
Revamping the International Monetary System

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The central purpose of the International Monetary Fund is, even though it is not expressed clearly in its Articles of Agreement, promotion of maximum output consistent with limiting the imbalances that threaten crises. The main instrument that the Fund wields to further this objective is its surveillance over member countries, which takes the forms of its biannual publication, *World Economic Outlook*, and its annual bilateral discussions with each member. It is the contention of this paper that the effectiveness of this surveillance is limited primarily by the absence of any vision of what a well-balanced world economy would look like. Absent such a vision, the best that surveillance can hope to do is identify occasional instances of grossly antisocial national behavior, such as the US fiscal deficit or the undervaluation of the renminbi.

The question asked in this chapter is whether one could conceive of using such a vision as the basis for creating a framework of obligations. It will be taken as axiomatic that the dominant macroeconomic practices, floating exchange rates and the use of inflation targeting as the nominal anchor, will be maintained in a revamped international monetary system, but the issue is whether these practices might be compatible with a more structured set of arrangements. I answer that question by outlining such an arrangement that is based on a Fund role in calculating a set of mutually consistent reference rates for currencies. Such a set of rates could be used to provide a framework for surveillance, which has been a largely vacuous

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exercise up to now. The chapter also provides a second example of the role that the Fund could play in a revamped international monetary system: orchestrating a group of emerging-market borrowers to make a simultaneous swap of a large part of their debt stock into growth-linked bonds.

This chapter starts by describing the concept of a reference rate, how it differs from a parity or central rate, and the related concept of a monitoring band. It then proceeds to discuss how the process of identifying a set of reference rates would be conducted by the Fund. The next section describes the uses that might be made of a set of reference rates in disciplining the policies that countries pursue and, hence, in providing a basis for surveillance. This is followed by a section describing the role that it is envisaged the Fund could play in coordinating a number of emerging markets into making a simultaneous swap into growth-linked bonds.

Reference Rates

The concept of a reference rate was introduced by Wilfred Ethier and Arthur Bloomfield in a series of papers written shortly after the advent of floating exchange rates among the major currencies. The definitive version was published in 1975 (Ethier and Bloomfield 1975). A reference rate would be an internationally agreed real effective exchange rate; it would be an estimate of what rate would be consistent with equilibrium in both the domestic economy and the balance of payments; the accompanying rule book would permit but never compel intervention designed to push the rate toward the reference rate; but it would largely prohibit other intervention.¹ The purpose of agreeing to such a set of rates and introducing a rule that prohibits intervention tending to push exchange rates away from the reference rate is to discipline countries' intervention policies and outlaw antisocial behavior in which countries deliberately maintain disequilibrium exchange rates for mercantilist reasons (beggar-thy-neighbor policies). And, unlike Goldstein's interpretation of exchange rate "manipulation," such a set of rates inhibits antisocial exchange rate policies in a way consistent with allowing (but not compelling) countries to manage their exchange rates so as to reduce misalignments.²

The big differences between reference rates and parities, or central rates, concern the intervention rules. Intervention to return the market rate to-

1. Tactical intervention to combat unwanted volatility could still be permitted.

2. I worry that (for example) intervention by the European Central Bank intended to limit the euro's depreciation in 2000–2001 might have been precluded by Goldstein's rule because such intervention might have had to be one-way for a prolonged period and to be effective might have needed a substantial use of reserves. I see the fundamental inadequacy of the present IMF rule book, which Goldstein aims to enforce, as the presumption that discipline is needed only to prevent governments from thwarting the market; I believe that the market sometimes makes gross errors as well and may, therefore, merit disciplining.

ward the estimate of what is socially desirable is permitted. It is therefore important that the reference rates be based on serious estimates, for otherwise there is the possibility of sanctioning actions that could increase exchange rate misalignments. However, a reference rate differs from a parity or central rate in that it carries no obligation to intervene to defend any particular rate or prevent the market rate from going outside of any range. In that fundamental sense it allows the exchange rate to float. Countries have the right to manage the float if they want to, but only within parameters that have been internationally agreed. Intervention inconsistent with those parameters is prohibited. If China's reference rate had been agreed to be substantially more appreciated than the present rate for the renminbi, China would be obliged by the rules to cease its intervention. Nevertheless, no country could be forced by these rules into defending a rate. In contrast, a parity or central rate carries with it an obligation to prevent the market rate from deviating from that level by more than a defined sum (known as the margin).

