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A WORLDWIDE SYSTEM OF REFERENCE RATES

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with comments by
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Editorial

On February 24-25, 2006 an international workshop on “Regional and International Currency Arrangements” was held in Vienna. It was co-sponsored by the Oesterreichische Nationalbank and the Bank of Greece, and jointly organized by Eduard Hochreiter and George Tavlas. Academic economists and researchers from central banks and international organizations presented and discussed current research, and reviewed and assessed the past experience with, and the future challenges of, international currency arrangements. A number of papers and the contributions by the discussants presented at this workshop are being made available to a broader audience in the Working Paper series of the Bank of Greece and simultaneously also in the Working Paper Series of the Oesterreichische Nationalbank. The papers and the discussants’ comments will be published in the journal, *International Economics and Economic Policy*. Here we present the seventh of these Working Papers. (The previous six were issued as Bank of Greece Working Papers No. 39 to 44.) In addition to the paper by John Williamson, the Working Paper also contains the contribution of the discussant, Marc Flandreau

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A WORLDWIDE SYSTEM OF REFERENCE RATES

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A paper presented at a workshop organized by the Bank of Greece and the Oesterreichische Nationalbank on 24-25 February 2006 in Vienna and to be published in *International Economics and Economic Policy*. The author is indebted to Edwin Truman, Richard Cooper, Randy Henning, workshop participants, and those at a seminar at the University of Warwick for comments on previous drafts. Copyright Institute for International Economics: All rights reserved.

There is widespread agreement that the major industrial countries do, will, and should utilize macroeconomic frameworks embodying inflation targeting (IT) and floating exchange rates. Some economists wish that those central banks (notably the Fed and the ECB) that have still not formally adopted IT would hasten to do so, but in both these cases the continued control of inflation is such a high-priority objective that one may doubt whether it would make an enormous amount of difference. Intellectual differences on the other underpinning of current macroeconomic policy, namely floating exchange rates, are in practice probably more important. Acceptance that the central bank is better off without a commitment to defend any particular exchange rate (which is my definition of a floating rate) is consistent with three quite different interpretations of how the international monetary system should be organized:

- On the basis of an obligation of free floating, meaning that there should be an obligation not to intervene substantively¹ (except, presumably, for countries that firmly fix their exchange rates).
- Ad hoc floating, in which there are essentially no rules (except that a country should not “manipulate” its exchange rate, whatever that may mean²).
- Managed floating, in which the principles of management are clearly enunciated and the parameters are publicly announced.

This paper makes the case for floating to be managed, according to a well-specified set of rules that prohibit intervention and other policies intended to push the exchange rate away from an internationally agreed norm. Conversely, they would allow (but not compel) intervention that was designed to push a rate toward its agreed international norm. These agreed international norms would be the reference (exchange) rates, and accordingly the system is called a reference rate system.

The remainder of the paper is organized as follows. The next section describes the alternative versions of floating in somewhat more detail, and explains why I am less than enthused about some of them. The following section discusses the charge that

¹ I define non-substantive intervention as encompassing reserve changes as a result of the government’s own transactions and smoothing intervention.

² The best attempt to give this concept some meaning has been made by my colleague Morris Goldstein in Truman (2006), but his proposed answer does not seem to have resonated in official circles.

enunciation of a set of reference rates would make no difference to exchange rate outcomes. This is followed by a consideration of the issue of determining an appropriate set of reference rates.

Three versions of a floating rate system

The version of floating normally taken for granted by economists is a system of freely floating exchange rates. At times economists have worried about whether it is possible to have a pure system of floating rates, because the authorities normally have some of their own transactions in the foreign exchange market and the timing of them might in principle influence the path of exchange rates. One might seek to counteract this by requiring that government purchases or sales of foreign exchange be spread out evenly over time and preannounced for several days or weeks in advance. However, such intervention is hardly likely to have a pronounced influence on exchange rates, and so the alternative is just to ignore it. A system that incorporated an obligation of free floating could simply allow both intervention designed to finance government transactions and smoothing intervention that is intended to minimize the impact of temporary blips without any intention of influencing the level of the rate. There would be a simple test of whether intervention was “non-substantive” (i.e. just aimed at smoothing the rate and financing government transactions), which is that the level of reserves should stay roughly constant over time (or at least increase no faster than can be accounted for by interest on the reserves or a trend buildup of reserves).

