

THE DOLLAR/EURO EXCHANGE RATE¹

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ABSTRACT. While the practical policies toward the exchange rate of the Fed and the ECB are very similar, there is a major philosophical difference between the American view that governments have no business to worry about capital flows and exchange rates versus the European view that these things matter and that floating is simply not defending a particular rate. Under the first view, the only issue is what determines the exchange rate. The literature has concluded that not much can be said about this in the short run, but that in the long run misaligned rates tend to return toward equilibrium ("PPP"). Under the second view, it makes sense to ask what is the "fundamental equilibrium exchange rate" (or some FEER-like concept). Most of the evidence suggests that the dollar/euro rate at the time of writing the article (\$1.27) represented at most a modest overshooting.

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Keywords: Exchange Rates; Equilibrium Dollar/Euro Rate; Fundamental Equilibrium Exchange Rate.

RÉSUMÉ. Alors que les politiques menées par le FED et la BCE en matière de taux de change sont très voisines, les approches de fond diffèrent nettement entre les Américains qui considèrent que ce n'est pas le rôle des gouvernements de se préoccuper des mouvements de capitaux et des taux de change, et les Européens pour qui, au contraire, ces points comptent et qui estiment que le change flottant ne se ramène pas simplement à défendre un taux particulier. Dans la première approche, seuls importent les déterminants du taux de change. La littérature conclut qu'à court terme, on ne sait pas grand chose à cet égard, mais qu'à long terme, des mésalignements tendent à ramener les taux vers leur niveau d'équilibre (Parité de pouvoir d'achat). Pour les tenants de la seconde approche, il faut s'interroger sur ce qui constitue "le taux de change d'équilibre fondamental" (ou toute notion voisine). Il est alors clair que le taux de change dollar/euro (\$1,27) lors de la rédaction de cet article représente au plus un léger surajustement.

Classification *JEL* : 31.

Mots-clefs : Taux de change ; parité d'équilibre dollar/euro ; taux de change d'équilibre fondamental.

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Neither the Federal Reserve Board nor the European Central Bank shows the slightest desire to have the exchange rate at which their currencies trade against one another determined by anything other than the foreign exchange market. Neither of them hanker after a fixed exchange-rate system. Neither of them make a practice of intervening in the foreign exchange market.³ Neither of them has a target for accumulating reserves. Neither display any sympathy for a system of target zones (a.k.a. crawling bands).

Nevertheless, this agreement may conceal a crucial philosophical difference about the role of the authorities in exchange markets. One view, which I have certainly heard expressed by a US official but which I suspect would seem alien to Europeans, is that it is improper for the official sector to have views about the equilibrium (or "normal", or "underlying") capital flow or, therefore, the equilibrium exchange rate. These are matters for the market to decide, and the role of the authorities is simply to foster conditions in which those private decisions about where to hold capital can be effected. Exchange rates are a by-product of those decisions and should be of no concern to officials.

The alternative view is that floating the exchange rate simply means accepting the reality that it is imprudent to defend a hard margin. This is perfectly consistent with the view that the authorities should think about underlying capital flows, and seek to avoid emergence of a risky debt situation that could generate a crisis. One who holds this view may indeed argue that it is sensible for the authorities to ask themselves what underlying capital flow is implied by their medium-term plans, and believe that if all countries were subject to this discipline then the consistency of their mutual plans would be a natural check on whether countries were following consistent policies. S/he might also hold that requiring authorities to disclose those plans to the market could be useful to market participants in forming coherent expectations that would help guide their policies in the exchange markets and avoid extreme misalignments of exchange rates.

The first section of this paper explores what there is to say about the exchange rate between the euro and the dollar under the first of those views. Under the second view, there are a number of additional issues to consider, like how one should determine the "target" exchange rate and what policies might be adopted to encourage the rate to move toward the target. A third section will spell out the implications of the preceding for an understanding of what has happened to the dollar/euro rate⁴ since creation of the euro.

3. Fratzscher (2004) shows that the Fed intervened just once since 1999 (to support the euro in September 2000) while the ECB has intervened four times since it was established at the beginning of 1999.

