the long run.* The Fed cannot use expansionary monetary policy to push interest rates downward and thereby stimulate output and employment, at least not for long. Doing so will lead to inflation, which will soon become anticipated. As this happens, nominal interest rates will rise and output and employment will recede. The result will be higher interest rates, greater uncertainty, and lower long-term levels of output and employment than would occur under price stability.

3. *Stop-go monetary policy cannot be effectively used to smooth the ups and downs of the business cycle.* Attempts to do so increase rather than reduce economic instability. Our ability to forecast turns in economic growth is limited, and the lag between when a change in monetary policy is instituted and when it exerts its primary impact is long and unpredictable. Both these factors undermine the discretionary use of monetary policy as a stabilization tool.

4. *Monetary policy under floating exchange rates should focus on controlling the general level of prices.* When monetary policy achieves price stability (low and easily predictable rates of inflation), it creates the most favorable environment for a market economy. When the Fed achieves price stability, it has done all it can to promote high levels of output and employment.<sup>4</sup>

<sup>4</sup>Gwartney et al. (2000) investigate the impact of both inflation and its variability on economic growth from 1980 to 1995 for 82 countries for which data were available. They control for a number of factors, including rates of investment, average level of education, and economic freedom indicators such as those in Gwartney and Lawson (1997). They find

5. *When the monetary authorities target and achieve price stability, the ups and downs of a market economy are relatively minor.* In the aftermath of the Great Depression, Keynesian economists developed multiplier and accelerator models to “prove” that market economies were inherently unstable. The implications of the models are fallacious. Historically, a leading cause of economic instability has been monetary instability. As the experience of the last 18 years shows, when Fed policies keep inflation low and therefore highly predictable, there is relatively little economic instability. This is not to say that the business cycle has been repealed. Supply shocks and inappropriate policies in other areas will continue to generate ups and downs in the level of economic activity. However, when price stability exists, the swings will tend to be less pronounced than they have been historically.

## Achieving Price Stability in the United States and Other Developed Countries

Price stability requires an anchor. Under the Bretton Woods system, the anchor was gold. After the collapse of the Bretton Woods system, many countries with floating exchange rates failed to devise an anchor to substitute for gold. Since the 1980s, developed countries have remedied the situation by targeting the price level or inflation.<sup>5</sup> A working definition of price stability has emerged in the form of a consensus that monetary policymakers should keep the inflation rate within a band of zero to 3 percent. In several cases the target and acceptable band range are explicit. The European Central Bank tar-

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that both inflation and the variability of inflation had a statistically significant negative impact on growth. Some researchers have argued that only high levels of inflation harm growth. To test that hypothesis, Gwartney et al. rerun their model using only the 61 countries that had average annual rates of inflation of less than 20 percent from 1980 to 1995. They find that the rate of inflation is no longer significantly correlated with growth, but the *variability* of inflation is (at the 99 percent level of confidence). Their finding is consistent with views that stress adverse effects of inflation on uncertainty, transaction costs, and the efficiency of financial markets.

<sup>5</sup>Monetary policy might target either the price level or the inflation rate. With price-level targeting, a secondary choice would be to target a constant price level or a price level that consistently rises at a predetermined rate. Under either version of price-level targeting, inflation rates that lead to a price level above the targeted rate would have to be offset by either deflation or below average inflation. Inflation targeting would merely seek to maintain inflation at a low rate. Thus, inflation rate targeting can result in an upward drift in the price level. However, inflation rate targeting might create less variability in the inflation rate. As a practical matter, the difference between a price-level target and a low inflation target is small, since measurements of inflation are generally thought to be upwardly biased by about 1 percent per year.

gets an inflation rate of no more than 2 percent. Other advanced countries that explicitly target inflation include Australia, Canada, New Zealand, Sweden, and the United Kingdom (Bernanke and Mishkin 1997). While the United States does not have an explicit target, both public statements and the economic record suggest that under both Paul Volcker and Alan Greenspan the Fed has sought to keep inflation in the 1 percent to 4 percent range.

