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MILTON FRIEDMAN AND THE CASE FOR FLEXIBLE EXCHANGE RATES AND MONETARY RULES

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Abstract

Milton Friedman was a strong proponent of flexible exchange rates accompanied by a domestic monetary rule. He believed that such a combination would deliver superior economic performance and would also be more consistent with democratic principles than a regime based on fixed exchange rates and discretionary monetary policy. John Taylor's recent proposal of a rules-based international monetary system — based on flexible exchange rates and a Taylor rule for each country - is very much in that spirit and represents a modern rendition of Friedman's views. Under both the Friedman and Taylor proposals, instead of policy coordination among countries there would be policy harmonization.

JEL-classifications: F02, F33, E52

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Managed currency without definite, stable, legislative rules is one of the most dangerous forms of "planning." A free enterprise economy can function only within a legal framework of rules; and no part of that framework is more important than the rules which define the monetary system. In the past those rules have been empty and inadequate; but there is no tolerable solution to be found in resort to the wisdom of "authorities." No liberal can contemplate with equanimity the prospect of an economy in which every investment and business venture is largely a speculation in the future actions of the Federal Reserve Board.

Henry Simons (1935, p. 558)

1. Introduction

The institutional arrangements that constitute the global monetary system have long occupied center stage of discussions in international economics. For many years, the discussions focused on the choice of exchange-rate regime, especially the relative merits of fixed and floating exchange rates. Beginning in the 1980s, however, the focus of the discussions shifted from arrangements among countries to the appropriate framework for national monetary policies. With the widespread acceptance of monetary rules by the majority of the profession, the debate has shifted to the evaluation of alternate rules -- most notably, the comparison between those that involve a fixed exchange-rate regime and those that involve only domestic goals. Our objective is to contribute to this debate.

We pivot our discussion around the work of Milton Friedman, whose views on the viability of alternative exchange-rate regimes and on national monetary rules in many ways presaged modern thinking on these issues. In common with much of modern thinking, Friedman favored a combination of flexible exchange rates and a domestic monetary rule. As we will demonstrate, two key factors underpinned Friedman's views. First, in common with John Taylor (2017), Friedman believed that this particular combination would deliver superior economic performance, helping to avoid the major policy mistakes of the past produced by fixed-exchange-rate regimes cum discretionary monetary policies. Second, Friedman also thought that the combination of flexible exchange rates and a domestic monetary rule was more

consistent with democratic principles than a regime based on fixed exchange rates and discretionary monetary policy.¹

The remainder of this paper is structured as follows. First, we provide an overview of the three major international fixed-exchange-rate systems that existed in the 20th century -- the classical gold standard of 1880-1913, the interwar-gold exchange standard of 1924-1936, and the Bretton Woods System of 1944-1973. We show that Friedman concluded that the classical gold standard, whatever its virtues - - and Friedman thought that its virtues had been exaggerated by its adherents -- would not be sustainable in the world of the mid-20th century and after. The circumstances that rendered the gold standard unsustainable, he believed, also applied to other fixed-exchange-rate arrangements. Next, we discuss Friedman's views on flexible exchange rates and the reasons underpinning his advocacy of a domestic monetary-policy rule. We then consider the case for a Taylor rule.

2. Fixed exchange-rate regimes

The basic case for fixed exchange rates is that fixed rates eliminate exchange-rate uncertainty, which is alleged to impede international trade and investment.² Monetary historians have argued that the exchange-rate stability of the period of the classical gold standard helped create a global trade boom and increased investors' confidence in far-away places, giving rise to unprecedented levels of capital exports (Gallarotti, 1995; Morys, 2014).

2.1 Classical Gold Standard, 1880-1913

The classical gold standard was a rules-based monetary-policy regime. The basic rule for each monetary authority was the commitment to convert its domestic (paper) currency into a fixed quantity of gold at a fixed nominal price. This rule

¹ Friedman (1953; 1960), of course, recognized that, in the absence of controls on capital flows, the stance of domestic monetary policy would be determined by the fixed-exchange-rate objective, especially for smaller countries. During the 1950s and 1960s, most countries maintained controls on capital movements, providing scope for nationally-oriented monetary policies in the presence of fixed exchange rates.

² For a contrary argument, see Bailey, Tavlas and Ulan (1987).

required the subordination of domestic policy considerations to the external, fixed-gold-price, constraint.