4. I describe it as the dollar/euro rate rather than the euro-dollar rate for two reasons. The first is to avoid any ambiguity with euro-dollars in the traditional sense, meaning dollars held in bank accounts in Europe. The second is because this is the way that the rate is usually quoted on both sides of the Atlantic, as so many dollars per euro rather than vice versa.

■ THE EXCHANGE RATE UNDER PASSIVE AUTHORITIES

If one believes that the authorities have no business thinking about what the capital flow or the exchange rate should be, then presumably the only intellectually worthwhile activity is trying to figure out what determines the path of a freely floating exchange rate. This is an activity that has generated a great deal of effort since the advent of floating, though with fairly limited results.

Attempts to understand the path of a freely floating exchange rate have yielded basically three results. One, due initially to Meese and Rogoff (1983) and never since decisively refuted despite numerous attempts, is that in the short run – for time horizons out to a year or so – the exchange rate follows something close to a random walk. Second, however, there is now reasonably decisive evidence (Rogoff, 1996) that in the long run the real exchange rate tends to be mean-reverting, with the mean traditionally labeled “purchasing power parity” (PPP) in this literature⁵. A corollary of this is that one expects any secular inflation differential to be offset by exchange rate changes; but since at the moment both the Fed and the ECB seem firmly committed to low inflation, this gives little reason to predict any secular change in the nominal dollar/euro rate. The third result is somewhat at variance with the second: it is that countries in the catch-up phase of growth benefit from what is called a Balassa-Samuelson real appreciation, after Balassa (1964) and Samuelson (1964).

The theories that have fallen victim to the random walk hypothesis come in two varieties. The first group consist of economists’ structural theories of the exchange market: theories that movements in the exchange rate can be predicted by knowledge of relative interest rates, or portfolio holdings, or other “fundamentals” that have been incorporated into formal models by economic theorists. None of these seem to have any significant explanatory power in the short run. The second group consists of “technical” models of “the trend is your friend” ilk. These do not perform well if tied down to say that the trend is always your friend, or by requiring that they include a way of forecasting turning points, but many analysts still believe that they incorporate an uncomfortable but real truth: that exchange rate changes do build up a momentum that repeatedly leads rates to overshoot.

In the longer term, many analysts claim to have found evidence of a reversion to the mean by the real exchange rate, but many others have also presented persuasive evidence of the Balassa-Samuelson effect. Both cannot be right if they are speaking of the same countries over the same historical periods: perhaps exchange rates revert to an unchanging mean, or perhaps the mean is tending to change over time, but both cannot be true simultaneously. In fact, the two findings can be reconciled rather easily by recognizing that they apply largely (or even entirely) to different universes of countries. The tests of relative PPP have largely (entirely?) been conducted on countries that were at a similar stage of development throu-

5. No one (except perhaps *The Economist* when defending its Big Mac index) argues that exchange rates tend toward absolute PPP; it is relative PPP that is the criterion here.

ghout: the US *versus* the UK, or France *versus* the UK, or between other European countries for periods that started after their industrialization was essentially complete. The Balassa-Samuelson tests, in contrast, were performed on countries of which one party was in the process of catching up: Japan *versus* the US (prior to 1990), or East *versus* West Europe in the 1990s. It is not difficult to suggest that the correct formulation should speak of a reversion of the real exchange rate to equilibrium, and to recognize that the equilibrium real rate will be appreciating (especially in terms of a broad price index) in a country that is in the catch-up phase of growth. Since both the United States and Europe are past that stage of development, one should not expect a trend appreciation or depreciation in the real dollar/euro rate on account of this factor.

Once one recognizes that what the PPP literature is talking about is reversion to equilibrium, one has to pose the question as to whether one would expect the equilibrium real rate to be systematically influenced by other factors besides the Balassa-Samuelson effect. Rogoff (1996) mentions cumulated current account deficits (i.e. foreign asset positions, which have to be serviced) and government spending as a proportion of total spending (since governments tend to devote a larger fraction of their spending to non-traded goods) as possible candidates. Factors that the FEERs' literature has suggested might be relevant are changes in the underlying capital flow, changes in foreign asset positions (again), permanent changes in the terms of trade, and some authors again include changes in government spending (Williamson, 1994, p. 2). There does not as yet seem to have been much in the way of attempts to test whether these factors have a discernible impact on the equilibrium real rate toward which the market rate tends to revert in the long run. The tests that have been done show that price factors are sufficiently important to drive a reversion to equilibrium even if that equilibrium is assumed to be unchanging, but this does not rule out the possibility that there are also changes in the equilibrium rate that occur as a result of some of these factors.