Low rates of inflation during the Greenspan era have dampened enthusiasm in the United States for a mandated target. Because most members of Congress are confident the Greenspan Fed will keep the inflation rate low, they see little need for an explicit target. Like most good things, however, the Greenspan era will come to an end. Rather than waiting and acting at a time when a new chairman is seeking to earn credibility, prudence would suggest that we act now while the confidence in the chairman is high. Possible models for legislation include the Economic Growth and Price Stability Act (1999), introduced by U.S. Senator Connie Mack of Florida, and the Price Stability Act (1999), introduced by Representative Jim Saxton of New Jersey. Both acts would require the Federal Reserve to define price stability and target that definition, presumably some narrow range for the inflation rate. Accountability and credibility are important elements of sound money. An institutional mandate instructing the Fed to maintain the inflation rate within a narrow band would clarify the central objective of monetary policy, increase the accountability of the Fed, and enhance confidence that it would focus on the maintenance of price stability, regardless of who is occupying the chairmanship of the Board of Governors. Legislation of this type would enhance the reputation of the dollar both at home and abroad.

How difficult is it for the Fed and other central banks to steer a stable monetary course? A variety of indicators provide information on whether current policy is sufficiently restrictive to keep the inflation rate low. The growth rates of monetary aggregates are of some value, but they must be interpreted with caution because their relationship to economic growth is constantly changing. Moreover, there are lags in collecting data. In contrast, changes in exchange rates, commodity prices (particularly those for goods like gold that are traditionally used as hedges against inflation), the slope of the yield curve, and the interest rate gap between the nominal and indexed bonds provide monetary decisionmakers with constant and immediate feedback. If monetary policy is too loose, the following are likely to occur: (1) a fall in the exchange rate of the dollar against other low-inflation currencies, (2) rising commodity prices, particularly for inflation-sensitive goods like gold, (3) short-term interest rates that

are low relative to long-term interest rates, and (4) an abnormally large spread between the interest rates of regular and inflation-indexed bonds. The opposite conditions are likely to occur when monetary policy is tight.

The growth rate of a broad indicator of nominal purchases such as total expenditures on consumption and investment may also be of some value. If the Fed were to keep the growth rate of nominal spending on a steady path approximately equal to potential long-term sustainable growth (5 percent a year, for example), market forces would determine the breakdown between the real and mildly inflationary components. An acceleration in the growth rate of nominal spending would signal that monetary policy was too expansionary, whereas a deceleration would imply that it was too restrictive.

Some argue that the Fed should also use the unemployment rate as a tool with which to forecast inflation. If the nonaccelerating inflation rate of unemployment (NAIRU) were relatively constant and could be estimated with precision, this might be a sensible approach. However, the NAIRU is difficult to measure and is influenced by public policy, technological change, and demographics. These factors reduce its usefulness as a forecasting device, particularly in today's fast-changing world. In recent years, relative price stability has reduced effective marginal tax rates; welfare reform has encouraged work; freer trade has enhanced efficiency; the maturing of the baby boomer generation and technological changes have enhanced productivity. As a result, the rate of unemployment has fallen without leading to higher prices.

There is no single indicator that unfailingly reveals whether monetary policy is too loose, too restrictive, or about right. However, a combination of variables is capable of signaling the need for a policy change within a period that would permit appropriate corrective action (Johnson and Keleher 1996). The primary deterrent to maintaining low, predictable rates of inflation is lack of commitment. When political institutions and central bankers focus on price stability, it can be achieved. The recent record of developed economies provides evidence for this position.

### Achieving Price Stability in Developing Countries

Since the end of the Bretton Woods system, developing countries, which are home to 5 billion of the world's 6 billion people, have not had the same success as developed countries in returning to price stability similar to that most enjoyed in 1950s and 1960s. In the 1980s and 1990s, inflation spread from a few developing countries where it

had been a chronic problem to Africa and the former communist bloc. Lack of confidence that inflation would be low has created vicious circles of currency depreciation leading to higher expected inflation and further currency depreciation. Developing countries have suffered eight major currency crises since 1982: in Latin America in 1982–83, Africa’s CFA franc zone in 1993–94, Mexico and Argentina in 1994–95, East Asia in 1997–98, Russia in 1998, Brazil in 1999, Turkey in 2001, and Argentina in 2001. The effects of these crises have included sharp recessions, bank panics, defaults on foreign debt, riots, and political turmoil. Moreover, there have been numerous minor crises that have severely affected particular countries but have not spilled over into international markets.

Table 2 assembles some information about monetary performance since 1971, the year the Bretton Woods system began to break up. The table divides countries into three groups: developed countries with central banking; developing countries with central banking; and countries with other monetary systems, most of which are developing countries with currency boards or dollarization.

