International Monetary Reform: The Feasible Alternatives

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It may seem odd, our writing about international monetary reform. It has been not much in the news since April 1976, when a revised International Monetary Fund Articles of Agreement, a new international monetary constitution produced with great effort and anguish, was made public. We believe, though, that before too long finance ministers and their experts will again turn, if perhaps with less flourish than last time, to the task of monetary reform. That appears an odds-on bet, for even as it was being published many governments were lamenting their new constitution, particularly the part which made floating exchange rates legal. Nor has the experience of the past two and a half years been reassuring. Among governments, there is now more opposition to floating rates than there was in early 1976.

What concerns us is that governments may not understand what their options are. And presumptuous though it may be, that is why we write: to explain which international economic policy regimes are feasible and which are not.

It is reason enough for concern that academic experts in international economics have shown so little understanding of what the feasible choices of governments are. Many of the most eminent have long urged a hands-off or libertarian regime, under which there is no official exchange market intervention and international borrowing and lending are not at all restricted. But that regime is not feasible. Under it, there is no equilibrium; more specifically, equilibrium exchange rates are not determined.

We can put this point another way. Having floating exchange rates is feasible only when international borrowing and lending are effectively prohibited by law, or in other words only with portfolio autarky. There is a floating rate regime—the portfolio autarky/floating rate or PA/F regime—under which there is no official exchange market intervention and international borrowing and lending are prohibited. And that regime is feasible. Under it, there is an equilibrium, an equilibrium characterized by trade balance, for every choice of budget or domestic economic policies. But the libertarian regime—which we sometimes refer to as the laissez-faire/floating rate or LF/F regime—although vigorously advocated by Professor Milton Friedman and others, is not feasible for any choice of budget policies.

Our other essential point (much more easily accepted, we are sure) is that no fixed exchange rate regime is feasible except when governments, foreswearing autonomy, continuously run identical budget surpluses or deficits (identical in the sense that their respective national debts, inclusive of their noninterest-bearing liabilities, increase or decrease at the same percentage rate).

There is a clear implication. If governments want autonomy, independence in choosing budget policies, then they must prohibit international borrowing and lending. More particularly, each must insist that its citizenry hold only its money.

Such capital controls are distorting, though, and

real resources must be used to make them effective. And that should give governments pause. Is autonomy worth what, directly and indirectly, it costs? We think not and at another time will make a case for the best of international economic policy regimes: that under which international borrowing and lending are unrestricted, all government budgets are continuously in balance, and exchange rates are cooperatively and indefinitely maintained at previously specified values. But here we content ourselves with establishing the fundamental choice of governments: they can enjoy autonomy in budget policies, but only if they are willing to impose and enforce compliance with severely restrictive capital controls.

Fiat Money: Intrinsically Useless

Undeniably, the world economy is a paper or fiat money economy. It long has been; we are now several decades beyond the time when gold was replaced by national fiat monies. And as all would also agree, fiat money is intrinsically useless. It is never wanted for its own sake. Neither directly nor indirectly does it have any value in consumption. (That is why it has so intrigued economists. Why then does it have a positive price? But that is by the way.) If an individual gives up wheat, say, for a certain number of pieces of paper, that is only because she or he expects that later on another individual will take those pieces of paper in exchange for wine or some other commodity that has value in consumption.

Something very important follows, though, from the intrinsic uselessness of fiat money. A kind of dominance is implied: If individuals are free to choose from among several assets, a fiat money being one, and if another of those assets has a greater (expected) return in all circumstances, then no one will want to hold the fiat money. Suppose to the contrary that someone does. That individual is willing to trade valuable commodities for some fiat money, even though she or he could enjoy more consumption subsequently by acquiring the higher-yielding asset. And why? Any explanation contradicts what must be accepted, that fiat money is intrinsically useless.

Someone will perhaps object that we have overlooked the obvious: exchange is costly, and the use of paper money minimizes that cost. But it is not wrong to overlook the obvious when the obvious is not relevant. The world we know is one with several fiat monies. Nearly every national government has its own. So there is a choice of which to hold or use as the medium of exchange. Thus, to recognize that exchange is costly is not to deny that one fiat money can dominate another or that fiat monies are perfect substitutes, each for all the others. The most efficient way of making exchanges may be by using paper money. But that is not why the Mexican peso is the medium of exchange in Mexico or why the Israeli pound is the medium of exchange in Israel. The explanation is to be found in the policies of governments.