■ A TARGET FOR THE DOLLAR/EURO RATE

Under the view that floating means that the government has no right to think about whether capital flows may be building up a crisis potential, the only issue worth considering is what drives market exchange rates, as discussed above. But one often encounters discussions also of what exchange rates "ought" to be. This can be rationalized in terms of the alternative approach to exchange rate policy, which regards governments as having a legitimate interest in avoiding – or even a duty to try and avoid – crises.

The medium-run target for an exchange rate is what in Williamson (1983) I labeled the "fundamental equilibrium exchange rate" (FEER). The term was coined as the antonym to "fundamental disequilibrium" in the Bretton Woods sense, which meant that the exchange rate was at a level that made it impossible to reconcile internal and external balance. Conversely, therefore, a FEER was the (real) exchange rate that would make it possible to achieve both internal and external balance simultaneously in the medium term. Internal balance is no lon-

ger a particularly controversial concept; it is usually interpreted as the output level that achieves the non-accelerating inflation rate of unemployment (the NAIRU), sometimes called the natural rate of unemployment. External balance is a lot more difficult, because it is not the overall balance but the current account balance that one expects to be uniquely associated with a particular real exchange rate when both domestic and foreign economies are at internal balance, and under high capital mobility a range of current account outcomes will normally be financeable (and therefore consistent with zero reserve change, or a trend increase in reserves). My own way of pinning down a unique value for the current account balance is to say that the capital flow, the counterpart to the current account balance, should be the "underlying capital flow" (the average, sustainable flow). Identifying this involves an element of judgment as to what is normal and sustainable, and may also involve a normative judgment as to whether some other policies – in practice, one has fiscal policy in mind – need to change in order to achieve a sustainable situation.

When the IMF became interested in estimating equilibrium exchange rates after the ERM crises of 1992-93, it emphasized the normative content of what it was seeking by calling it a desirable equilibrium exchange rate, or DEER (Bayoumi *et al.*, 1994). Nevertheless, the content appeared basically similar to what I had sought. I also argued that what Sebastian Edwards and Ibrahim Elbadawi were calling an equilibrium real exchange rate (ERER) in Williamson (1994) was basically the same animal, even though their analytical approaches were significantly different. And the IMF has maintained the tradition of identifying an equilibrium exchange rate in this way in the paper of Alberola *et al.* (1999).

Jerome Stein's NATREX, which also appeared in my 1994 volume, is more different, being the equilibrium exchange rate under cyclically normal conditions. Specifically, Stein treats interest rates as a part of the fundamentals determining the NATREX to the extent that they can be attributed to "permanent" factors, but disregards them to the extent that their movements are purely cyclical. The idea of looking for an equilibrium exchange rate regardless of whether or not it possesses attractive normative properties was taken to its logical conclusion by Ronald MacDonald (see MacDonald and Marsh, 1999), with his behavioral equilibrium exchange rate, or BEER. The BEER asks what exchange rate was in fact the equilibrium rate toward which the actual rate tended to revert over some previous period. A similar concept is used by Agnès Bénassy-Quéré *et al.* in Bergsten and Williamson (2004). The fact that it is intentionally free of normative content does not necessarily imply that it will be better in terms of forecasting what may happen to exchange rates in the future, for the BEER assumes that the past equilibrium will continue to prevail. The FEER leads the analyst to question whether that is possible, or whether the past equilibrium was due to factors that are unsustainable and therefore bound to change at some future date.

Yet another candidate for a FEER-like concept is the Goldman Sachs dynamic equilibrium exchange rate (GS-DEER). This is the exchange rate that would produce balance in the basic balance of payments, defined as the current account plus the flow of FDI and portfolio

investment (thus excluding short-term capital, on the ground that a lot of this is likely to be hot money, and official reserve changes). The GS-DEER is very sensitive to changes in productivity, because high productivity attracts a private capital inflow seeking the high returns that it is expected to produce, and therefore permits the sustainable financing of a large current account deficit.

