
Monetary Policy in a Fiat World

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*Keynote Paper Presented at
The Second International Conference of
The Institute for Monetary and Economic Studies
Bank of Japan
Tokyo, May 29-31, 1985*

In the past decade or so, there has been a burst of scholarly interest in various aspects of monetary reform — not the conduct of current monetary policy, which for decades has been the object of active scholarly work, but the institutional structure of the monetary system. During the same period, there has been a burst of innovation in the market place that has produced new financial instruments and institutions, as well as pressure in country after country for the deregulation of the banking system.

Both bursts of activity have been partly fostered by internal forces. In the academy, the internal forces have included the emergence of the theory of public choice, the development of the rational expectations approach to the analysis of monetary matters, and renewed interest in so-called Austrian economics with its emphasis on invisible hand interpretations of the origin and development of economic institutions and its interpretation of the business cycle as largely reflecting the effect of non-neutral money. In the financial market place, the internal developments have primarily centered about the information revolution sparked by the computer and associated improvements in communications, especially the greatly expanded

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capacity for record keeping on a detailed and near instantaneous basis.

These internal developments, however, seem to me far less important in explaining the simultaneous bursts of activity than one key external development — the ultimate consequences of which are shrouded in uncertainty. That development is the emergence of a world monetary system that, I believe, is unprecedented: a system in which essentially every currency in the world is, directly or indirectly, on an irredeemable paper money standard — directly, if the exchange rate of the currency is flexible though possibly manipulated; indirectly, if the exchange rate is effectively fixed in terms of another fiat-based currency (e.g., since 1983, the Hong Kong dollar).

This system has emerged gradually since World War I. From then until 1971, much of the world was effectively on a dollar standard, while the United States, though ostensibly on a gold standard (except for a brief interval in 1933-34), was actually on a fiat standard combined with a government program for pegging the price of gold. The Bretton Woods agreement in the main simply ratified that situation, despite the lip service paid to the role of gold, and the provisions for changes in exchange rates.

In the United States, the gradual change in the monetary role of gold was marked by two major milestones: the prohibition of the private ownership of gold in 1933 and the elimination of gold reserve requirements for Federal Reserve deposits in 1965 and Federal Reserve notes in 1968. The end of Bretton Woods in 1971, which removed both the formal links to the dollar and the pretense that the U.S. was on a gold standard, simply set the seal on an ongoing process. The stocks of gold listed on the books of central banks are a relic of a bygone era, though a slim possibility remains that they will again become more than that at some future date. The removal by the U.S. in 1974 of the prohibition of private ownership of gold was, somewhat paradoxically, a tribute to the end of gold's monetary role.

The formal end of Bretton Woods was precipitated by an inflationary surge in the United States in the 1960s. In turn, the end of Bretton Woods helped to produce a continuation and acceleration of inflation in the 1970s and its spread to much of the rest of the world. Inflation and subsequent economic instability were the proximate stimuli for the burst of interest in monetary reform although the more fundamental reason for these developments was the momentous change in the world's monetary system of which the inflation was both a cause and a manifestation.

The irregular and highly variable inflation stimulated interest in monetary reform in several ways. In the first place, it brought into sharp focus the poor performance of the monetary authorities — reinforcing and giving greater credence to the conclusions about prior policy that various scholars had reached, including Anna Schwartz and myself in our *Monetary History*.

In the second place, the inflation produced a rise in nominal interest rates that

converted government control of interest rates in the United States via Regulation Q from a minor to a serious impediment to the effective clearing of credit markets. One response was the invention of money market mutual funds as a way to enable small savers to benefit from high market interest rates. The money market funds proved an entering wedge to financial innovation that forced the prompt relaxation and subsequent abandonment of control over the interest rates that banks could pay, as well as the loosening of other regulations that restricted the activities of banks and other financial institutions. Such deregulation as has occurred came too late and has been too limited to prevent a sharp reduction in the role of banks, as traditionally defined, in the U.S. financial system as a whole. Such banks now account for a far smaller share of the credit market than they did earlier. Their place has been taken by such “non-banks” as Sears Roebuck, American Express, Merrill Lynch, and so on.

The irregular inflation and high and variable interest rates produced similar developments in other countries. As a result, there is pressure for deregulation everywhere throughout the world.