It would be possible to push the system one degree further toward obliging countries to float, if this were desired. Instead of an obligation to avoid intervention that would push the rate away from the reference rate, one could prohibit intervention until the rate had moved outside some band around the reference rate.³ This is what is known as creating a "monitoring band." Intervention would be permitted (but of course not obligated) once the market rate had deviated by more than a certain percentage from the reference rate, but the reference-rate rule would apply beyond that point: Intervention would be allowed in only one direction, to push the rate toward the reference rate (that is, toward the monitoring band). The rate would therefore necessarily float within some band of the estimated equilibrium (the reference rate), but beyond that countries would gain the right to intervene with a view to limiting deviations. None of this would circumscribe their right to float; it would simply guarantee that the only deviations from floating would be those that had been sanctioned by the international community.

Selecting the Reference Rates

One would clearly wish a set of reference rates to be in some sense estimates of equilibrium exchange rates. My concept of the fundamental equilibrium exchange rate, or FEER (Williamson 1985), was one of the early attempts to define what one is searching for. I defined a FEER very much in the Bretton Woods sense, as the real effective exchange rate that would induce a current account balance that would offset the underlying capital

3. Tactical intervention to combat unwanted volatility could still be permitted within the band.

flow (so as to produce zero change in reserves, except perhaps for a trend buildup) when the economy was at internal balance.

Since then many variations on this theme have been suggested. Following are some of the prominent ones:

- **DRER** (*desired long-run equilibrium real exchange rate*). Lawrence Hinkle and Peter Montiel (1999, 11) characterize the long-run equilibrium exchange rate (the LRER) as “a function of the steady-state values of predetermined variables and the permanent (sustainable) values of policy and exogenous variables.” The DRER is the “desired” LRER, “which is conditioned on optimal values of the policy variables, permanent values of the exogenous variables, and steady-state values of the predetermined variables.” They note, however, the ambiguity in the concept of the long run, which leaves open the question of whether the economy has to have reached a steady-state international net creditor position. If one takes the version that is not restricted to a steady-state international net creditor position, it is not clear how this concept differs from the FEER, at least not to those who think of the underlying capital flow as a positive rather than a normative concept. See Edwards (1988) and Hinkle and Montiel (1999).
- **DEER** (*desirable equilibrium exchange rate*). This is how some IMF staff members have referred to their “FEER-like concept.” The change in terminology was intended to emphasize the normative content of the concept, which means primarily that they view the underlying capital flow in normative terms but perhaps also that they see internal balance as the highest level of employment consistent with maintaining stable inflation. See Bayoumi et al. (1994).
- **BEER** (*behavioral equilibrium exchange rate*). The big difference from the FEER is that, instead of seeking to identify a normal capital flow to which the current account would need to adjust in equilibrium, the analysis takes actual capital flows over some period and asks what exchange rate would have induced an offsetting current account balance. Thus the analysis is fully behavioral, purged of any hint of normative content. See MacDonald (2000).
- **GSDEER** (*Goldman Sachs dynamic equilibrium exchange rate*). This is what Goldman Sachs uses in order to estimate the neutral exchange rate in its forecasts. The main difference from the FEER lies in the attempt to estimate capital flows as a function of such variables as relative productivity growth rates. Thus, an increase in productivity growth attracts a capital inflow that requires a real appreciation in order to induce the larger current account deficit needed to maintain reserve growth constant. See O’Neill et al. (2005).

- **NATREX** (*natural real exchange rate*). This is defined as the exchange rate that would result if speculative and cyclical factors were removed while unemployment was at its natural rate. It is a moving equilibrium rate, responding to both exogenous real disturbances and the gradual endogenous changes in capital stocks and net foreign asset positions. See Stein (1994).