As the table shows, developing countries with central banking have had by far the worst performance. Developing countries with other monetary systems have performed about as well as developed countries, except regarding inflation. The explanation for their much higher average rate of inflation is that many began operations during periods when confidence in the currency was lacking and the local currency had depreciated rapidly. Prices lagged behind the depreciation of the currency, making them low by international standards. Establishing a truly fixed exchange rate restored confidence in the currency and allowed prices to rebound to international levels, which to statisticians looks like high inflation for the first year or two after reform. A number of other studies that have investigated the performance of central banking versus currency boards and official dollarization in developing countries have found results consistent with those of Table 1 (Ghosh, Gulde, and Wolf 1998; Hanke 1999; Hausman, Gavin, and Pagés-Serra 1999).<sup>6</sup>

How can developing countries achieve monetary stability? Because the currency crises developing countries have suffered in the last 20 years have hurt those with pegged exchange rates most, the “pure” options of floating rates or truly fixed rates have become more attractive. Current wisdom among economists and policymakers holds that no currency regime is right for all countries or at all times.

<sup>6</sup>However, based on limited data, Edwards (2001) is highly skeptical of dollarization.

TABLE 2  
WORLDWIDE MONETARY PERFORMANCE

	Developed Countries with Central Banking	Developing Countries with Central Banking	Countries with Other Monetary Systems <sup>b</sup>
Average annual inflation (consumer prices), 1971-98			
Mean (%)	8.9	79.7	11.8
Median (%)	5.4	10.8	8.7
Standard deviation (%)	19.7	702.4	17.4
Countries ever having a system that suffered inflation over 20% a year, 1971-2000	16% (8 of 36)	59% (86 of 145)	13% (8 of 64)
Ever had inflation over 100% a year, 1971-2000	0% (0 of 36)	22% (32 of 145)	0% (0 of 64)
IMF member countries with exchange controls on current-account transactions, end of 1999	18% (6 of 34)	67% (91 of 136)	20% (3 of 15)
Exchange rate depreciated against U.S. dollar or official anchor currency, start of 1971 or date of first issue versus end of 2000	72% <sup>a</sup> (26 of 36)	94% (133 of 141)	3% (1 of 31)
Average annual GNP growth/person, 1971-98			
Mean (%)	2.1	1.1	1.8
Median (%)	2.3	1.6	1.9
Standard deviation (%)	6.1	7.0	6.6

<sup>a</sup>Includes the U.S. dollar, which depreciated against gold.

<sup>b</sup>Excludes former Soviet republics that briefly used the Russian ruble in 1991 and 1992 before issuing their own currencies.

NOTE: The source for data of GNP growth and inflation has some important omissions. Results are not weighted by GNP.

SOURCES: *Financial Times*, December 30-31, 2000 (2000 exchange rates); International Monetary Fund (2000: 982-88) (current-account controls); World Bank (2000) (other data).

However, a consensus seems to be building that *most* developing countries should have floating exchange rates and inflation targeting. Fixed exchange rates are said to make sense only for quite small countries (which in practice often have little scope for economic adjustment through exchange-rate movements), countries where the credibility of monetary policy is very low, or countries where the political desire to avoid devaluations is unusually high (Council on Foreign Relations 1999: part IV, recommendation 4).

The emerging consensus ignores that even among developed countries, few have been able to make floating rates work really well. By international standards, the French franc or even the Italian lira performed acceptably, but they were clearly less credible than the German mark. They could not equal or surpass its credibility; the best they could hope to do was borrow it. That is why Western Europe tried so many variations of pegged exchange rates between the breakup of the Bretton Woods system and the advent of the euro, despite multiple speculative attacks and devaluations. Modeling many features of the European Central Bank after the Bundesbank and locating it in Frankfurt are attempts to make the euro as credible as the mark was. Given that France, Italy, and other countries have given up independent monetary policy in part because of problems with credibility, it makes no sense for economists to advise countries that start with far less credibility to have independent monetary policies.

Developing countries have never tried floating on a wide scale. Many so-called floating currencies are in reality loosely pegged, though without any clearly defined limits that would act as targets for speculative attacks. Chile since 1990 and Mexico since mid-1995 are cases where floating exchange rates have so far been practiced with some success, because inflation targets have been used as an anchor; the jury is still out on Brazil, which has had a floating rate since its currency crisis of January 1999 (Blejer et al. 2000, Mishkin 2000). However, there are other cases where lack of credibility under floating exchange rates has led to currency panics and contributed to depressions, such as Indonesia in 1998 and Ecuador in 1999. The record of floating rates in developing countries is at best mixed.