It is worth stressing how little precedent there is for the present situation. Throughout recorded history, commodity money has been the rule. Money, in the sense of a medium of exchange and unit of account, has commonly consisted of a claim on a specified physical quantity of a designated commodity. We are accustomed to thinking of gold and silver as the predominant money metals, but in fact an enormous variety of commodities — from cowrie shells to feathers to large stones to tobacco to iron, as in Japan, — have at one time or another in one place or another served as the monetary medium.

The use of a particular commodity as money developed through its gradual acceptance in private transactions as the medium of exchange. Though the particular commodity used as money was not imposed by government, governments have invariably assumed a major role in the monetary system. Initially they simply engaged in coinage or its equivalent in order to profit from the associated seignorage. However, sovereigns have seldom been able to resist going beyond simple seignorage by debasing the currency, introducing base metal alloys in place of precious metals. Such episodes, though common and sometimes important, as in the Roman era, never prevented private individuals from continuing to use specie evaluated by weight rather than by count in their transactions.

In any event, so long as money was predominantly coin or bullion, very rapid inflation was simply not physically feasible, the extent of debasement being limited by the ratio of the value of a given physical quantity of the precious metal to the base metal used as alloy. As Forrest Capie points out in a fascinating recent paper, “Conditions in Which Hyperinflation Has Appeared”¹, the notorious Roman infla-

1. Paper prepared for Carnegie-Rochester Conference, April 1985.

tion went "from a base of 100 in 200 A.D. to 5000 by the end of the century — in other words a rate of between 3 and 4 percent per annum compound."² It took the invention and widespread use of paper money to make the kind of rapid inflations that have occurred in more recent times technically feasible.

Even so, as Forrest Capie notes, "from medieval times to the present day the examples of accelerating and very rapid inflation are few."³ Each of those examples is associated with departure from a specie standard: the paper money inflation of the U.S. Revolution, the French assignat episode, the suspension of specie payments by Great Britain during the Napoleonic wars and by the U.S. during the Civil War greenback period, and the much wider and more extensive departures during World War I and World War II.

In evaluating past experience with such episodes, Irving Fisher wrote in 1911: "Irredeemable paper money has almost invariably proved a curse to the country employing it."⁴ Experience since Fisher wrote certainly conforms to his generalization. That period has seen the most extensive series of paper money disasters in history: the hyperinflations that followed World War I and World War II; the rapid inflations, if not hyperinflations, of many South American and other countries around the world, particularly many of the lesser developed countries; and most recently, of course, the inflationary experience of the 1970s.

The end of specie standards and the emergence of a world monetary system in which every country, in Fisher's terms, has an "irredeemable paper money" has produced two very different streams of literature: one, scientific; the other, popular. The scientific literature is that already referred to, dealing with monetary reform and the government's role in providing outside money. The popular literature is alarmist, and "hard money," essentially all of it based on the proposition that Fisher's generalization will continue to hold and that the world is inevitably condemned to runaway inflation unless and until the leading nations once again adopt commodity standards.

Interestingly enough, there has been little intersection between these two streams. In my opinion, the scientific literature has largely evaded the question raised by the popular literature. Have the conditions that have produced the current unprecedented monetary system been accompanied by developments that change the likelihood that it will go the way of earlier paper standards? The rest of this paper offers some tentative and preliminary observations on this question.

2. *Ibid.*, p. 4. The implication is that the silver-copper price ratio was of the order of 50 to 1, roughly the market ratio in 1960. Since then, silver has risen sharply in price relative to copper so the ratio is now much higher.

3. *Ibid.*, p. 4.

4. *Purchasing Power of Money*, new ed. (New York: Macmillan, 1929), p. 131.

In the paper already mentioned, Forrest Capie offers the hypothesis that “Severe civil disorder, or perhaps very weak government, has been the critical element. Grave social unrest or actual disorder provokes large-scale spending on the part of the established authority in an attempt either to suppress or placate the rebellious element. At the same time the division in society results in a sharp fall in revenue. In order to gain the resources required, the only tax available is the inflation tax, and so the printing press is brought into action.”