The important issue is less the precise definition of the equilibrium exchange rate than it is how one estimates convincing values of whatever equilibrium concept one chooses. My own approach to this was to appeal to large macroeconometric models in order to identify exchange rates that would have generated in equilibrium current account balances that would have offset underlying capital flows simultaneously in all the countries modeled (when they were all at internal balance). This is also one of the methods that have been used to estimate the DREER, although that has also been done in several other ways: by a partial equilibrium approach using trade and income elasticities and estimates of deviations from internal and external balance, by use of the dependent economy model, and by single-equation reduced-form estimation that makes use of unit-root econometrics.

The DEER or BEER can be estimated in any of the same sorts of ways. The GSDEER is estimated by a single dynamic ordinary least squares (OLS) estimation for all 35 countries now in the Goldman Sachs panel; this amounts to assuming that the parameters of the equation (which also contains country-specific dummies) for productivity, terms of trade, and net international investment position (NIIP)/GDP are identical for all the countries. The NATREX is estimated on an individual-country basis using unit-root econometrics.

The IMF now uses two different approaches. One involves an adjusted purchasing power parity (PPP) approach, with adjustment being made for factors that are known to influence the equilibrium exchange rate (like net foreign assets, relative productivity growth, the relative output of manufacturing, and commodity prices). The other involves a series of partial equilibrium models as described above, though with an attempt to ensure multilateral consistency. This is inspired by the same philosophy as that from which my own estimations started but has been found to be a more efficient method of deriving estimates than the simulation of macroeconometric models, in which problems of securing convergence within a reasonable time horizon often prove formidable.

All of these methods have both advantages and disadvantages, and to date there is no consensus that one method is better than any other. In particular, none of them claim to be able to identify an equilibrium exchange rate with any precision. In my early work I suggested that one reason for preferring wide target zones is that one could not realistically hope to pin

down the equilibrium exchange rate more precisely than to within plus or minus 10 percent; some subsequent writers have suggested that even this is overambitious and that a range of plus or minus 15 percent (as used by the European Monetary System in its final years) is more realistic. One implication is that it is unreasonable to expect that countries will accept obligations to hold exchange rates at levels that can only be calculated subject to such a wide margin of error, but a reference rate does not impose such an obligation. There would be far less reason to object to the much weaker restraint imposed by a reference rate: of not intervening to push the rate away from what is believed to be the equilibrium rate. This does not, of course, mean that one should not anticipate initial resistance from countries (for example, China and several other East Asian countries) that maintain their rates at levels that now fall outside reasonable estimates of equilibrium. The question to ask, however, is whether it would have appeared unreasonably onerous to them to join a system that contained such a rule book. If not, then it would seem reasonable to make the effort to redraft the rules, even if one is doubtful they could immediately be put into effect.

The process of determining a set of reference rates might be something as follows: The IMF staff would use their favored approach, or perhaps a variety of approaches, in order to generate a suggested set of reference rates for all IMF member countries. The staff would present these to the IMF Executive Board at regular intervals (quarterly or half-yearly). Some countries would doubtless object that their proposed reference rate was too strong (occasionally one might also complain that a proposed rate was too weak). The relevant executive director would make this case to the board, using a mix of technical arguments (challenging some aspect of the IMF's model or claiming that the current account target that the IMF had assigned was inappropriate or arguing that the Fund staff had overlooked certain special factors) and political pleading, as is customary in such contexts. The board might find itself impressed or unimpressed by the case it heard made. Where it declared itself impressed, the staff would amend their recommendations appropriately, using a procedure that would guarantee that the set of reference rates remain globally consistent. The staff would then present its revised recommendations to the board. If some countries remained dissatisfied, the process might be repeated, in principle more than once; but it would be necessary for the board to reach agreement by a defined date, and it would therefore be necessary to agree *ex ante* to a process for resolving any differences of opinion that could not be argued out in this way. I do not see that there is an alternative to allowing the (weighted) majority of the board the ultimate right to impose its views on a minority.

Once agreement had been reached, the set of reference rates would apply for the next three or six months. They would be expressed as effective exchange rates rather than bilateral dollar rates, so that movements

of third currencies would not distort policy. Rapidly inflating countries (those with an inflation of more than, say, 10 percent a year) could also have their reference rates adjusted periodically—perhaps monthly, after publication of a prespecified relevant price index—so as to keep their real reference rates more or less constant.