The disadvantage that some of us see in a system of floating exchange rates is that they give noisy signals of one of the most crucial macroeconomic prices, namely the exchange rate. The Meese and Rogoff (1983) finding that a random walk out-performs any economic model in predicting the exchange rate at short horizons, which has never been decisively overturned, is proof enough that the signal is a noisy one. If this were a question solely of short-run volatility, then one might overlook it, because while a few of the many studies devoted to examining the impact of exchange-rate volatility on the real economy claim to have found a negative impact, the overwhelming impression they leave is that any effects are small. But that still leaves misalignments, defined as large and persistent deviations of the exchange rate from some concept of equilibrium, which have

also been large on occasion (as anyone familiar with the exchange markets is aware), and which some of us have long felt to constitute the major problem.

So long as the exchange rate between currencies whose value is left to the market (like the dollar and the euro) can vary by more than 50 percent in an era of price stability, it seems reasonable to ask whether performance could not be improved by governments playing a more active role in the foreign exchange market.

The second possible international regime is one of laissez-faire. Anything goes. A non-system, as several economists termed the successor to Bretton Woods when it was first announced to the world. There are no rules, except the famous injunction not to “manipulate” exchange rates. Countries may float if they want to, or fix their currencies in terms of anything else they choose (except gold!), or run any intermediate regime they like, no matter if (like the adjustable peg) it has repeatedly proved a disaster in the past. They can run a quasi-currency board if they prefer, even if it promises to bring disaster to their people, and the IMF may underwrite their idiocy in the name of national sovereignty until the crisis hits.

The disadvantages of this regime are becoming ever more evident as the global imbalances grow larger with no sign of reversal, despite a clear enough intellectual understanding of what needs to be done to reign them in.³ Not only do the present arrangements lack any disciplines that might avoid the escalation of imbalances, but they breed conflicts such as the threat of protectionist legislation by the U.S. Congress aimed at China unless it appreciates the RMB. One could surely wish for an international system that would pressure countries into seeking and adopting a set of policies that are consistent with a satisfactory global outcome and that would outlaw attempts by individual countries to bully others into acting in accordance with its desires.

The third alternative is a regime of managed floating with clearly articulated rules and publicly announced parameters. Two sets of rules have been suggested in the literature. One was that proposed by Paul Wonacott (1958) as a formalization of Canadian policy when the Canadian dollar was floating in the 1950s. He suggested that countries should be allowed to intervene in order to resist the trend of the exchange rate.

³ See, for example, Cline (2005).

Thus a country could legally intervene in order to buy reserves if and only if its currency was appreciating, since that would slow but could not reverse the movement. Similarly, a country with a depreciating currency could legally intervene in order to sell but not to buy reserves. The trouble with this rule is that it makes little sense if misalignments occur, since then one may wish to magnify a trend where it is tending to correct a misalignment.

The second type of rule, and the one I discuss in this paper, is a reference rate system. This could help to prevent large misalignments if the reference rates were built on a vision of a globally consistent outcome. That claim is developed in the subsequent sections of the paper, while here I merely describe what a reference rate system would consist of.

