Interest parity, risk premia and Post Keynesian analysis: A rejoinder

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Abstract: This paper develops the cambist (or Post Keynesian) view of forward exchange rates previously put forward in Lavoie (2000), according to which the forward exchange rate is not a predictor of future spot rates. The paper deals with imperfect asset substitutability, the peculiarities of fixed exchange rates, and the impact of speculation in forward exchange markets. While covered interest parity always holds in the cambist view, with the causality running from differentials in interest rates to differentials between the forward and the spot rates, a graphical analysis is provided to illustrate how the current spot rate may be influenced by the interest rate differential.

Key words: cambist view, forward exchange markets, currency risk, speculation.

I am grateful to the editor for giving me the opportunity to comment on John Smithin’s Interest parity, purchasing power parity, risk premia and Post Keynesian economic analysis. I understand Smithin’s paper as making the following five main points: (i) he denies that his own previous work required the acceptance of purchasing power parity, in contrast to what I had claimed (Lavoie, 2000, p.170); (ii) he endorses the cambist view of the forward exchange market that I had presented (Lavoie, 2000); (iii) he argues that some kind of currency premium is required for interest rates on one currency to be different from those on another currency, and that this premium may depend on accumulated net foreign debt; (iv) he believes that the real exchange rate is in principle a monetary variable and hence is subject to policy manipulation; (v) he claims that in a credible fixed exchange rate regime, interest rate discrepancies cannot occur.

On the first point, after carefully going through Smithin’s equations once again, I must reckon that he is correct: none of his equations imply the acceptance of purchasing power parity, in contrast to what I had mistakenly claimed earlier.

On the second point, I am delighted that Smithin agrees with the reverse causation argument brought forth by the cambists: it is the differential in interest rates on the euro markets that, at any given point in time, determines the differential between the forward and the spot exchange rates, rather than the converse. This explains what appears to be a puzzle to neoclassical authors Bthe fact that Aday-to-day movements in forward rates tend to be accompanied by almost identical day-to-day movements in current (not future) spot rates@Ethier, 1988, p. 516). Also, as Smithin points out, covered interest parity holds at all times, regardless of the efficiency of capital markets, and whether or not there is perfect capital mobility. The only restriction I would like to make is that with capital controls, the forward rate paid by a national resident might be different from that paid by a foreign customer, because foreign banks will only have access to euro-markets, which, because of capital controls, will be partly disconnected from the domestic money markets. As a result, in particular when a currency is under attack, money market rates on the euro-markets might rise above those of the domestic money market, thus leading to two distinct forward rates. It is this feature of capital controls which, I believe, has led some to deny that covered interest parity holds at all times.

Imperfect asset substitutability
Smithin makes the very important point that uncovered interest parity, save for fluke cases, requires a perfect asset substitutability. Now, as Smithin also points out in a footnote, perfect asset substitutability is not at all the same thing as perfect capital mobility. Capital may be perfectly mobile from one country to the next, no restrictions impeding the movements of capital from one country to another, without asset holders considering that all assets are perfect substitutes. Indeed, even within a closed economy, the better-known models of asset choice by households or financial corporations assume away perfect asset substitutability, on the basis of portfolio choice theory. For instance all Tobin-inspired models, in particular the famous Brainard and Tobin (1968) approach to asset modelling, or its Post Keynesian version developed by Godley (1999), is based on the assumption that distinct assets are imperfect substitutes. This approach has been extended to an open economy under the name of the portfolio approach to the exchange rate.

In the pitfalls approach, asset holders desire to hold a certain proportion of their wealth in the form of a single asset, this proportion being modulated (mainly) by the relative expected rates of return on all available assets. For each asset, we may thus construct a demand function, expressed as a ratio of net wealth. Under this approach, it is quite possible for some rates of return to be set by the monetary authorities; what will be adjusted are the actual proportions of their wealth that asset-holders keep in the form of the various assets. Rates of return will not be equalized. In the pitfalls approach, the relative supply of an asset has an influence on its rate of return. Increasing the supply of an asset, unless there is an equal change in demand, will lead to a fall in its rate of return. As a result, under the pitfalls approach, the premium associated with an asset, relative to the safest asset, say Treasury bills, is a residual. In its open-economy variant, the pitfalls approach will also lead to rates of return differentials, even between no-risk Treasury bills of different countries, simply because asset-holders will not want to put all their eggs in the same basket. An interest differential will not induce infinite and never-ending capital flows. Portfolios will adjust, and then stay put, leaving interest differentials as they are. The difference with the closed economy is that there is an additional element influencing the expected rate of return on assets the expectations about future exchange rates. The proportions of each asset being held will be changed accordingly; but this can be done without any change in the rates of interest on the assets under the control of the respective monetary authorities, as long as the monetary authorities are determined to keep interest rates as they are. Thus with imperfect asset substitutability, the uncovered interest parity condition does not prevail (Isard, 1995, p. 135).