Suppose that policymakers agreed on a target for the dollar/euro exchange rate, based on one of these concepts. So what? What policies could they deploy in order to move the exchange rate toward that target?

There are of course a whole range of policies, varying from trade restrictions to capital controls, which might at one time have been wielded to influence an exchange rate, but that no one would consider using in the context of trying to move the dollar/euro rate today. In fact, there are only two (or three, depending on how you score them) policies that would now be candidates for use in exchange-rate management. One is monetary policy, and the other is intervention policy.

No one doubts that monetary policy can be used to shift the nominal exchange rate. An increase in the money supply, whether the result of unsterilized intervention or not, will depreciate the currency. In order to be sure that such a change in the nominal exchange rate will not be canceled out by inflation and restore the original real exchange rate, it may be necessary to use a complementary (deflationary) fiscal policy. But if one is prepared to wield these macro policy instruments with these objectives in view, there is little reason to doubt that they would produce the desired effects. What many people argue nowadays is that this is a questionable way to conduct macro policy. Why should the present generation be forced to save more in order to achieve a more depreciated target for the real exchange rate?

The objections to the possible use of intervention policy to influence the exchange rate focus not on its questionable side-effects but on whether it would be effective. It has been argued by Marcel Fratzscher (2004) that intervention policy really comprises two instruments, oral intervention (sometimes known as “jawboning”) and sterilized intervention. Whether either or both have any lasting, systematic influence over the exchange rate continues to be a disputed question. I am among those who believe that both forms of intervention can be effective, especially if undertaken when the rate is far from equilibrium (see Kubilek, 2004), but I would not claim that either has a dependable impact that can be relied on to supply an extra policy instrument to resolve the famous trilemma. At most, intervention may help the authorities to limit the time the rate stays far from equilibrium; it certainly does not provide an instrument that can enable the authorities to rely on holding a disequilibrium rate.

Note that someone who holds the position that markets always know what they are doing and the authorities ought not to interfere with capital flows or the resulting exchange rates cannot also see much of a role for intervention of either type. That should include profes-

sions of belief in a “strong currency”. Either these are ineffective, in which case they are practically irrelevant but still philosophically jarring, or else they may have an impact, in which case they are potentially distorting to what the market would yield if left to its own devices. In both cases such professions are out of place.

■ IMPLICATIONS FOR THE DOLLAR/EURO RATE

I have argued above that there is little reason to expect any long-run trend in the dollar/euro exchange rate. Nor is there much evidence to suggest that short-run changes in exchange rates are explained by any of the structural models that economists have developed in the years since floating exchange rates returned in 1973. There is, however, evidence that real exchange rates tend to revert in the medium run to an equilibrium level. There has also been a good deal of work attempting to establish medium-run norms for exchange rates (such as FEERs).

A first question raised by this summary is whether the medium-run norm (the FEER) is the same as the equilibrium level to which the rate tends to return after a disturbance. The two would be expected to diverge if the macroeconomic assumptions underlying the calculation of the equilibrium rate are not sustainable. The obvious candidate for unsustainability at the present time is US fiscal policy. The path of projected budget deficits implies continued debt accumulation sufficiently rapid to result in an increasing debt/GDP ratio even though the long-run outlook calls for low debt and many of the assumptions that go into the projection seem implausibly optimistic. (For example, the projections make no allowance for renewal of some of the Bush tax cuts, or for any change in the alternative minimum tax, or for future spending increases in Iraq or elsewhere.) To the extent that one believes that a future administration will be obliged by the markets at some stage to implement a policy of greater fiscal austerity than is presently planned, one would expect a FEER for the dollar that already embodies such an expectation to be more depreciated than an estimate of the equilibrium rate that does not. Conversely, one cannot be confident that the equilibrium exchange rate of the dollar is as weak as estimates of FEERs would suggest.