The concept of a reference rate was introduced many years ago by Ethier and Bloomfield (1975). They thought of a reference rate as an officially agreed exchange rate that would carry with it an obligation *not* to intervene (or undertake other actions intended to influence the exchange rate) in a way that would tend to push the market exchange rate *away* from the reference rate. Countries would be allowed to intervene, but only in an internationally sanctioned way—to push the rate *toward* the reference rate. So they would be allowed (but not compelled) to buy reserves when their currency was too strong (relative to the reference rate) and sell reserves when it was too weak. But buying reserves when the currency was weaker than the reference rate (or selling them when it was stronger) would be prohibited. The system provided a way of disciplining countries, although it also permitted countries to discipline markets provided that they did so in a way that was recognized as compatible with the world interest. Ethier and Bloomfield did not address exactly *what* concept of the exchange rate was the relevant one for defining a reference rate, but clearly it is what matters for the macroeconomy: the real effective exchange rate.

A reference rate system would be one in which each country, or in practice at least each major country, would have a reference rate. For countries with floating rates, they should be required to express their reference rate in terms of the effective exchange rate rather than a bilateral exchange rate, so as to avoid the danger that a currency can

become misaligned through the movements between third currencies. Countries often choose to have a fixed rate, however, when they trade primarily with a particular country (or group of countries that themselves maintain fixed rates). In this instance movements of third currencies are unlikely to cause major misalignments. If one wants the international system to sanction fixed rates, then countries in this situation should be allowed to express their reference rate as a bilateral rate against a single other currency. In either event, it would be necessary for the system to include a mechanism for determining and subsequently revising the reference rates. This is a subject considered in due course.

Would reference rates make any difference?

Before turning to the issue of determining reference rates, however, it is appropriate to discuss the charge that naming a reference rate would make no difference because the market would ignore the announcement and intervention by the authorities is ineffective.

If sterilized intervention in the foreign exchange market is effective, it is clear that the act of naming a reference rate and imposing an obligation to limit intervention to that which is consistent with the reference rate would have an impact. However, it is still disputed as to whether foreign exchange market intervention is effective or not (see the contrasting views of Sarno and Taylor 2001 and Schwartz 2000, or the judicious middle view of Truman 2003). Personally I find it difficult to reconcile the obvious interest shown by dealers in knowing whether the central bank has, or plans, to intervene with the view that intervention is completely ineffective. Similarly, if one accepts the empirical evidence that concerted intervention is more likely to be effective than isolated intervention by a single country (a conclusion that goes back to the Jurgensen Report 1983, was reinforced by the seminal work of Dominguez and Frankel 1993, and accepted by both Sarno and Taylor, and Truman, in the papers cited above), one can hardly also deny that intervention can be effective. The question is when it is effective, or more effective, and whether and when its effects are long lasting, rather than whether it has any effect at all.

Two papers presented to a conference held in 2004 at the Institute for International Economics seem to me to be important in advancing our understanding of intervention. In one of these papers, Chris Kubelec (2005) argued, and presented empirical evidence in support of the thesis, that intervention is more effective when there is a large misalignment that needs curbing. The intuition is that markets sometimes go off on errant paths, but that they may be pushed back toward reality by a determined act of the authorities. A central bank that tries to defend a disequilibrium exchange rate will be run over by the market, whereas one that intervenes when it is the market that has established a disequilibrium rate is far more likely to have an impact. It is a debatable question as to whether the impact of such intervention should be counted as long lasting. If one believes that exchange rates have a tendency to revert back toward equilibrium in the long run, then one would neither expect nor want intervention to have an effect in that long run. The function of intervention is to lessen the size and length of misalignments, not to influence the long run average exchange rate.⁴ The view suggested by this analysis is that exchange rates are best determined by constructive interaction between the market and the authorities, rather than by either of them acting in the pretence that it is all-powerful and the other does not exist.

The other paper from the 2004 conference (Fratzscher 2005) argued that one should really be thinking of intervention as comprising two instruments rather than one: buying and selling foreign exchange, and also what he calls “oral intervention”. Oral intervention, a.k.a. jawboning, involves telling the market things like what the authorities believe the equilibrium rate to be (or what they think a disequilibrium rate is). One might expect that oral intervention would become increasingly effective if and as the authorities establish a track record of naming plausible estimates of equilibrium exchange rates.