Under the gold standard, if a country faced a balance-of-payments deficit -- for example, capital-account inflows that were not sufficient to finance a current-account deficit -- it needed an adjustment mechanism to reverse the resulting outflow of gold (O'Rourke and Taylor, 2013, p. 172). The gold-standard mechanism was essentially automatic. It included a reduction of the domestic money supply -- since the money stock was tied directly to the quantity of domestic gold holdings -- and the consequent reduction of prices of domestic goods and services relative to those of foreign goods and services. The resulting depreciation of the real exchange rate would help restore external balance.

Modern monetary historians, citing the durability of the system, have a benign view of the workings of the classical gold standard, at least for the countries at the system's core³ (Eichengreen, 1992; O'Rourke and Taylor, 2013; Bordo and Schenk, 2017). Friedman's view was more nuanced. He believed that if an automatic gold standard were feasible, "it would provide an excellent solution to the liberal's dilemma: a stable monetary framework without the danger of the irresponsible exercise of monetary powers" (Friedman, 1962a, pp. 40-41). Nevertheless, he noted that "even during the so-called great days of the gold standard in the nineteenth century, when the Bank of England was supposedly running the gold standard skilfully ... it was a highly managed system" (Friedman, 1962a, p. 42). Underlying this circumstance was the fact that, historically, an automatic commodity system always tended to develop toward a mixed system, containing, in addition to the monetary commodity, fiduciary elements, such as bank notes and deposits, and government notes: "And once fiduciary elements have been introduced, it has proved difficult to avoid government control over them" (Friedman, 1962a, p. 41). For example, Friedman estimated that gold coins and gold certificates comprised only between ten and twenty per cent of the money stock in the United States during the late-19th century (Friedman, 1962a, p. 42).

³ The core countries were Belgium, France, Germany, the Netherlands, the United Kingdom, and the United States.

Friedman's assessment of the performance of the gold standard in the United States was as follows: "In retrospect, the system may seem to us to have worked reasonably well. To Americans of the time, it clearly did not" (Friedman, 1962a, p. 42). As an example, he pointed out that the "agitation" to monetize silver in the 1880s and 1890s, culminating in William Jennings Byran's "Cross-of-Gold" speech during the 1896 Presidential election "was one sign of dissatisfaction. In turn, the agitation was largely responsible for the [economically] depressed years of the early-1890s.... [The agitation] led to a flight from the dollar and a capital outflow that forced deflation at home" (Friedman, 1962a, pp. 42-43).

More importantly, Friedman did not believe that the gold standard, even if fully automatic, would be viable in the world of the mid-20th century and after. To the extent that the gold standard operated as intended, it did so because of special circumstances. First, the late-19th and early-20th centuries comprised a world in which "the countries of the Western world placed much heavier emphasis on freedom from government interference at home ... than on domestic stability; thus they were willing to allow domestic economic policy to be dominated by the requirements of fixed exchange rates" (Friedman, 1953, pp. 166-67). Second, wages and prices were relatively flexible during the gold-standard period (Friedman, 1953, pp. 172-73). As a result, the adjustment towards balance-of-payment equilibrium could take place with relatively-minor effects on domestic output and employment.

The world of the mid-20th century, Friedman observed, was very different from that of the gold-standard period. The Great Depression of 1929 to 1933 encouraged the view that a capitalist economy is inherently unstable and that it is the government's responsibility to stabilize the economy.⁴ As a result, the role of government in economic affairs expanded greatly, and the pursuit of full employment became the over-riding goal of economic policy. The spread of

⁴ The view that a capitalist economy is inherently unstable is typically traced back to Keynes's *General Theory*. In fact, Keynes put forward that view earlier -- in 1931 during his participation at a conference at the University of Chicago. In response to a question whether depressions are inevitable in a capitalist economy, Keynes replied: "I should agree that the capitalist society as we now run it is essentially unstable. The question in my mind is whether one could preserve the stability by the injection of a moderate degree of management; whether in practice it is beyond our power to do this, and that we will have to have some further plan of control" (Harris Foundation, 1931, p. 93).

unionization led to a more rigid wage and price structure, increasing the unemployment costs of deflationary policies. In these circumstances, Friedman believed that governments of democratic nations would no longer be willing to submit themselves to what he called “the harsh discipline of the gold standard” (Friedman, 1953, p. 179).⁵

2.2 Interwar Gold-Exchange Standard, 1924-36⁶

The classical gold standard ended with the outbreak of World War I. In light of policy makers’ high regard for the classical gold standard, after the war, policy makers from the United Kingdom, France, the United States, and other countries, sought to resurrect it, but failed to realize that its basic underpinnings were no longer present in the changed circumstances of the interwar period (Morys, 2014, p. 730).