Even if other developing countries can perform as well as Chile and Mexico have so far under floating rates, how well would that really be? Long-term loans at fixed rates of interest are unavailable in those countries, and business loans in Mexico often bear higher rates of interest than Americans pay on credit card debt. Developing countries that adopt inflation targeting must perform well for 10 or 15 years to achieve credibility. Even then, their currencies are highly unlikely to be as credible as the major international currencies—the

U.S. dollar, the euro, and to a lesser extent the Japanese yen. These considerations suggest that for developing countries, floating is a waste of time and effort.

Developing countries can best achieve price stability by establishing fixed exchange rates with a widely accepted currency issued by a central bank committed to price stability. Because a truly fixed exchange rate is incompatible with discretionary monetary policy, a country that wants to maintain a fixed exchange rate with another currency should not have a national central bank. The types of monetary systems that historically have been able to avoid devaluations have allowed little or no discretion in monetary policy (Schuler 1999: 86). Instead, they have imposed rigid rules, as in currency board systems, or removed responsibility from the national government to maintain the exchange rate, as in dollarized systems and free banking systems.

Orthodox currency boards have maintained fixed rates with their anchor currency by holding foreign reserves equal to 100 percent or slightly more of their monetary liabilities and expanding or contracting their liabilities automatically as demand to convert foreign currency into or out of local currency occurs. Currency board-like systems such as that of Argentina are potentially less reliable because they have elements of discretionary monetary policy that may conflict with their exchange-rate targets, but they have still performed better than the central banking systems they have replaced (Hanke 2000).

Officially dollarized systems, such as exist in Panama, Ecuador (since 2000), and El Salvador (since the start of 2001) have maintained fixed exchange rates by adopting foreign currency as the only or main local legal tender, so that there is no benefit to be had from devaluing the “local” currency. The main disadvantage of dollarization compared to a currency board is that dollarization involves a loss of seigniorage. The International Monetary Stability Act (2001), introduced by Representative Paul Ryan, proposes to address the issue insofar as it concerns the United States by allowing the U.S. Treasury Department to offer rebates of seigniorage to countries that officially adopt the U.S. dollar.

Belonging to a multinational central bank, such as the European Central Bank, similarly means adopting as local currency a currency that is not issued by an organ of the national government. The exchange rate is fixed within the single-currency zone, though the rate is pegged or floating with respect to other currencies. New regional currencies not based on the major currencies, such as a floating Mercosur currency for South America, are highly unlikely to be as credible as the major international currencies.

In developing countries, the case is therefore strong for a single currency regime: fixed exchange rates. Developing countries can establish fixed rates by establishing orthodox currency boards linked to major international currencies; officially using one of those currencies (dollarization or euroization); or joining the European Central Bank, which is currently the only multinational central bank that issues a major international currency. Each way of achieving fixed exchange rates has particular advantages and disadvantages, but the differences among them are less important than their common differences with floating exchange rates maintained by national central banks.<sup>7</sup>

There are both political and economic objections to giving up national central banks. The main political argument is that a country loses monetary sovereignty. We have answered that argument elsewhere in detail (Schuler 2001). Here it is sufficient to note that 55 to 70 percent of U.S. dollar notes and 30 to 40 percent of German mark notes are estimated to circulate outside their countries of origin (Porter and Judson 1996: 899; Seitz 1995), and that an IMF survey of unofficial dollarization classified 18 countries as “highly dollarized” and another 34 countries as “moderately dollarized” (Baliño, Bennett, and Borensztein 1999: 2–3). In effect, the citizens of many countries have already voted with their wallets against their national currencies. The main economic argument against giving up a national central bank is that the discretionary power a central bank has can make the economy grow faster or be more stable faster than would otherwise be the case. The argument is purely theoretical. There is no systematic evidence that developing countries with central banks grow faster, have milder recessions, or have more stable banking systems than countries that lack central banks; if anything, the reverse is the case (see the studies cited above in connection with Table 2 and Frydell 1999).