Sarno and Taylor (2001) concluded their survey of intervention policy by arguing that foreign exchange market intervention actually works not just through the two traditional channels—the portfolio balance channel and the signaling channel—but through a third channel too, which they called the coordination channel. The signaling channel has traditionally been used to refer just to signaling future monetary policies

⁴ It follows that tests of the effectiveness of intervention that treat all interventions as equal, irrespective of whether the central bank is trying to reduce a misalignment or defy the market, are worthless.

(which invites the Truman 2003 rebuttal that if the signaling is correct then the channel is largely redundant and if incorrect its influence won't last long). By the coordination channel Sarno and Taylor meant that monetary authorities might use intervention to induce many smart money traders to act simultaneously to sell a currency that is overvalued according to the fundamentals so as to prick a bubble. In other words, they are supplying information to the market, which is the same as Fratzscher envisages them achieving through "oral intervention". Of course, they achieve it indirectly rather than directly, but also put their money where their mouth is when they provide information in this indirect way. But essentially both Sarno/Taylor and Fratzscher subscribe to the view that supplying information to the market may influence exchange rates.

One purpose of a system of reference rates would be to increase the effectiveness of individual countries' intervention policies. If concerted intervention is more effective when the concertation is only bilateral, then it is natural to suppose that it would be even more effective to have multilateral endorsement, such as would be provided by a reference rate system. So long as a country also sees advantage in the rate that has been endorsed multilaterally, then it has nothing to lose and everything to gain by participation in a reference rate system. The crucial issue therefore becomes one of securing that the procedure used to establish the set of reference rates is one that gives countries an assurance that the reference rate assigned to them will be advantageous for them.

The other purpose of a reference rate system is to permit a much more focused process of surveillance than is possible otherwise, with the object of improving global macroeconomic performance. The mere fact that a country would need to have a reference rate endorsed by the international community as a condition of intervening would introduce a degree of international influence on a country's policies that is currently absent. The surveillance process could also examine a country's policies 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 (see the next section).

It is straightforward to examine whether a country's reserves have increased or decreased and whether the exchange rate has been stronger or weaker than the reference

rate. However, 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 monetary policy. The question to be asked here is whether the policy interest rate has been set appropriately for domestic objectives (such as achieving an inflation target, or internal balance for a central bank that subscribed to a more Keynesian description of its policy 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 non-economic reasons,⁵
- undertake sovereign borrowing in foreign currency, or
- intensify subsidies to capital imports or controls on capital exports.

⁵ Examples of legitimate controls would be controls on the import of firearms or drugs.

Who would supervise these rules and what would happen if they were violated? In the first instance, the IMF staff might draw up regular reports (monthly or quarterly) about which countries were intervening inappropriately or otherwise violating these rules. Their reports would go 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. Some form of sanctions, such as suspension of IMF voting rights, might be applied to a country that flagrantly disregards surveillance, although I do not propose to discuss the issue of sanctions further in this paper.

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; 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.⁶

⁶ 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.

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? The basic answer is: Because 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 desirable outcome—because that analysis is not available to individual member countries.

Calculating reference rates

A reference rate system would require agreement on the set of reference rates. I discuss first the principles that should underlie determination of these rates, and then the procedures that might best be used to achieve agreement on them.

The appropriate theory to use in calculating a set of reference rates would be the mainstream theory embodied in the macroeconomic model used explicitly or implicitly by just about every central bank in the world, according to which the principal endogenous determinants of the current account are income and relative prices⁷. Income is determined by the full employment condition⁸ and prices inherited from the past. In order for this system of equations to generate a (consistent) set of exchange rates, one needs a (consistent) set of current account targets. One may think of these as being generated by the intertemporal theory of the current account (see Obstfeld and Rogoff 1995); in other words, by savings and investment schedules in the different countries of the world. For developing countries and emerging markets, a crucial issue is how to maximize the growth rate. I argued in Williamson (2003) that a competitive exchange rate is a decisive influence on the propensity to invest, but there is no point in a high

⁷ Krugman (1991) termed this “the Mass. Avenue model”, since it is the theory embraced both in Mass Ave, Cambridge Mass and Mass Ave, Washington D.C.