The key element in this explanation is the inability of governments to raise by explicit taxation the revenues needed for the expenditures they undertake. Inflation has always been a very attractive alternative source of revenue since it enables governments in effect to impose taxation without voting for it, and in John Maynard Keynes’s words, “in a manner which not one man in a million is able to diagnose.”⁵ However, the existence of a commodity standard widely supported by the public served as a check. Certainly the primary reason why hyperinflations, and even very rapid inflations, have been so rare in more advanced countries in periods of peace and the absence of widespread civil disturbance is because of the pressure imposed by public opinion on the government to keep its money convertible or, if convertibility has been suspended, to return to a situation in which it is once again convertible.

The key challenge that faces us currently in reforming our monetary and fiscal institutions is to find a substitute for convertibility into specie that will serve the same function of inhibiting resort to inflation as a source of government revenue.

I believe that it is not possible to give a confident and unambiguous answer to the question whether Fisher’s 1911 generalization that “Irredeemable paper money has almost invariably proved a curse to the country employing it” will hold true for the current situation. The experience of such countries as Argentina, Brazil, Chile, Mexico, and Israel are contemporary examples of Fisher’s generalization. However, they are all lesser developed countries that, except for dating, may have more in common with the countries that Fisher had in mind than with the more advanced Western countries. The experience of those more advanced countries — Japan, the United States, and the members of the Common Market — gives grounds for greater optimism. The pressures on governments to obtain resources for government use without levying explicit taxes are as strong today in these countries as they were earlier. However, counter-pressures have developed that reduce the political attractiveness of paper money inflation. The most important such developments, I believe, arise from the greater sensitivity and sophistication of both the public at large and the financial markets with respect to inflation thanks to the information revolution, which has greatly reduced the cost of acquiring information and which has enabled

5. *The Economic Consequences of the Peace* (New York: Harcourt Brace & Howe, 1920), p. 236.

expectations to respond more promptly and accurately to economic disturbances, including changes in government policy.

Inflation has added to government resources in three ways: first, the government money issues have constituted an implicit inflation tax on outside money holdings; second, inflation has produced an unvoted increase in explicit taxes as a result of bracket creep; third, inflation has reduced the real value of outstanding debt issued at interest rates that did not include sufficient allowance for future inflation. Recent economic, political, and financial developments have greatly eroded the potency of all three sources of revenue.

With respect to the first, the figures for the United States suggest the trend. Outside (or high-powered) money remained remarkably constant at about 10 percent of national income from the middle of the nineteenth century to the Great Depression. It then rose sharply to a peak of about 25 percent in 1946. Since then the ratio of outside money to national income has been declining and currently is about 7 percent. For a modern society, in which government taxes and spending have mounted to 30 to 50 percent or occasionally even more of the national income, this component is perhaps the least important of the three. Even if inflation did not reduce the ratio of outside money to national income, which it unquestionably would do, a 10 percent per year increase in outside money would currently yield as revenue to the U.S. government only about seven-tenths of 1 percent of national income. Further financial innovation is likely to reduce still further the ratio of outside money to national income even aside from the effect of inflation, making this source of revenue even less potent. Though I have not investigated the subject in detail, I am under the impression that the same tendencies have been present in many other countries as well, so that there too this source of revenue has become less important.

The second component of revenue — bracket creep — has very likely been far more important than the first. That has almost certainly been true in the United States in recent decades. Inflation has subjected low- and moderate-income persons to levels of personal income tax that could never have been voted explicitly.

Speaking again of the United States, one result of bracket creep has been political pressure that has led to the indexation of the personal income tax schedule for inflation, which largely eliminates this source of revenue. Here again, I do not know what the situation is in other countries, but I suspect that wherever there has been substantial inflation there has also been substantial indexation of the personal tax structure.

The third component has also been extremely important. Speaking for the United States again, at the end of World War II, the funded federal debt amounted to 6 percent more than a year's national income. By 1967 it was down to about 32 percent of national income despite repeated "deficits" in the official federal budget. Since then it has risen as deficits have continued and increased but, even so, to only about

36 percent currently. Real growth partly accounts for the decline in the deficit ratio, but inflation was the major explanation. Inflation converted the positive nominal interest rates at which the debt had been issued into negative real rates *ex post*.