Having acknowledged that, it is still worthwhile to examine what figures FEER-like calculations are currently yielding for the dollar/euro rate. The Institute for International Economics held a conference in May 2004 on “Dollar Adjustment: How Far? Against What?”, at which this was indeed one of the central questions that we asked. Several authors gave us the results of their models or their less formally based conclusions on the subject. Simon Wren-Lewis’s model suggested a value for the dollar/euro FEER in the range of \$1.15 to \$1.20 – i.e., that the dollar has already somewhat overshot in terms of the euro. (His earlier figure, in Wren-Lewis and Driver, 1998, centred on \$1.26. As it happens, this is exactly the same as the figure of Alberola *et al.*, 1999.) Agnès Bénassy-Quéré *et al.* (who aimed to estimate an equilibrium rate rather than a FEER) put the dollar as 7.6 percent overvalued relative to the euro on average in 2003 if the dollar were used as numeraire, but virtually in equilibrium

(actually 0.9 percent undervalued) if the euro were used as the numeraire. Since the actual average value of the euro in 2003 was \$1.13, this suggests a dollar/euro FEER in the range \$1.12 to \$1.21. Jim O'Neill suggested that (as of May 2004) a further 10 percent overall dollar depreciation might be sufficient, but most of this would have been against the Asian currencies, suggesting that the dollar/euro rate as of the conference (\$1.21) would not have been far from the FEER.⁶ Michael Mussa argued that a larger overall dollar depreciation, of the order of 20 percent, was going to be necessary, and suggested that the dollar/euro rate might in consequence go to something like \$1.35 to \$1.45.

Most of the protagonists were thus suggesting a dollar/euro FEER of less than \$1.25, suggesting that (as of early November 2004, when the rate is \$1.27) the exchange rate has already overshot modestly. But Mussa's calculation should remind us that the euro may still have further to rise, even if it does not overshoot (which it has done irregularly since the advent of floating). And the earlier figures of Wren-Lewis and Driver and Alberola *et al.* also suggest that it should not be taken for granted that there is up to now any overshooting in the dollar/euro rate.

These calculations strongly suggest that the period of euro weakness from 2000 to 2003 was an aberration. At the time the press was full of all sorts of ingenious explanations for why the dollar had appreciated so much, most of which featured high growth of productivity in the United States and the resulting fast growth of the economy. Some simply postulated that a strong exchange rate was the reward for fast growth. The Goldman Sachs story of how high productivity growth led to capital inflows was the least implausible. But one can now see clearly what the academic literature already implied: that these stories were worthless. The decline of the euro was unforecastable, a stochastic blip and not a comment on economic policy.

■ CONCLUDING REMARKS

The academic literature on exchange rates implies that one cannot with a good conscience forecast exchange rates in a way that would command serious money. One can make a sensible stab at estimating what real exchange rate is likely to prevail on average in the medium term, and there are times when the actual rate is so misaligned that such an estimate implies that one can be reasonably confident of the direction the market rate will move in the future. But much of the time is more like the present; since the dollar's large overvaluation against the euro of recent years has been largely or wholly unwound, the market rate is as likely to move in one direction as the other in the medium run. The only reason one might give for thinking a further euro appreciation more likely than a depreciation against the US dollar is that the dollar is coming out of a period of cripplingly severe overvaluation, and to

6. He reported that the GS-DEER model would have suggested an even stronger value for the dollar, because of the high weight it places on the rapid productivity growth in the United States.

compensate for that some move in the opposite direction looks likely. But the academic literature does not provide any ground for confidence that things will evolve that way.

Beyond that, one can say with considerable confidence that there will be no long run trend in the real dollar/euro exchange rate. Certainly one expects the dollar to trend downwards in real effective terms, but this will be because the currencies of the rising Asian powers rather than the mature European economies appreciate in real terms. The euro too will depreciate against the Asian currencies. One can also say that if there were any differential inflation between Europe and the United States it would tend to get reversed through changes in nominal exchange rates, but it seems highly unlikely that at least in the next few years there will be much differential inflation to reverse. One may guess that the dollar/euro rate will continue periodically to overshoot as it has done ever since the start of floating rates, giving us continuing wide swings. Perhaps this will lead to a collapse of the dollar as recently prophesied by Kenneth Rogoff and Maurice Obstfeld (2004), but it is also possible that the adjustment will be rather long drawn out as argued by Richard Cooper (2004).

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