⁸ Or average income over the cycle; the two will be equivalent unless some areas systematically operate at a lower pressure of demand.

propensity to invest if there are no funds (savings) to effect the investment (and vice versa). The growth-maximizing exchange rate is that where these two considerations balance at the margin. It implies a particular current account balance at full capacity output, which would be that inserted in the multilateral system as the current account target.

There are several different ways of approaching the task of calculating a set of exchange rates to use as targets. My own approach (Williamson 1994) 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 matched the targets simultaneously in all the countries modeled (when they were all at internal balance). It has often proved difficult to secure convergence within a reasonable time horizon, leading many analysts who started from a similar intellectual position to use instead a partial equilibrium approach. This uses estimated trade and income elasticities to calculate where the equilibrium exchange rate is, given estimates of deviations from internal and external balance. Another approach uses an adjusted purchasing power parity approach, with adjustment being made for changes in factors that are known to influence the equilibrium exchange rate (like net foreign assets, relative productivity growth, the proportion of output accounted for by manufacturing, and commodity prices). The disadvantage of this approach is that it requires identification of a base period that was reasonably close to equilibrium. Goldman Sachs dynamic equilibrium exchange rates (GSDEERs) are estimated by a single dynamic ordinary least squares estimation for all the 35 countries now in the Goldman Sachs panel; this amounts to assuming that (apart from the country-specific dummies) the parameters of the equation (for productivity, terms of trade, and net international investment position/GDP) are identical for all the countries (O'Neill et al. 2005). Another approach, at least for single countries though I do not see how it could be applied to a multi-country system, is by estimating a dependent economy model. A single equilibrium exchange rate can also be calculated by a single-equation reduced form estimation that makes use of unit-root econometrics.

The obvious location to establish an internationally agreed set of reference rates would be the IMF. I would envisage such a process starting by the IMF staff using their favored approach, or perhaps a variety of approaches, in order to generate a suggested set

of reference rates for all IMF member countries, or at least for the larger countries (which certainly ought to include the larger emerging markets). 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 accordingly, making sure that the set of reference rates remained globally consistent. The staff would then present their 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 rate 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 local 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 unrealistic to imagine that in this day and age it would be possible to keep the agreed figures secret.

The arrangements just described are designed primarily for countries with floating currencies. One might hope that countries will in future peg only if their trade is conducted overwhelmingly with the countries to whom they peg (or countries that also peg to the same currency). If this hope is not fulfilled, so that there remain countries that peg even though the movements of floating currencies can have a profound impact on their real effective exchange rate, then a reference rate system could in principle call for a currency peg to be changed. For example, if country A pegged to the currency of country B and B's currency depreciated because third currencies appreciated against it, then the reference rate of country A's currency in terms of country B's currency would be likely to appreciate. There would be a potential inconsistency between the peg and the reference rate rule. One might mitigate this by permitting continued intervention in defense of a peg unless the undervaluation as compared to the reference rate became too great (it would be necessary to decide a rule saying how large a disequilibrium should be tolerated), but at some point the international system would have to insist on a revaluation. Of course, any international rule that helped the market to forecast impending parity changes would be a problem to the authorities—which points to the advisability of countries that do not satisfy the condition of trading predominantly with their peg currency (or bloc) allowing their currencies to float.