The unconstrained demands for fiat monies (national currencies) are, then, very special. Being demands for perfect substitutes, they are of the all-or-nothing variety. Depending on how rates of return compare, any individual wants to hold only country X money or only country Y money. Thus, with perfect freedom of portfolio choice, equilibrium exchange rates can't be expected to change. Indeed, if individuals were never surprised, then equilibrium exchange rates would be constant over time. The argument is essentially that which establishes the well-known interest arbitrage condition of the international economics literature. That condition says that the riskless nominal interest rates of any two countries, X and Y, can differ only by the expected change in the country X-country Y exchange rate. But for fiat monies the nominal rates of return are zero. Hence, so is the expected change in the exchange rate. That is a direct consequence of the intrinsic uselessness of fiat money.

The Libertarian Regime: An Indeterminate Equilibrium

The libertarian regime advocated by so many academic economists (what we're calling the laissez-faire/floating rate or LF/F regime) is characterized by perfect freedom of portfolio choice and no official exchange market intervention. And under it there is no equilibrium. Because fiat monies are intrinsically useless and money demands are therefore of the all-or-nothing variety, the equilibrium of the LF/F regime is indeterminate.

To say the same thing another way, the LF/F regime has an equilibrium for not one but every choice of exchange rate values. With the time paths of the national monies given, any set of unchanging exchange rate values determines a time path of the

world money supply[1]—and so an equilibrium. Moreover, the world money supply time paths implied by different sets of exchange rate values are different, and so are the equilibria. But exchange rate values do have to be specified. There are no market-determined equilibrium values.

Those reared on conventional theory may find that conclusion hard to accept. For that theory, in any of its variants, certainly does say that the LF/F regime has an equilibrium. That contrasting conclusion and the others of the conventional theory are, however, the fruits of implicit theorizing. What almost all contributors to the balance-of-payments or exchange-rate literature have assumed is that the residents of country X want always to hold only the money supplied by the government of country X and that the residents of country Y want always to hold only the money supplied by their government. Recently, a few have assumed that there is limited currency substitution, that the residents of countries X and Y want always to hold diversified portfolios of national monies.[2] But neither assumption is consistent with the intrinsic uselessness of fiat money. So to assume, for example, that the residents of countries X and Y want always to hold only the monies of their respective governments is implicitly to assume that those residents are restricted in their portfolio choices. That is why the conclusions of the conventional balance-of-payments theory are the fruits of implicit theorizing. Those conclusions are, then, less general than has been thought. More particularly, they are not valid for the LF/F or libertarian regime.

As pointed out above, it cannot be argued in defense of either assumption that, after all, country X money is the medium of exchange in country X and country Y money is the medium of exchange in country Y. In a truly libertarian regime, what to use as the medium of exchange is a matter of choice.

It is hardly short of mind-boggling, the contrast between the conventional assumptions about bonds and monies. What many authors have assumed, presumably to approximate the fact that the world economy is much more integrated than it once was, is that there is perfect capital mobility; the bonds of countries X and Y, if of equal riskiness, are perfect substitutes. Those are the very same authors, though, who have assumed that the residents of, say, country X want always to hold only the money of the government of country X.

We do not say that individuals will never want to hold diversified portfolios of national currencies. If there is the right kind of uncertainty about government policies, they will. (Note, however, that not any kind of uncertainty will do.) But uncertainty about government policies is not a characteristic of the libertarian regime. Advocates of that regime (our LF/F regime) appreciate fully that lessening uncertainty will produce a welfare gain and surely would have governments indicate that they will maintain it indefinitely.

Nor do we say that individuals will never be observed holding only the monies supplied by their respective governments. They will be if they are bound by sufficiently stringent capital controls. They may be when governments are following certain exchange market intervention schemes. But it is not right to interpret observations generated by particular regimes as revealing money demands that hold generally. And that is what many have done.

A Qualification and a Claim

If money demands are of the all-or-nothing variety, then, any anticipated decrease in, say, the value of the Canadian dollar must produce an unbounded flight from Canadian money. That may seem far-fetched, and in a way we agree. Economists are not very good at predicting what happens in the short run, as long as inertia or economic friction is a potent force. Think of two deluxe hotels, the accommodations of which are perfect or almost perfect substitutes. The first cuts its room rate. Does the second

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[1] We can be read as assuming that the supply of, for example, the money of the government of country X, as it varies over time, is determined by that government's budget deficits. In our view, though, the composition of a national debt, as between interest- and non-interest-bearing debt, hardly matters. The detailed argument is developed in two papers by John Bryant and Neil Wallace: *The Inefficiency of a Nominal National Debt*, Research Department Staff Report 28, Federal Reserve Bank of Minneapolis, October 1977; and *Open Market Operations in a Model of Regulated Insured Intermediaries*, Research Department Staff Report 34, Federal Reserve Bank of Minneapolis, March 1978.