Like its pre-war predecessor, the interwar gold standard was based on a convertibility rule, but the rule was more susceptible to evasion. One key difference between the classical gold-standard period and the interwar gold-standard period was the change in domestic environments in which the policy authorities operated. As Friedman (1953) inferred, after the war the spread of unionization contributed to reduced wage and price flexibility, increasing the output costs of deflationary policies. The extension of voting rights and the growth of organized labor greatly loosened governments’ commitment to subordinate domestic economic objectives to the fixed exchange-rate rule. This circumstance can be clearly seen in the pivotal case of the United Kingdom, the center country in the pre-war system. As Crafts (2014, p. 717) reported, the electorate in the 1910 election numbered 7.7 million; in the 1929 election, when the Labor Party won 47 per cent of the seats in Parliament, the electorate numbered 29 million; the extension of voting rights made political parties increasingly sensitive to domestic economic conditions.

⁵ Friedman (1962a, p. 40) was also critical of commodity standards because of the real resources required to add to the stock of money: “People must work hard to dig gold out of the ground in South Africa -- in order to rebury it in Fort Knox or some similar place.”

⁶ Germany and Sweden returned to gold in 1924, and the United Kingdom returned to gold in 1925. With the departure of France, the last major country to cling to the gold standard, from gold in October 1936, the interwar gold standard came to an end.

Concerned that the existing global gold stock would produce deflation, policy makers actively encouraged the use of key currencies -- the pound sterling, the U.S. dollar, and the French franc -- as international reserves (Morys, 2014, p. 731), loosening the link between gold flows and domestic monetary conditions. Friedman's (1953, p. 171) assessment of the interwar gold standard was as follows.

Already during the 1920s, the United States ... refused to allow its [balance-of-payments] surplus, which took the form of gold imports, to raise domestic prices in the way the supposed rules of the gold standard demanded; instead, it 'sterilized' gold imports. Especially after the Great Depression completed the elevation of full employment to the primary goal of economic policy, nations have been unwilling to allow deficits to exert any deflationary effect (Friedman, 1953, p. 171).

In light of the above factors, considerable central-bank coordination was required to maintain the system (Bordo and Schenk, 2017, p. 221). Much of that cooperation centered on the personal relationships among Montagu Norman, Governor of the Bank of England, Benjamin Strong, Governor of the Federal Reserve Bank of New York, Hjalmar Schacht, President of the Reichsbank, and Emile Moreau, Governor of the Banque de France (Ahamed, 2009; James, 2016; Bordo and Schenk, 2017). Bordo and Schenk (2017, p. 215) argued that the coordination of monetary policies "contributed to the interwar gold standard's problems by propping up a flawed system and possibly even helping to fuel the 1920s asset price boom." The cooperation ultimately failed, and the gold-exchange standard collapsed. Some historians (Temin, 1984; Eichengreen, 1992) argued that the gold-standard constraint caused the Great Depression because national monetary authorities were not allowed to follow lender-of-last-resort policies. Friedman and Schwartz (1963) pointed out that the gold standard's fixed-exchange-rate served as the key channel through which a decline in the U.S. money supply, a result of the Fed's tightening in 1928 and 1929 -- aimed at stemming the boom in stock prices -- was transmitted to the rest of the world. Friedman's assessment of the cooperation among the central bankers was highly critical:

The impression left with me ... is that Norman and Schacht were contemptuous both of the masses - of "vulgar" democracy - and of the classes - of the, to them, equally vulgar plutocracy. They viewed themselves as exercising control in the interests of both groups but free from the pressures of either. In Norman's view, if the major central bankers of the world would only cooperate with one another - and he had in mind not only himself and Schacht but also Moreau and Benjamin Strong - they could jointly wield enough power to control the basic economic destinies of the Western world in accordance with rational ends and objectives rather than with the irrational processes of either parliamentary democracy or laissez-faire capitalism. Though of course stated in obviously benevolent terms of doing the "right thing" and avoiding distrust and uncertainty, the implicit doctrine is clearly thoroughly dictatorial and totalitarian (Friedman, 1962b, pp. 181-82).