In practice I would expect by far the most contentious stage of this process to be achieving agreement on the set of current account targets to form the basis for the set of reference rates. By comparison, translating an agreed set of current account targets into an agreed set of reference rates is a pretty mechanistic exercise. The difficulties in agreeing a set of current account targets were spelled out by Richard Cooper (1994). He emphasized that a country's savings/investment imbalance depends *inter alia* upon its fiscal policy, on its savings rate now and how the savings rate will evolve in the future, as

well as on its investment opportunities. There are doubtless different views on investment possibilities and the evolution of saving rates, but these are essentially technical issues, even if difficult ones. The critical issue is the implications for fiscal policy, because a binding constraint on fiscal policy would indeed impose an obligation on democratic legislatures. Presumably anyone inventing a set of current account targets today would not assign a target deficit of over 6 percent of GDP to the United States, yet a lower figure would, according to most economists, imply a tighter U.S. fiscal policy.

It would be both unrealistic and anti-democratic to try to bind fiscal policy. One possibility would therefore be to accept fiscal policies as they are, and adopt the set of reference rates that they imply. The disadvantage of this strategy is that it would mean foregoing any attempt to influence the fiscal policies countries adopt. One may recognize that international inputs to fiscal policy are not going to bind countries, but still regard the international implications of a country's policies as a dimension that should be fed into the political process. One possibility would be to adopt a procedure like that of Goldman Sachs, which essentially foregoes the use of current account targets and instead forecasts what current account balances ought to be using variables that can reasonably be taken as pre-determined.

Concluding remarks

This paper has sketched what a global reference rate system might look like, what its advantages might be, and how it might operate. Such a system would be consistent with the maintenance of the basic parameters of national economic frameworks—inflation targeting and floating exchange rates—as these are increasingly operated in the main industrial countries and emerging markets. It would add merely an obligation not to intervene in the exchange markets (or to make other attempts to influence an exchange rate) in a direction that was decided by an agreed international procedure to be contrary to the world interest. The paper included a sketch of what that agreed international procedure might be.

Such a system would serve two main purposes. One would be to strengthen the hand of countries that wished to intervene to limit the misalignment of their exchange

rates, for example because of a recognition of how an overvalued currency is capable of sabotaging a country's growth prospects. The other would be endow the IMF with a framework that would permit it to carry out an effective surveillance operation, which might give some hope of reversing the buildup of global imbalances before disaster strikes. This offers better prospects than laissez-faire of stemming the current drift to disaster, and better prospects than an attempt to legislate free floating of keeping future misalignments modest.

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DISCUSSION

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“A worldwide system of reference rates” is a fascinating article. It provides a bold proposal for reorganizing the international monetary system on the basis of globally agreed upon exchange rate “reference” parities, supported by central bank interventions. As Williamson emphasizes, this proposal runs counter the widespread consensus that the major industrial countries should utilize a combination of inflation targeting and floating exchange rates. According to this majority view, central banks would be better off without a commitment to defend any particular exchange rate, for interventions do not work or at least, commitment to an exchange rate target only heightens the likelihood of a speculative attack. With this in mind, central banks should not risk their reputation on a foreign exchange target, and concentrate instead on domestic targets, such as the inflation rate where they can achieve better results and build a track record. The exchange rate will have to take care of itself.

Such a view, Williamson forcefully argues, is irresponsible at best. Putting the burden of adjustment in the hands of the market ignores the deep flows that are known to plague its operation. This includes the persistent mis-adjustments that have been observed since generalized float prevailed in the 1970s, as well as the problem of excess volatility. Day-to-day changes in the exchange rate between leading currencies are out of line with changes in underlying fundamentals. Economists have discussed extensively these problems in the abundant literature documenting the extreme inefficiency that characterizes floating exchange rate (see MacDonald 1988 for an early survey) and in the famous results by Meese and Rogoff (1983) according to which no popular model of exchange rate determination achieve better results than a mindless random walk model. Currency traders have a name of their own for the erratic movements in the foreign exchange market: the exchange rate is for them a “lost cause”.