[2] See Lance Girton and Don Roper, *Theory and Implications of Currency Substitution*, Board of Governors of the Federal Reserve System, March 1978; and Guillermo Calvo and Carlos Rodriguez, "A Model of Exchange Rate Determination Under Currency Substitution and Rational Expectations," *Journal of Political Economy*, Vol. 85, No. 3, pp. 617-25.

empty immediately? Economic theory may say so, but that seems unlikely. Economists are pretty good, though, at predicting what happens in the long run, after inertia is spent. And that is how we interpret the implications of our all-or-nothing money demands, as predictions of what sooner or later must come true.

Almost all would agree that there would be an unbounded flight from Canadian money if, with probability of unity, people expected the U.S. dollar to appreciate indefinitely at a rate of, say, 50 percent per year. And what if the certain expectations were 25 percent per year? Or 5 percent per year? Whatever the rate, the basic incentive is still there. Any positive rate implies a continuing loss of wealth for owners of Canadian money. And what we argue is that, if experiencing continuing losses, individuals will sooner or later overcome the force of inertia. Advocates of the libertarian or LF/F regime must argue that they never will, that inertia will forever remain a potent force, and that seems to us more than a little implausible.

We would also insist that the LF/F regime has never been observed. If someone can point to a historical instance, our assertion is clearly false. Recall, though, what we said earlier on: although uncertainty about government policies may make individuals want to hold a diversified portfolio of national monies (and hence give a determinate equilibrium), it is not a characteristic of the LF/F regime. For that regime, individuals must be reasonably sure that governments will never impose portfolio restrictions or manage exchange rates. Then, too, portfolio restrictions can take subtle form; it is not always easy to decide whether a particular historical regime approximates the LF/F regime.

Consider, for example, the regime under which U.S. and Canadian residents have been living recently. Some would perhaps interpret it as an instance of the LF/F regime. We would not, since it seems very likely that market participants have all along believed that at some exchange rate value the Canadian or U.S. government would intervene by severely restricting portfolio choices. And as we said before, under the LF/F regime that threat has a zero or near-zero probability.

Fixed Exchange Rate Regimes

What, then, of fixed exchange rate regimes? If governments persist in different budget policies, none of them is feasible.

In principle, chosen exchange rate values can be maintained in two ways: cooperatively or noncooperatively. Again, think of two countries, X and Y, and suppose the government of country X has the responsibility to keep the country X-country Y exchange rate at some designated value. That government may have unlimited access to the currency of country Y; it may, that is, be able to borrow, perhaps at zero interest, any amount required to meet the private demand for that currency. If so, then there is cooperation, and the regime is the cooperative fixed exchange rate or C regime. If the government of country X does not have an unlimited line of credit, if it cannot in effect print country Y currency, then there is no cooperation, and the regime is the noncooperative fixed rate or N regime.

The difference between the C and N regimes may be apparent. Briefly, it is that the C regime is in general economically feasible and the N regime is not. Under the C regime, the exchange rate of countries X and Y can be maintained indefinitely at any value, no matter what the budget policies of the two countries are. Under the N regime, though, no value of the exchange rate can be maintained indefinitely by country X if its budget surplus, which may be positive or negative or zero, is less than the country Y surplus. If its surplus is greater than or the same as that of country Y, then it can maintain some exchange rate values indefinitely—but only those that undervalue its own money.[3] Thus, the N regime is economically feasible only when the government responsible for maintaining the exchange rate has a budget surplus no smaller than that of the other country and it undervalues its currency, perhaps appreciably. The Germany of the 1960s comes immediately to mind.

But an exchange rate regime is not a practical real-world option just because it is economically feasible. It must also be politically feasible. And the C

[3]We use the exchange rate equilibrium value under the PA/F regime as the norm. As noted later on, there is an equilibrium value for any choice of budget policies under this regime. The result just given, and all the others given here, are to be found with proofs in our paper, *Samuelson's Consumption-Loan Model With Country-Specific Fiat Monies*, Research Department Staff Report 24, Federal Reserve Bank of Minneapolis, July 1978.

regime, although economically feasible for any budget policy choices, is politically feasible for almost none. What we mean is that under a cooperative fixed exchange rate regime, except for very special values of the budget surpluses, the residents of one of the countries permanently subsidize the residents of the other, more or less depending on the value at which the exchange rate is maintained.[4] Depending on what particular budget surpluses have been chosen, the residents of country X may permanently subsidize the residents of country Y or they may be subsidized by the residents of country Y. Here, though, which way the subsidy goes is less important than the fact that under the C regime a subsidy is generally paid.