An important feature of truly fixed exchange rate systems is that they eliminate the perceived need for exchange controls. Exchange controls exist mainly as a way of propping up demand for the national currency, and thereby increasing its seigniorage. If monetary policy is completely rule-bound, or if it is not made by the national government, the government does not control the supply of the currency, so

<sup>7</sup>A few countries, mostly quite small, have successfully maintained pegged rates for long periods under central banking with few or no exchange controls; examples are the Netherlands Antilles and the United Arab Emirates. The central banks in some of these countries operate almost as imitation currency boards. The countries gain no discernable advantage from preserving their national central banks other than a small amount of seigniorage, but the disadvantages are also small.

exchange controls produce little or no additional seigniorage. Despite the worldwide reduction in exchange controls that has been happening since about 1950, most developing countries with central banking still have exchange controls. Developing countries with currency boards or dollarization, in contrast, have few or no controls; their citizens have the freedom to use whichever among the world's currencies best suits their needs.

Achieving price stability is the best thing a central bank can do to promote economic growth and financial stability. An implication is that the appropriate monetary policy for the major international currencies is close to the appropriate monetary policy for the developing countries that should use the major currencies as anchors.<sup>8</sup>

If developed countries should not try to fine-tune economic growth through monetary policy, neither should developing countries. The economic case for floating exchange rates is therefore weak in the great majority of countries, because independent monetary policy there is unlikely to have high credibility anytime soon. A related implication is that global economic and financial links make it increasingly important for the Federal Reserve and other central banks today to recognize the international influences affecting the pursuit of price stability (Keleher 2000).

## The Future of Monetary Policy in the New Economy

So far we have focused on monetary policy as it exists and as it could be improved under current arrangements. In the years to come, technological developments may make monetary arrangements much different than they are today. Electronic transfers through debit cards and stored-value cards are increasingly replacing cash and checks in small payments by consumers. It is possible that a generation hence, notes (paper money) and coins will cease being used in developed countries and in the most advanced developing countries (see Aucoin 1996 and Dorn 1997). One reason people might use electronic transfers rather than notes and coins even for small payments is that deposits and stored-valued cards will earn interest, whereas notes and coins will not. It now appears possible to make electronic transfers as

<sup>8</sup>In addition to gains from greater monetary stability, nations that adopt an internationally used currency reduce trading costs with others using the currency. Frankel and Rose (2000) suggest that a common currency makes trade between two countries within a common currency zone approximately three times greater than it would be with separate currencies, other things being equal.

anonymous as cash transactions through the use of encryption technology; that would eliminate one of the biggest advantages of cash compared to electronic transfers.

If governments are willing to allow electronic money to evolve in a fairly unhindered fashion, especially in the most financially advanced countries, central banks will become less and less important. Central bank-issued notes and coins will lose their importance in small payments. It is conceivable, though less likely, that central bank money will also lose its importance in the payments system as the medium of final settlement if superior private-sector substitutes can be developed. Central bank money will then be used only to satisfy demands by the government to be paid in its own currency. The diminished importance of central banks would make the idea of abolishing them seem much less consequential. We would then have a 21st century version of the free banking systems that were widespread in the 19th and early 20th centuries.

Changes that result in greater competition to central bank money should not be resisted. Central banks have been at the heart of the great majority of monetary disturbances around the world from the Great Depression to the East Asian and other recent currency crises. We should be concerned with how to achieve monetary stability rather than with preserving particular institutions, especially institutions that by and large have failed to provide stability.<sup>9</sup> If the private sector can provide monetary stability more effectively than central banks, it should be allowed to do so.

## Conclusion

Monetary stability is a crucial ingredient of the recipe for growth and prosperity. Historically, monetary disturbances in the United States have led to economic instability and, in extreme cases, have reduced the living standard of Americans. Monetary instability continues to plague the people of developing countries. In recent years, a consensus has developed that price stability is the proper goal of

<sup>9</sup>As former Federal Reserve chairman Paul Volcker (1995: vii–viii) has written, “We sometimes forget that central banking, as we know it today, is, in fact, largely an invention of the past hundred years or so, even though a few central banks can trace their ancestry back to the early nineteenth century or before. It is a sobering fact that the prominence of central banks in this century has coincided with a general tendency towards more inflation, not less. By and large, if the overriding objective is price stability, we did better with the nineteenth-century gold standard and passive central banks, with currency boards, or even with ‘free banking.’ The truly unique power of a central bank, after all, is the power to create money, and the power to create is the power to destroy.”

monetary policy. The Federal Reserve has done a good job of pursuing price stability during the era of price level targeting. The United States can help promote sound money both at home and abroad by institutionalizing the Fed's focus on price stability and encouraging other countries to import price stability.

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