In my view it would be helpful if the Fund were to publish the set of reference rates once these had been agreed. One would hope that over time the published estimates of equilibrium exchange rates would gain credibility with the market, so that if available to market operators they would help to make speculation more stabilizing and reduce misalignments. Their availability might also help to make press comment more informed, so that newspapers would tell their readers whether a currency move was toward or away from equilibrium, rather than their present tendency to treat any strengthening of the currency as good news and any weakening as bad news. Even if one does not agree that publication would be desirable (for example, because of fears—which I find far-fetched—that it would promote destabilizing speculation), it is quite unrealistic to imagine that in this day and age it would be possible to keep the agreed figures secret.

Uses of Reference Rates

The obligation that goes along with a reference rate proposal is that intervention (or other policies intended to influence exchange rates) would be limited to that which would tend to push the market exchange rate toward the reference rate. Minor exceptions might be allowed, as when a country faced disruptive volatility in the rate and therefore thought it needed to undertake smoothing intervention, but the IMF could judge whether such intervention really was minor and smoothing by examining the country's reserve change. Large, persistent intervention would not be outlawed (as under a Goldsteinian interpretation of exchange rate manipulation), but it would be limited to that which was pushing the exchange rate toward the reference rate. If the renminbi had a reference rate stronger than its current rate (and it is difficult to imagine any procedure that would be acceptable to other countries that would not at present yield this result), China would be prohibited from buying reserves.

The major advantage of agreeing to a set of reference rates is that an agreement would permit a much more focused process of surveillance than is possible otherwise. A country's policies would be examined for consistency with achieving the reference rate as well as achieving a current account outcome in the vicinity of that assumed when calculating the reference rate, on the assumption that the exchange rate actually equals the reference rate.

The first part of those terms of reference is relatively easy. It is straightforward to examine whether a country's reserves have increased or de-

creased and whether the exchange rate has been stronger or weaker than the reference rate. It would be somewhat less straightforward to make similar assessments on the various other policies that are sometimes used to influence exchange rates.

The most important of these policies has traditionally been interest rate policy. The question to be asked here is whether the policy interest rate has been set appropriately for domestic objectives. If not, the presumption is that its deviation was attributable to an attempt to influence the exchange rate. One would then ask the question whether the deviation of the interest rate is consistent with the level of the exchange rate relative to its reference rate. For example, a country with interest rates lower than seem appropriate for domestic considerations would be acting contrary to its international obligations if the exchange rate was weaker than its reference rate. A similar test should be applied to various other policies that have on occasion been used to influence exchange rates. Thus, a country with an exchange rate weaker than its reference rate should not

- accumulate reserves,
- hold the policy interest rate lower than is appropriate for domestic reasons,
- increase encouragement of exports, or
- intensify controls on capital imports or artificially promote capital exports.

An analogous list of the prohibitions for countries whose exchange rate is stronger than the reference rate would be to

- run down reserves,
- hold the policy interest rate higher than is appropriate for domestic reasons,
- impose controls on current account expenditures except for noneconomic reasons,⁴
- undertake sovereign borrowing in foreign currency, or
- intensify subsidies to capital imports or controls on capital exports.

Who would supervise these rules and what would happen if they were violated? In the first instance, the IMF staff would draw up regular reports (monthly or quarterly) about which countries were intervening inappropriately or otherwise violating these rules. Their reports would go

4. Examples of legitimate controls would be controls on the import of firearms or drugs.

to the IMF Executive Board. The executive director of a country held to be violating the rules would presumably give reasons as to why the country's actions should be excused. The board might declare itself impressed, in which case the country's actions would be excused. Otherwise, the board would implicitly call on the country to cease and desist.

Everyone knows that exchange rates are only half the story. Surveillance also requires an evaluation of whether demand-management policy is appropriate. At the moment, no clear criterion exists as to whether a country is pursuing excessively contractionary or expansionary policies; just as long as policies are not resulting in recession or inflation in that particular country, the IMF has no basis to complain, even if the set of policies being pursued by all its member countries is collectively inconsistent with a satisfactory global outcome.