2.3 Bretton-Woods System, 1944-73

The Bretton-Woods agreement of 1944 re-established a system of pegged exchange rates. The gold convertibility rule was preserved with the U.S. Treasury, which entered the Bretton-Woods period holding three-fourths of the global monetary gold stock, pegging the price of the dollar at \$ 35 per ounce of gold by freely buying and selling gold to foreign official bodies at that price. Other countries intervened to keep their currencies within one per cent of parity against the dollar by buying and selling dollars (Bordo, 1993, pp. 342-49). Convertibility of major European currencies on current-account transactions was not put in place until the end of 1958.⁷ Under certain conditions, countries had access to IMF credit to cover temporary balance-of-payments deficits. A key objective of the system was to create a framework for cooperation and coordination underpinned by credible rules (Giovannini, 1993).

⁷ The Japanese yen became convertible on current account in 1964.

Two key innovations were introduced to make the system durable. First, controls on short-term capital flows were permitted to provide domestic monetary-policy sovereignty. Second, the system was an adjustable peg, meaning that occasional, discrete changes in exchange rates were permitted to help attain equilibrium in countries' balance of payments and to discourage destabilizing speculation in foreign exchange markets. Parities could be changed with IMF approval if a member faced a "fundamental disequilibrium" on its external accounts."⁸

During the heyday of Bretton Woods, Friedman accurately presaged both the frailty of the capital controls and the destabilizing properties of the fixed-but-adjustable regime. Regarding capital controls, he stated: "there are political and administrative limits to the extent to which it is possible to impose and enforce such controls. These limits are narrower in some countries than in others, but they are present in all. Given sufficient incentive to do so, ways will be found to evade or avoid the controls" (Friedman, 1953, p. 169). And with regard to the durability of the adjustable-peg system, he argued: "this system practically insures the maximum of destabilizing speculation. Because the exchange rate is changed infrequently and only to meet substantial difficulties, a change tends to come well after the onset of difficulty, to be postponed as long as possible, and to be made only after substantial pressure on the exchange rate has accumulated. In consequence, there is seldom any doubt about the direction in which exchange rate will be changed" (Friedman, 1953, p. 164).

And so it turned out. The Bretton Woods years became increasingly characterized by the evasion of capital controls, and the credibility of the system was undermined by a series of speculative attacks against non-dollar currencies, and repeated parity adjustments against the dollar throughout the 1950s and 1960s. By the late-1960s, the attacks had spread to the U.S. dollar, the center of the system, as the U.S. undertook inflationary policies to finance the Vietnam War and the Great Society program of the Johnson Administration (Bordo and Schenk, 2017, p. 224).

⁸ The term 'fundamental equilibrium' was never defined. The Fund could not disapprove a change in parity, however, if the change was less than 10 per cent (Bordo, 1993, p. 35).

Following a series of measures in the late-1960s and early-1970s that loosened the link between the dollar and gold, the effect of which was essentially to demonetize gold, and several *ad hoc* arrangements that aimed to sustain the system, most countries abandoned their dollar pegs in the early-1970s, beginning with the floating of sterling in June 1972, followed by the floating of the deutsche mark and yen in early 1973.

3. Flexible exchange rates and domestic rules

As a classical liberal, Friedman (1962a, pp. 38-39) was fearful of concentrated power. He was suspicious of assigning any functions that could be performed through the market to government, because doing so would substitute coercion for voluntary cooperation and because, by giving the government an increased role, it would threaten freedom in other areas. Power, he believed, needed to be dispersed. But the need of dispersal of power raised an especially difficult problem in the field of money. Since money can be a powerful force for controlling and shaping the economy, Friedman believed that the government needed to have some responsibility in monetary matters. Too much control over money, however, could be dangerous; Friedman (1962a, p. 39) quoted Lenin's famous dictum that the most effective way to destroy a society is to destroy its money.

In Friedman's view, one of the great attractions of a floating-exchange-rate system is that it decentralizes policy-making to the national level, allowing each country's policy makers to take responsibility for managing their own economy. Floating exchange rates, he argued, would help insulate the domestic economy from external shocks and would provide national policy authorities the ability to satisfy domestic goals (Friedman, 1953). Consequently, national authorities could be held democratically accountable to their citizens (Friedman, 1962a).⁹ Flexible exchange rates, he believed, would be stable exchange rates provided that the underlying economic structure, including policy structure, was stable.

⁹ Friedman's argument that a floating-exchange-rate system allows national policy makers to be democratically accountable is almost always overlooked in the literature on exchange-rate regimes. A major exception is Frankel (2015, p. 16).

Two key arguments underpinned Friedman's belief that flexible exchange rates need to be accompanied by domestic monetary rules. First, a system based on discretion would be inconsistent with democratic principles: "Any system which gives so much power and so much discretion to a few men ... is a bad system to believers in freedom just because it gives a few men such power without any effective check by the body politic ... this is *the key political argument*" against discretionary monetary policy¹⁰ (italics supplied, 1962a, p. 50).