In other words, the uncovered interest parity theorem could only hold (in general) in a world of perfect asset substitutability, devoid in addition of any currency risk or credit risk, which is precisely the point that Smithin makes by introducing his z variable. Uncovered interest parity does not hold because uncovered positions carry currency risk. Portfolio holders who act as arbitragers that wish to take advantage of divergent expected rates of return on safe assets can do so only as far as they are willing to face exchange risks. This is an inescapable conclusion. Smithin believes that z is a currency risk premium which depends essentially on the (relative) level of net foreign debt. As Smithin himself points out, his explanation of the value taken by the z variable does not have the same status as the logical arguments adduced above. Other explanations are possible.

It should be recalled that what empirical research has demonstrated to be false is not uncovered interest parity per se. Uncovered interest parity, equation (2) of Smithin's paper, cannot be falsified directly, for it depends on market expectations about future spot rates. There is no reliable data on these expectations,
survey data on exchange rate expectations being highly suspect. As a consequence, what has been tested in its place is the hypothesis that the forward exchange rate is a predictor of the future spot rates. It is this hypothesis that has been falsified time and time again (more specifically the hypothesis that forward exchange premia are unbiased predictors of changes in the spot exchange rate). The reason for which the validity of uncovered interest parity has come to be associated with the predicting power of the forward exchange rate is that neoclassical authors believe that: i) exchange rate expectations ought to be right on average; ii) and that forward rates, relative to the current spot rate, reflect the expected change in future spot exchange rates. The former belief is doubtful, since large econometric models fail to make out-of-sample predictions that are any better than those of random walks models, and the second belief is definitely wrong.

**Speculators on forward markets**

Still what would happen in a world devoid of risk premia, where both the cambist theory of the forward exchange rate and the uncovered interest parity would hold? This is a question that justifiably bothers Smithin for he writes that in his view it seems unlikely that there should be no relationship whatsoever between the forward rate and the expected future spot rate. If the expectations are firmly held and do differ from the quoted forward rate, there is nothing to prevent speculators from taking uncovered positions to take advantage of this.

This is certainly a valid point. In contrast to the arbitragers, the pure speculator cares neither about the expected change in spot exchange rates nor about the yield of an asset. The pure speculator is solely concerned with the difference between the forward exchange rate and the future spot rate which is expected to occur when the forward contract comes for delivery. In theory the speculator needs no financial resources of his own, since this is just a forward contract. In practice, a deposit will have to be provided, representing 10 to 20% of the value of the contract (Coulbois, 1979, p. 183), thus putting a limit to the possible leveraged position when rules are not circumvented. Nowadays, to provide the 10% margin, speculators may simply lend to the banks the Treasury bills that they hold, thus using the repo market, and encountering no opportunity cost whatsoever.

For instance, if the consensus is that the American dollar ought to be 1.50 Canadian dollars in three-months time, while the forward exchange rate is at 1.48, there is an incentive to speculate against the Canadian dollar, by selling Canadian dollars forward. At delivery time, three months later, with 148 Canadian cents the speculator would get one American dollar, which he or she could immediately transform back to 150 Canadian cents on the spot exchange market. This would seem to imply that as long as the forward rate of the Canadian dollar is below the expected future spot rate, there is an inducement to speculate against the Canadian dollar on the forward exchange markets.

How is this compatible with the cambist view, which both Smithin and myself advocate?

Figure 1 below helps to understand what would occur in such a situation. Start from a situation where the inter-bank interest rates are equal, $i_0 = i^*$, the former rate being the Canadian rate while the latter is the rate in the US the world rate. In the initial situation, assuming away any risk premium, the forward exchange rate, the spot rate and the expected future spot rate are all equal, $f_0 = s_0 = s^e$. Suppose now that the Governor of the Bank of Canada, under the impulse of members of the Department of Economics at the University of Ottawa, decides to lower the Bank rate, which leads to a fall in all short-term Canadian rates, including the inter-bank rates. In this new situation, $i_1 < i^*$, as is shown on the graph. As was
argued in Lavoie (2000), cambists fix the forward rate simply by marking up the current spot rate on the basis of the interest cost differential. As a result the forward rate drops to $f_1$, on the basis of the following equation which is represented by the upward-sloping $f$-curve on Figure 1.