Adoption of the reference rate proposal would replace this situation with a criterion that is in principle well defined and is consistent with an acceptable global outcome. A country would be judged guilty of excessively expansionary policies if its level of domestic demand exceeded the sum of potential output plus its equilibrium current account deficit, even if an appreciation of its exchange rate above the reference rate were masking the inflationary potential inherent in this situation. Conversely, a country would be judged to have deficient demand if its domestic demand was less than its productive potential by more than its equilibrium current account surplus, even if this shortfall were being masked by a depreciation of its exchange rate below its reference rate and an enlarged current account surplus.⁵

Why should member countries take note of Fund advice structured along these lines when it is well known that they largely ignore such advice as the Fund gives in its current surveillance operations? First, the Fund would be drawing on a body of analysis that is not available to individual member countries. Without the reference rates and the background of an analysis that draws up a consistent global picture, the IMF offers nothing more than the countries can figure out for themselves. Since all the major member countries have many more trained economists available than the IMF can deploy on any one country, it is rational to take little note of what the Fund says. This changes fundamentally if the Fund is drawing on a body of analysis of what is needed to produce a globally

5. There is an obvious problem with this criterion: A country with an exchange rate that is undervalued by the market might be subjected to inflation if the country bowed to IMF advice and expanded demand. (Similarly, a country whose exchange rate is overvalued by the market, as judged by the reference rate calculations endorsed by the IMF, could be pushed into deflating demand and causing recession.) The IMF would need to be aware of this potential difficulty and request only modest policy adjustments, but one can hold the view that it is desirable to create ex ante demand conditions that will support adjustment if and when the market recognizes reality and brings the exchange rate to the vicinity of the reference rate.

desirable outcome—analysis that is not available to individual member countries. Second, because the outlines of the desirable outcomes will already have been agreed in setting the reference rates, to refuse to comply with surveillance that is guided by those outcomes would be to refuse to will the means even though the end has been willed.

Would the Fund obtain sufficient additional leverage by agreement on the ends, so that members would start changing their policies to conform with Fund advice, or would it also be desirable to change Fund surveillance procedures? My own view is that the main problem has been the lack of a vision of where we want the system to go. I am skeptical that any changes in procedures are likely to have much impact on the major countries like the United States and China. If countries have leaders who understand that national interests are advanced by undertaking actions that are consistent with satisfactory global outcomes, and if the world has a Fund that can advance a convincing picture of what actions those are, there is some chance that, for example, the US Congress can be persuaded to modify its actions. (However, I cannot see Congress changing its actions because it is bullied by the Fund, no matter what procedural innovations are introduced.)

Another Potential Fund Role

Another way in which the Fund could play a more active role in improving the recent functioning of the global economy and financial system is through coordinating a group of emerging-market borrowers into making a simultaneous swap of a significant part of their stock of bonds into growth-linked bonds. The idea of a growth-linked bond is simple enough: Instead of promising to pay x percent each year come hell or high water, the borrower would promise to pay x percent plus or minus the excess of the country's growth rate over its average growth rate over some preceding period (plus, if necessary, a premium that one might expect to be small). Therefore, when the country prospered and grew abnormally fast, it would pay more than the standard x percent; but when it hit difficulties and grew unusually slowly, its payment obligations would be lower. Payments would be shifted from times when they would present unusual difficulties to times when they would be relatively easy. Fiscal policy would gain a built-in stabilizer. Investors would have less reason to fear that the borrower would accumulate an unserviceable level of debt, and they would gain the opportunity of investing in an equity-like instrument that would pay them an exceptionally good return if they succeeded in correctly identifying the countries with good prospects. See Borensztein and Mauro (2004), Council of Economic Advisers (2004), Williamson (2005).