Second, the power given to monetary authorities under a discretionary regime subjects policy actions to political pressures and to the accidents of personality and fads in economic thinking. "This," he argued (Friedman, 1962a, p. 50) "is *the key technical argument*" against such discretion (italics supplied). With regard to susceptibility of central banks to political pressures, Friedman (1967, p.277) believed that even supposedly-independent central banks would be subjected to such pressures: "truly independent central banks are fair-weather institutions. When there is any serious conflict between the policies they favor and policies strongly favored by the central political authorities -- generally reflected through Treasury policy -- the political authorities have inevitably had their way, though at times only after some delay." For this reason, Friedman favored monetary rules embedded in legislation -- so that the central bankers could be held accountable for their actions.

With regard to personal attributes, Friedman's research during the 1950s, especially that with Anna Schwartz, culminating in their *A Monetary History of the United States*, convinced him that such attributes, including ethnic prejudices, had contributed to the Great Depression in two ways:¹¹ (1) Fed officials, aiming to stem speculation in the stock market, had inappropriately tightened monetary policy in 1928 and 1929, thereby initiating a decline in economic activity. (2) In late 1930, a private bank called the Bank of United States, with over four hundred thousand depositors -- more than any other bank in the country -- found itself in trouble as depositors rushed to convert their deposits into currency. It was a sound bank; its troubles stemmed from rumours that produced a run on it. Friedman and Schwartz

¹⁰ In the above quotation, Friedman referred to the case of an independent central bank, operating under discretion, that was not subject to legislative rules.

¹¹ Lothian and Tavlas (2017) provide a detailed discussion of Friedman and Schwartz's research.

believed that in a financial crisis the monetary authorities should follow a well-established rule: if a bank was sound, but was facing a run on deposits, the monetary authorities needed to lend freely to the bank in order to quench the panic. New York State banking officials, however, refused to provide liquidity to the financial institution, and, in December 1930, the bank was forced to close. That single event dramatically changed the character of the downturn, converting a rather normal cyclical contraction into what has become known as the Great Depression.

Friedman and Schwartz (1963) asserted that there were two reasons for this turn of events. First, the Bank of United States was the largest commercial bank ever to have failed in the U.S. until that time. Second, although it was an ordinary commercial bank, its name had led many at home and abroad to regard it as an official bank. Hence, its failure undermined confidence more than the fall of a bank with a less distinctive name. They also hinted that anti-Semitism may have played a role in the failure to provide liquidity to the bank; its stakeholders and officers were mainly Jewish. Subsequently, Friedman (1974) confirmed that he believed that anti-Semitism among some New York state officials played a role in the closing of the bank.

4. What kind of rule?

Friedman's research led him to favor a rule under which the M2 (currency plus demand and time deposits) measure of money supply would grow in the range of three to five per cent annually. That research included empirical estimations showing that the demand for M2 was stable (Friedman, 1959), a key requirement for effective monetary targeting. In proposing the rule, he noted: "I do not regard my particular proposal as a be-all and end-all of monetary management, as a rule which is somehow to be written in tablets of gold and enshrined for all future time I would hope that ... we might be able to devise still better rules" (Friedman, 1962a, p. 55).¹²

¹² Beginning in the 1970s, most empirical money-demand functions exhibited instability in light of financial innovation and deregulation of the financial system. In the 1980s Friedman changed his

During the 1980s, a consensus emerged within the profession about the superiority of a domestic monetary rule.¹³ Several contributions led to this consensus. First, Friedman (1968) and Phelps (1968) showed that, analytically, the steady-state unemployment rate is not related to the steady-state inflation rate when the long-run Phillips Curve relationship is augmented with a variable representing the expected inflation rate. An implication of the natural-rate hypothesis is that the best that macroeconomic policy can hope to achieve is price stability in the medium term. Second, Kydland and Prescott (1977) showed that attempts to re-optimize (*i.e.*, renege on previous commitments) by authorities under a discretionary regime are likely to lead to worse outcomes than those in which the authorities are constrained to follow through on previous commitments.

The experience of the past forty years has confirmed the superiority of domestic rules-based regimes. The decade of the 1970s featured discretionary policies accompanied by high unemployment in association with rising inflation. The period from the mid-1980s until the early-2000s, under which monetary policy was well-characterized by a Taylor rule, produced the Great Moderation of low unemployment and low inflation.