(1) $f = s + (i - i^*)$

FIGURE 1 ABOUT HERE

Now, as was pointed out by Smithin, this situation could not last forever. If the $s^e$ expectations about future spot rates are held with sufficient conviction, speculators will take uncovered positions and will sell Canadian dollars forward, in the hope of making a quick profit. If these expectations reflect a consensus, the forward market will become a one-way market, banks will be unable to find clients willing to purchase Canadian dollars forward, and hence the banks will be forced to find cover by selling Canadian dollars spot, acquiring immediately the American dollars that they will have to provide to the speculators within three months time. Unless the central bank intervenes on exchange markets, the Canadian dollar will depreciate, meaning that its $s$ value will rise. We have:

(2) $s = ±(s^e - f)$

This implies that the $f$-curve will now be shifting upwards. Provided there is no change in the future expected spot rate, speculators will sell Canadian dollars forward and the spot rate will rise until the forward rate is equal to the expected rate, until we have $f_2 = s^e$. At that point the new spot rate will have risen to $s_2 = s^e + (i_1 - i^*)$, as shown on the downward-sloping $s$-line.

In the new equilibrium, both the covered interest parity theorem

(1) $f = s + (i - i^*)$

and the uncovered interest parity theorem

(3) $s = s^e + (i - i^*)$

are verified. But the values taken through this process by the forward exchange rates are no indication whatsoever of the values taken by the spot exchange rate. Indeed, if the interest rate differentials remain constant over the next months, and if expectations are firmly held, while the process acted upon by speculators takes enough time, the time-average forward rate and the time-average spot rate will seem to have moved in opposite direction!

What the above example shows is that, in a world of perfect asset substitutability and perfect mobility of capital, it is possible for both the covered interest parity and the uncovered interest parity to be true. In the new equilibrium, arbitragers accept to hold assets denominated in Canadian dollars, despite their lower yield, because they expect an appreciation of the Canadian dollar. Thus a central bank can implement lower rates of interest. It means however, that currency depreciation must be accepted. The process could be unstable if there is no anchor to expectations of future spot rates, for instance if they depend on past realized spot rates.

Speculators who are risk-averse
The same mechanism could be described in a world where speculators are risk-averse. We could again imagine that speculators sell Canadian dollars forward as long as the expected future spot rate is higher than the forward rate. This would induce an upward move in the Canadian exchange rate (a depreciation of the Canadian dollar).

We could suppose however that speculation, with the consequences outlined by equation (2), is actually carried on only when the absolute value of the discrepancy between the expected future spot rate and the forward rate is large enough to compensate for a possible loss due to mistaken expectations, that is only if:

\[(4) \ s_e - f > \bar{\varepsilon} \]

The horizontal lines below and above \( s_e \), in Figure 2, would then represent the threshold points beyond which speculators would stay put. In this case, only the covered interest parity would hold, and the depreciation of the Canadian dollar would not be as large as in the perfect mobility case; pressures on the spot exchange rate would end as soon as the forward rate would reach the threshold, \( f_2 = s_e - \bar{\varepsilon} \), as given by the \( f_2 \) upward-sloping line. The currency risk premium \( \bar{\varepsilon} \) here plays a role which is similar but yet different from Smithin's variable. The risk premium \( \bar{\varepsilon} \) would be positive whether the country has a positive or a negative foreign debt position. Here the fear of speculators is about holding mistaken exchange rate expectations. The greater the confidence with which the expectations are being held (the weight of evidence), the smaller \( \bar{\varepsilon} \).

Uncovered interest parity was propelled to the forefront by economists propounding models with a single interest-earning asset (the so-called monetary approach to the balance of payments). But how is uncovered interest parity to be interpreted in a world with a multiplicity of income-earning assets, including equities? Low real interest rates may help to generate high growth rates, and hence high rates of return on equities. Bibow (2001) argues that the interest rate hikes of the European Central Bank in 1999 and 2000, which were intended to stop the depreciation of the euro relative to the American dollar, had the exact opposite effects. The euro plunged with each euro interest rate hike because, Bibow says, the markets were more concerned with growth prospects than with inflation-netted money market rates. Presumably, international financial operators were mostly attracted by fast-growing economies that had the potential to deliver high rates of return on equity assets. Rising interest rates weakened growth prospects. In that time period at least, it would seem that if the uncovered interest parity had any validity, it was associated with equity returns not with yields on short-term assets. This implies that the covered interest parity theorem and the uncovered interest parity theorem deal with different assets and different rates of return. They are not commensurable.

**Fixed exchange rates**

Smithin argues that An a Credible fixed exchange rate regime with capital mobility ... domestic authorities entirely lose control of the domestic rate of interest.He is careful to point out that what he means by a credible fixed exchange rate in that context is: Aa regime, which, without reservation, is confidently expected to hold@For domestic interest rates to diverge from world rates, there has to be Aa separate currencies, with either floating exchange rates, or a fixed rate regime in which some adjustments/revaluations are to be expected@Smithin concludes that An a common currency or similar
environment ... there would be no forward market.