And the N regime, when economically feasible, is not politically feasible either. If under a noncooperative fixed exchange rate regime, country X is able to maintain a given exchange rate value indefinitely, then the residents of country X are continuously subsidizing the residents of country Y.

The Feasible Alternatives

What we have said about the fixed exchange rate regimes is neither original nor controversial, but rather, as most experts in international economics would insist, a critical part of the case for floating exchange rates. Strictly speaking, that is not so. But most experts do seem to share the feeling that governments should have autonomy, that they should not have to adopt those budget policies for which the cooperative (or noncooperative) regime is both economically and politically feasible. Some of the experts would maybe say that every country has a reasonably stable and exploitable Phillips curve and that, if only because tastes differ across countries, each government should be free to choose its own inflation-unemployment path. A more credible view is that each government should be able to choose its own inflation (or deflation) rate. Since countries are, of course, different, identical tax policies almost certainly would not be best for them all. For example, if the typical German is less given to income tax avoidance and/or evasion than the typical French person, as is often alleged, then the German government probably should not rely as much as the French government on inflation as a means of taxation. Whatever the rationale, though, if autonomy is accepted as desirable, then the analysis which says that fixed rate regimes are in general not feasible is an argument for floating rates.

Most experts also seem to share a distaste for capital controls. That is understandable. In a world with capital controls, rates of return on assets of equal risk may differ across countries. But if they do, then welfare-improving trades might be made.

These two feelings—a distaste for capital controls and a conviction that governments should have autonomy—explain why most experts in international economics favor the libertarian regime. But as we have seen, that regime is not a practical possibility; it does not have an equilibrium. So for a feasible international monetary system, governments must make a choice.

They could choose not to have capital controls. The cooperative fixed exchange rate regime is economically feasible when portfolio choices are unrestricted. But that regime is politically feasible only when budget policies are coordinated.

Or they could choose to have autonomy in budget policies. The portfolio autarky/floating rate or PA/F regime always has an equilibrium, whatever the budget policies of governments. If, for example, the government of country X has a smaller budget surplus than the government of country Y, if its total debt is increasing at a greater percentage rate than the debt of the government of country Y, then its money depreciates steadily relative to that of the government of country Y. Further, the PA/F regime is politically feasible, at least in the sense that there are no intercountry transfers even when budget policies are different. That is, at every equilibrium of that regime there is trade balance. But the PA/F regime is a regime of pervasive capital controls.

A Case for Budget Policy Coordination

Which alternative should governments choose?

Our discussion so far could be summarized as a case for coordination of budget policies: For auton-

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[4]For example, if the government of country X has a balanced budget and the government of country Y has a deficit which yields a 10 percent per year increase in the supply of its money, then (abstracting from growth) at any fixed exchange rate the annual inflation rate is something between zero and 10 percent. In general, the inflation rate will be higher the greater is the value of country Y money relative to that of country X. And there is a transfer from the residents of country X to the residents of country Y, for only the government of country Y is getting command over resources as the world money supply increases.

omy, independence in selection of budget policies, private portfolio choices must be severely restricted. In particular, individuals cannot be left to decide for themselves what money to hold or use. Yet restricting portfolio choices is costly. Not only will interest rates differ across countries if governments have different budget policies, as they can under the PA/F regime, but there will also be compliance costs, which could be considerable. And the cost of restricting portfolio choices must be regarded as the cost of autonomy.

That case is not, however, overwhelming. All we have established is that autonomy is not as advantageous as at first blush it might seem. It is not as advantageous as it would be if the LF/F regime, the hands-off or libertarian regime favored by Professor Friedman and others, were a practical option. It is presumably worth something that each government be able to tax as it sees fit. And so, despite the costliness of restricting portfolio choices, there may still be net advantage in governments having autonomy.

We believe, though, that there is a stronger case for coordination than we have made here. Indeed, there is a persuasive case for continuing budget balance in all countries and for what is then feasible—cooperatively maintained (fixed and not adjustable) exchange rates. But that is for another time.

The views expressed herein are those of the authors and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.