The Taylor rule, under which the monetary authorities target the short-term policy rate so that it responds to divergences of actual inflation rates from target inflation rates, and to deviations of actual gross domestic product (GDP) from potential GDP, and Friedman's money-supply growth rule share several important attributes.

1. Both rules are simple and easy to understand. Therefore, they make monetary policy transparent and predictable.
2. Both rules prescribe a path for a policy instrument. For Friedman, the path of the money supply is set exogenously -- it does not depend on

preferred aggregate from M2 to M1 (currency plus demand deposits). Toward the latter part of his life, he expressed admiration of the conduct of monetary policy during the period from the mid-1980s to the late-1990s, a period during which the Fed's policy was well-represented by the Taylor rule. On these issues, see Nelson (2008).

¹³ Dorn (2017) provided a thorough analysis of the case for monetary rules.

economic conditions. For Taylor, the path of the policy interest rate is endogenous -- it responds to inflation and the output gap.

3. In marked contrast to discretion, both the Friedman rule and the original version of the Taylor rule exclude reliance on perceptions and interpretations about future economic variables to shape the conduct of monetary policy. By excluding such perceptions and interpretations about future variables from policy formation, both rules further limit discretion.
4. By limiting the amount of discretion, both rules also contain the potential political influence that can be exerted on monetary authorities;¹⁴ it is easier to influence policy formation if the monetary authorities exercise judgment than it is if they are bound by a rule.
5. Both rules limit the possibility that monetary policy may fall prey to the influence of fads in economic thinking.
6. Both rules draw a clear separation of monetary policy from fiscal policy, thus further insulating the monetary authorities from political pressures.
7. Both rules clearly place price stability at the heart of monetary policy. Friedman (1960, p. 91) specifically proposed his rule for the following reason: “a rate of increase [of the money supply] of 3 to 5 percent per year might be expected to correspond with a roughly stable price level.”

The Taylor rule explicitly targets a low and stable inflation rate.

In addition, both Friedman and Taylor specified that their respective rules should be embodied in legislation in order to ensure accountability of the monetary authorities in line with democratic principles.

In today’s world, the Taylor rule, which has been shown to be robust to widely different views about how monetary policy works (Taylor and Williams, 2011), would help produce the goals that Friedman wanted to achieve while not having to confront the instability exhibited by monetary aggregates. As Taylor (2017) argued, an international setting, in which the major countries followed Taylor rules geared to

¹⁴ Friedman (1960, p. 85) argued that reliance on discretion leads to “continual exposure of the authorities to political and economic pressures.” Taylor (2012, p. 1024) argued that “[rules] help policymakers avoid pressures from special interest groups and instead take actions consistent with long-run goals.”

their specific setting, would provide harmonization of policies and optimal economic conditions domestically.

While we see substantial merits in a Taylor-type rule, our view is tempered with the following cautionary observations. First, the Taylor rule has been formulated so that it operates in normal circumstances in which the natural rate of interest is positive. What happens when normal circumstances do not apply and the natural rate is close to zero (as it apparently was in recent years)? Correspondingly, how is harmonization measured when interest rates are near the zero bound? The point is that, when interest rates are near the zero bound, even if the authorities aim to follow a Taylor rule they will be unable to do so. And harmonization of policies will therefore not be measurable.¹⁵ Second, in periods of crises, such as during 2007-08, monetary authorities will be tempted to resort to unorthodox policies, deviating sharply from rules-based policies, as evidenced during and after that crisis. In the late-1980s and the 1990s, by contrast, the Taylor rule characterized the Fed's behavior well because there was no conflict between its domestic objectives and the outcome that would prevail through the rule. These episodes lead to the question: Under a rules-based policy, when the going gets tough will the authorities stick to the rule? Third, Taylor, as mentioned, suggests that each country specify its own, individualized, Taylor-type rule. What happens if some countries (*e.g.*, China) include an exchange-rate objective in their policy rule while others (*e.g.*, the United States) do not? Will the differentiated rules be consistent with harmonization of policies? Or will they lead to accusations of currency manipulation?

To conclude, the Taylor rule has proved to be both a practical and preferable alternative to Friedman's constant money-growth rule. If embedded in legislation, and if can address the above-mentioned issues, the Taylor rule would be a worthy successor to Friedman's search for a rule that simultaneously achieves full employment, price stability, and democratic accountability.

¹⁵ For example, how is harmonization measured when quantitative-easing operations have increased central banks' balance sheets by vastly different percentages?

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