Developments in the financial markets have sharply eroded the potency of this source of revenue. Market pressures have made it difficult for governments to issue long-term debt at low nominal rates. In the United States, one result has been a sharp reduction in the average term to maturity of the federal debt — from 9 years 1 month for the marketable interest-bearing public debt in 1946 to 4 years 1 month in 1983. Except under wartime conditions, it is far more difficult to convert positive nominal interest rates on short-term debt into *ex post* negative real rates by unanticipated inflation than it is to do so for long-term debt. Moreover, it is less profitable to do so for short-term than for long-term debt. For both short- and long-term debt, several decades of historically high and variable inflation has made it far more difficult to produce unanticipated inflation of any magnitude for any substantial period than it was even a decade or so ago, when the public's perceptions still reflected the effect of a relatively stable price level over long periods.

In the United Kingdom, the government now issues bonds adjusted for inflation. For such bonds, there is no way that the government can benefit from *ex post* negative real interest rates. There has long been support in the U.S. for the Treasury to issue similar securities but so far the Treasury has been unwilling to do so. However, pressure to issue purchasing-power securities would undoubtedly intensify if inflation in the U.S. again became high and variable.

Perhaps several decades of a relatively stable long-run price level would again lull asset holders into regarding nominal interest rates as equivalent to real interest rates. But that is certainly not the case today.

To summarize, inflation has become far less attractive as a political option. Given a voting public very sensitive to inflation, it may currently be politically profitable to establish monetary arrangements that will make the present irredeemable paper standard an exception to Fisher's generalization.

Recent experience provides some support for that view. The inflationary episode of the 1970s was severe by the standards that had become accepted in the United States, the United Kingdom, Japan, and other advanced countries during the nineteenth and most of the twentieth century, though it was mild by comparison with the experience of many other countries of the world. But it was sufficiently severe to establish political pressure that has led to policies of disinflation throughout the Western world, policies of restraining monetary growth and of accepting substantial unemployment in order to avoid continued inflation.

Japan offers perhaps the most impressive example. In the early 1970s, inflation in Japan reached levels well over 20 percent. The government and the Bank of Japan reacted promptly and effectively, bringing down sharply the rate of monetary

growth. They have continued to maintain a relatively steady and gradually declining rate of monetary growth. As a result, inflation has not only been brought down to low levels but also, Japan has escaped the sharp ups and downs in inflation that have plagued many other countries.

Germany offers an example of a rather different kind, an example of how experience can alter the political attractiveness of the inflation option. Throughout the post-World War II period, Germany has tended to have lower inflation than the U.K., the U.S., and most other Western countries. The reason seems clearly to be the long-term effects of the post-World War I hyperinflation reinforced by the post-World War II experience of suppressed inflation which incapacitated the monetary system and forced a resort to barter.

Similarly, the U.K. and the U.S. have succeeded in sharply reducing inflation after the two countries had experienced double-digit inflation and despite the accompanying rise in unemployment, particularly sharp and long-lasting in the U.K.

The apparent decline in the political profitability of inflation is a source of promise but it is far from a guarantee that Fisher's generalization is obsolete. Governments often act under short-run pressures in ways that have strongly adverse long-run consequences. Israel today offers a conspicuous example. It continues to resort to inflation under conditions that make inflation a poor source of revenue, if, indeed, in the particular circumstances of Israel, inflation is not itself a drain on government resources, at least in the long run.

These remarks are directly related to the basic theme of this conference: financial innovation and monetary policy. The unprecedented character of the world monetary system and its initial effects are major sources of the financial innovation that has occurred, and of the pressures for deregulation of financial markets. They also raise the primary questions for monetary policy. Will the temptation to use fiat money as a source of revenue lead to a situation that will ultimately force a return to a commodity standard, a gold standard of one kind or another, or shall we be successful in the course of the coming decades in developing monetary and fiscal institutions and arrangements that will provide an effective check on the propensity to inflate and that will again give us a relatively stable price level over long periods of time?

The final answer to these questions will come only as history unfolds over the coming decades. But what that answer will be depends critically on the contribution that conferences such as this can make in defining the issues, devising alternative solutions, and examining their merits and demerits. That learning process is already underway, and in one sense has been for centuries, ever since the appearance of systematic analyses of money and monetary institutions. But in another sense, the learning process is still in its infancy, because in important respects, we are venturing into unexplored terrain.