The problem, Williamson argues, is that there is more to these results than a mere academic interest. Mis-adjustment is costly and potentially damaging for the international system. The inefficient pricing of leading exchange rates entails losses by itself and also by its capacity to put the world trading system at risk, since it increases the risks of protection. The implication, he suggests, is that there is a need to find a way to anchor speculation and limit inefficiencies. The

most natural way to do it, he further argues, is to rely on publicly announced reference rates, supported by central bank intervention.

A crucial implication of the proposal, therefore, is that central bank interventions – and in particular, sterilized interventions – can influence the exchange rate. This is a matter where the jury is still out despite some recent evidence contradicting the older wisdom that interventions do not work (see Sarno and Taylor 2001 for a survey). Williamson cites recent research that support the notion that central bank interventions can be effective for the kind of stabilization that his proposal requires. One is by Kubelec (2005) who presents empirical evidence in support of the thesis that intervention is more effective when there is a large misalignment that needs curbing. The intuition is that markets sometimes go off on errant paths, but that they can be pushed back toward reality by a determined act of the authorities. Other relevant material is provided by (Fratzscher 2005) who argues that “oral intervention” (i.e. telling the market what the authorities believe the equilibrium rate to be) can become increasingly effective as authorities establish a track record of naming plausible estimates of equilibrium exchange rates. In a similar vein, Sarno and Taylor (2001) emphasize the existence of a “coordination” mechanism whereby central banks supply information to the market, encouraging it to focus on certain parities and thereby improving the quality of its operation.

Williamson’s proposal also includes details regarding implementation. In particular, he emphasizes that the worldwide system of reference rates would have to be backed by a multilateral surveillance agency in charge of monitoring unwelcome developments. Specifically, a FX imbalances watchdog would have to point its finger at mis-behaving countries. Williamson would want this role to be played by the IMF. The reasons put forward are simple: the IMF is a multilateral body. The IMF has expertise in international money. The IMF has experience and credibility with macro-modeling and could thus rely on a variety of econometric exercises to compute reasonable ranges for exchange rate equilibrium. And finally, the IMF has superior knowledge on cross countries issues, and thus a comparative advantage to become the repository of equilibrium parities. It is thus in a unique position to encourage countries to take action on the basis of its indications.

I find myself very much in agreement with several key aspects of John Williamson’s paper. In particular, he is absolutely right to remind us that one of the main challenges of today’s

international monetary system is the considerable volatility of exchange rates and scope for persistent mis-adjustment that it displays. While so far protectionist pressures in the US Congress have concentrated mostly on those countries that have failed to let their exchange rate float and managed it in a way that was judged inadequate (China), one should certainly ponder the policy reactions that countries in the world would have in the event of a severe dollar depreciation. Having a common, multilateral agency in charge of monitoring all mis-adjustments would help to identify all disequilibria arising from both inadequate pegging and erratic floats.

Another area where I fully agree with Williamson is his discussion of the coordinating role of foreign exchange interventions. It is obvious from the empirical literature on exchange rates that FX markets are ridden with information problems that have a scope for creating “beauty contest” situations where agents are more concerned with guessing what other agents believe the exchange rate will be than thinking about what should be the equilibrium exchange rate. In such a setting, there is undoubtedly scope for hiring a conductor of the international monetary orchestra. This appointment, without costing much real resources, would have a scope for removing a lot of unnecessary uncertainty from the system, and would thus be tantamount to a “free lunch”.

Historical evidence provides support to this view. The notion that reference rates can anchor international monetary relations goes back to an early 20th century experiment whereby the exchange rate of the Austro-Hungarian florin was informally targeted to the German mark. The arrangement lasted between 1896, when it was implemented and 1914 when it was suspended as a result of the outbreak of WWI. This early experiment in reference rates targeting may be dubbed the “mother of all currency bands”, as it inspired economists such as von Mises, Keynes, and von Haberler, and through them, although they generally ignored the original experiment, modern analysts of target zones, who all emphasized the benefits associated with adopting a reference rate.