Despite the manifest advantages of this instrument, it hardly exists.⁶ Moreover, private investment managers (at a conference in Izmir, Turkey, in May 2005) declared they had no interest in helping to launch such an instrument. This may seem paradoxical, but it is not in fact difficult to understand. In one of the major discussions of growth-linked bonds, Borensztein and Mauro (2004), the authors identify five reasons why such a market may not start spontaneously:

- **Critical mass.** New and complex instruments may be illiquid. Pricing them involves computational costs. Launching a new instrument therefore requires a concerted effort to achieve critical mass so as to attain market liquidity and spread computational costs. In the specific case of growth-linked bonds, the reduction in default risk that is one of the major expected benefits will be realized only after the share of the debt held in these bonds is substantial.
- **Product uncertainty.** Investors are uncertain about the nature of a new financial instrument and will therefore hold it only if offered a premium; but such a premium may deter borrowers from issuing the new instrument. No individual borrower will wish to bear the costs of pioneering a new instrument. There is an infant-market benefit of such pioneering that may merit some form of social subsidy.
- **Externalities and coordination problems.** A large number of borrowers have to issue a new financial instrument before investors can diversify risk by holding an appropriate portfolio of similar instruments. However, an individual borrower will not take into account the social benefit of assisting others to issue similar instruments. And the holders of growth-indexed bonds are not rewarded for reducing the likelihood that the borrowing country will be forced to default and impose losses on the holders of plain vanilla bonds.
- **Competition in financial markets.** A private financial institution that develops a new financial instrument will incur costs that it will be unable to recoup by maintaining a subsequent monopoly over its provision because such instruments are in general not patentable, and imitation of a successful innovation is easy. The private incentive to develop such instruments is therefore low even if the social benefit is high.
- **Need for standardization.** A liquid secondary market in which investors are able to diversify their portfolios requires instruments with the

6. The restructured Argentine debt contains a growth-linked kicker to pay investors a bonus if growth is unexpectedly rapid. As far as I am aware, this is so far the nearest example to a growth-linked bond.

same features for all the issuers. This is particularly important for conditional instruments where the size of the payment depends on certain standards that need to be unambiguous, verifiable, and similar.

The IMF is in a position to help overcome several of these problems. Most directly, it could use its powers of persuasion to induce a large number of borrowers to issue standardized growth-linked bonds simultaneously, thus addressing the problems identified in the third and fifth bullets above. If growth-linked bonds were to be issued by a number of borrowers simultaneously, there would be a better chance of reaching critical mass quickly (first bullet). The IMF need not be deterred by the lack of a financial incentive referred to in the fourth bullet. Even the probable additional cost facing the pioneering issuers (second bullet) might be more tolerable if there were a widespread perception that a significant number of issuers were making the change simultaneously and thus sharing the infant-market costs. Thus, an active role by some international financial institution—and the IMF is the obvious candidate—may well be indispensable to the successful launching of growth-linked bonds.

Concluding Remarks

The IMF employs more people than ever before, but it is difficult to claim that they play as big a role in the world economy as their predecessors did up to 1970, at least. It is not that the things most of them do, like assessing the solidity of members' financial systems, are not worth doing, but it is that they are not central to the great issues of the coordination of macroeconomic policy. The IMF still performs surveillance operations that in principle reflect its responsibility for this area, but in the absence of a globally agreed framework of a desirable payments pattern the Fund's advice draws on the same body of analysis as do the member country's own experts. If the Fund is to contribute something additional to the debate, it needs to be able to draw on a vision of a globally consistent set of policies. Because in principle there are an infinite number of ways in which the constraint of global consistency can be satisfied if exchange rates are free to move, in practice this requires pinning down exchange rates. Specification of a set of reference rates is a way of doing this that does not ask countries to abandon inflation targeting and floating exchange rates.

This chapter also gave another example of the enhanced role that a revamped Fund could play in the world economy: The Fund could play a leading role in the introduction of growth-linked bonds by a large number of emerging-market members, which would make them much less vulnerable to future crises. It is by embracing opportunities to play such vital roles in the world economy that the Fund could lay to rest the charges of its growing irrelevance.

A skeptic might ask whether major countries would ever agree to rewrite the rule book in a way that might require them to alter their policies. Skeptics may be right, in which case reform along these lines will have to await one of two situations. One is a crisis in which no one can foresee the future but everyone agrees it is desirable to create something different from that which was responsible for the crisis. The other is nirvana in which there are no large exchange rate misalignments and the objective is to prevent large misalignments from reemerging. But even if the skeptics are right and there is little chance of reform along these lines under current conditions, we should think now about what may be required in the future because other things will seem more urgent when the crisis materializes.

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