No one would wish to argue with the fact that within the common-currency euro zone there is no room for forward exchange rates, no more than there is between the various states in the USA. But what about fixed exchange rates? According to Isard (1995, p. 25), countries rarely seek to keep their exchange rates rigidly fixed. To do so would be almost an impossible task in a country where residents had the freedom to exchange currencies with each other. Thus, if there is capital mobility, in practice the fixed exchange rate arrangements provide for a limited degree of flexibility by defining fluctuation ranges or bands around the central parities.

In the case of the Bretton Woods arrangements, as is well known, the currencies were pegged to the US dollar with fluctuation margins of one percent on each side of the central parity, and hence fluctuation margins twice that size between currencies other than the US dollar (except for the period near the end of the system, when the margins were widened). Were there forward markets then?

We know that there were. In normal periods, these forward exchange markets played a stabilizing role. Why is this so? Suppose Davidsonian views on fixed exchange rates prevail, and a one to one fixed parity, with 1% fluctuation bands, has been established between the euro and the American dollar. When the forward exchange rate of the euro hits the bottom band, say 0.99 euro per dollar, domestic European exporters who expect to be paid in US dollars for their exports in one-month time will not take cover, for they know that will not get any less than 0.99 euro on the spot market one month later. By contrast, European importers who must pay their goods in US dollars will all be purchasing US dollars forward, and hence will be selling the euro forward, for otherwise, if they pay the goods using the spot market one month later, they will have to fetch at least the same .99 euro per dollar, and perhaps as much as 1.01 euro, so that the spot cost of imported goods could turn out to be more expensive. We thus have a one-way forward exchange market. As a result, all banks will sell the domestic currency spot to cover themselves, and hence both the spot and the forward euro exchange rates will depreciate back towards the parity level. Leads and lags stabilize the currency back towards its parity rate. Symmetric effects will arise when the currency hits the top band. Thus, in theory, both the forward rate and the spot rate cannot move out of the fluctuating band. The forward exchange market, when parity is believed to be one of the fundamentals, in this case provides a stabilizing force.

However, what occurred in reality was way different. In the Breton Woods era, currencies that nearly reached the bands for some time were usually subjected to intense speculation. Weak currencies were generally associated with high interest rates, while strong currencies had low rates. Figure 3 illustrates two examples. On the left-hand side of the figure, the spot value of the domestic currency is on its lower band, and it is about to appreciate (say the German mark). Its forward rate is below the spot rate, because German interest rates are much lower than US rates. On the right-hand side, the spot value of the currency is on its upper band, and it is about to be devaluated (say the sterling pound). Its forward rate is above the spot rate, because British rates are much higher than those in the States. The problem was that for most operators, the expected future exchange rate of the German mark was even lower than the forward rate; similarly the expected future exchange rate of the British pound was even higher than the forward rate. The presence of forward exchange markets exacerbated the problem. Leads and lags transactions operated in reverse gear, and pure speculators making outright transactions could use forward exchange markets to leverage their own bets.

FIGURE 3 ABOUT HERE
The point I wish to make however, is that even with fixed exchange rates there were wide variations in interest rates. The presence of forward exchange markets did not prevent these variations. These could be explained to some degree by variations in inflation rates, the perspective of future modifications to the parity rate, and the highly imperfect mobility of capital for several countries; but the interest differentials also depended on the monetary policy pursued by the monetary authorities. One could say, as Smithin would, that the scope for interest changes with fixed exchange rates depends on the fixity being imperfect in some sense, and of course that different currencies still exist. So there can be scope for policy under fixed rates; but the more rigid is the fixed exchange rate, the less scope there is, unless this rigidity is compensated by imperfect portfolio substitutability.

Forward exchange markets are used even when small variations in exchange rates are expected. Interest differentials of 12% and 4% generate one-month and three-months forward exchange rates that are different from spot rates by only one percent which is half the size of the exchange variations allowed by the Bretton Woods arrangements. If cover for longer time periods pushes the forward rate way out of its fluctuation bands, this particular forward market might simply vanish. But this is of little importance, since forward exchange markets do not exist as such in the words of a cambist, Pierre Prissert. A forward exchange order is really a spot exchange order where the customer, instead of arranging the funding of the operation, leaves it to the bank who got the order (Coulbois, 1972, p.114).

In this sense, there is wide scope for domestic monetary policy within a fixed exchange rate system, as long as there is imperfect asset substitutability; the more so when financial market operators are less concerned with short-term yields than with long-term growth prospects, as it has apparently been the case recently, in the belief that we have entered the age of a new economics, where production growth spurs productivity growth, quashing inflation forces, as suggested by Kaldor=Verdoorn=law.

I am not sure whether there is a better exchange rate system. Even currency boards can set their own interest rates, as long as their country manages to achieve external balance surpluses. In the end, what matters is the overall exchange rate system that generates the fastest growth in world effective demand.

References


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