The Austro-Hungarian experiment has important lessons for the issue at hand today. In a recent paper with John Komlos (Flandreau and Komlos 2006) we argued on the basis of this episode that the very adoption, by monetary authorities, of a currency target, induces drastic efficiency gains. These benefits go beyond the simple effect a reference rate can have in terms of stabilization of the currency. The rationale for this is illustrated in Table 1 where I report the results of standard efficiency tests for the florin/mark exchange rate before and after the system

of reference rates was adopted (1896). As can be seen, the forward premium became an unbiased predictor of actual exchange rate changes *after* the system of reference rates was implemented. This may be taken as consistent with the coordination channel hypothesis put forward by Williamson.

Table 1. A free lunch?
Market efficiency before and after the reference rate

$$e_{t+1} - e_t = \alpha + \beta(f_t - e_t) + v_{t+1}$$

Period	α	β	Adj.R ²
1876 :12 - 1896 :3 N=232	-0.26*10 ⁻³ (-0.42)	0.54 (0.89)	-0.8*10 ⁻³
1896 :4 to 1914 : 8 N= 157	0.000 (.15)	0.99 (5.23)	0.14

Source : Flandreau and Komlos (2006).

Note: The null hypothesis that the forward premium ($f_t - e_t$) is an unbiased predictor of actual exchange rate changes ($e_{t+1} - e_t$) implies that $\alpha=0$ and $\beta=1$. As can be seen, this hypothesis is rejected for the period 1876-1896 but accepted for 1896-1914.

Thus I do find much appeal in the diagnosis by Williamson and in the logic of the proposed cure. However, I do have some reservations regarding implementation. It may be useful to have a monetary system watchdog in charge of tracking exchange rate disequilibria. But the actual implementation of foreign exchange intervention will have to be delegated to local authorities. The scheme will therefore have to deal with a standard agency problem. One possibility is that the multilateral watchdog is to exercise close stewardship on monetary developments, always having the last word and being able to implement the required adjustments eventually, in which case local sovereignty will be severely reduced. This is highly unlikely. The remaining alternative is that the watchdog is to act as a mere advising body, leaving much leeway to local policy making. But in this case it is doubtful that any speculator will put his money where no official body with operational capacity puts its word.

To state the fact in yet a different fashion: every exchange rate disequilibrium can be seen as resulting from a coordination problem: within authorities and between authorities and markets. Would coordinating on the formulation of adequate “reference rates” while leaving

implementation to the uncoordinated actions of markets and authorities solve problems? This is doubtful.

Another related item is the identification of the relevant body in charge of tracking disequilibria. Williamson emphasizes the role of the IMF. The IMF has undoubtedly outstanding expert knowledge in international macroeconomics. But had it had any capacity in anchoring the international monetary system on an array of reasonable exchange rates wouldn't it have already succeeded in doing so? After all, providing for exchange rate stability was part of the initial mandate of the Fund. On the other hand, I find myself unable to think of an adequate alternative. One that comes to mind is the BIS. The BIS has expert knowledge and an excellent command of monetary policy. Moreover, unlike the Fund, it is relatively well insulated from political control, since its constituency is predominantly independent central banks. It may be more feasible for it to issue regular statements pertaining to equilibrium exchange rates. And, given that it is a club of central banks, such statements may carry some clout in the market.

Yet, assuming that all obstacles have been removed and that in the best of all worlds, governments prove happy with that (this is a big assumption), a major question remains: why should central bankers predominantly worried with inflation, financial stability, and asset price bubbles would willingly add to their already pretty loaded plate the extra burden of protecting the world trading system? For better or for worse, and Williamson is right to remind us that it may be for worse, the most likely bet is that for any foreseeable future, exchange rates will keep taking care of themselves.

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