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Inputs received

Currency speculation and exchange rates: Lessons from the crisis

Pedro Rossi
State University of Campinas (UNICAMP-Brazil)
and UNCTAD Virtual Institute Research Fellow
Email: pedrorossi@eco.unicamp.br
Tel: +41 22 917 5098 (till 14 May 2010); +55 19 3521 5733

Abstract

In recent years, some UNCTAD publications highlighted currency speculation as a cause of exchange rate distortion and the build-up of current account imbalances in several countries. Recently, the impact of the crisis on exchange rate trajectories brought new and stronger evidence of this link, which tends to confirm the institution's position with regard to the role of currency speculation. This short paper examines this new evidence and proposes some policy options to mitigate the problem. In this context, we seek to answer the question why different countries have a similar exchange rate trend, and why countries with higher interest rate have experienced greater exchange rate depreciation during the crisis. The first section of the paper examines the relationship between the variations of exchange rates and those of interest rates. The following section then argues that a financial operation called "carry trade" constitute a link between these two variables. The last section indicates the way forward by presenting ideas for policy measures, in particular a domestic financial tax on financial flows and a restriction of carry trade operations.

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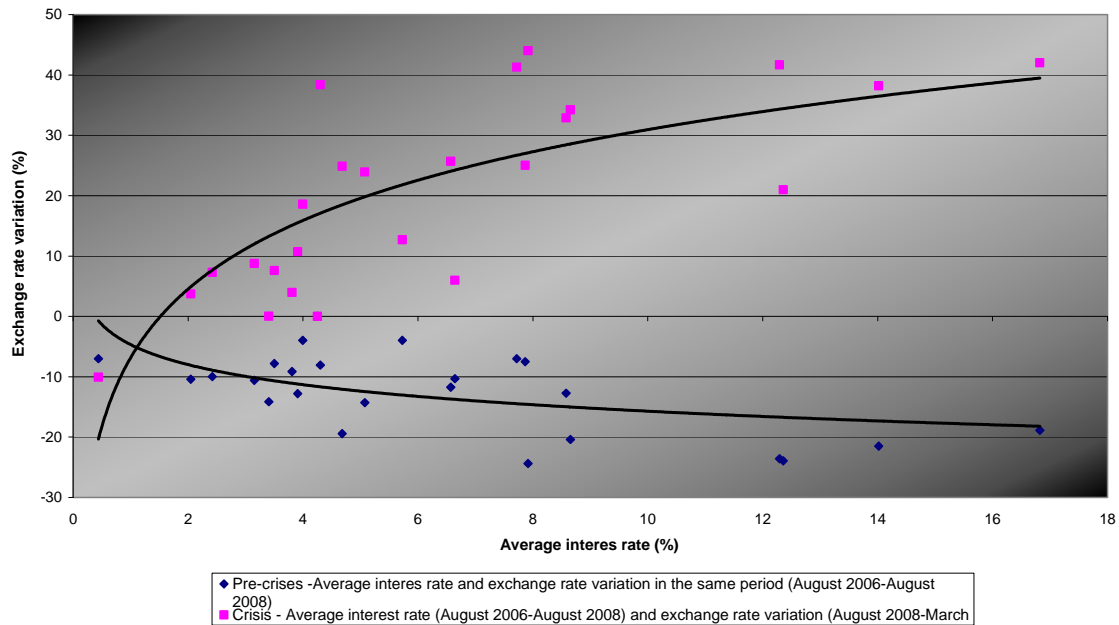
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Exchange rate misalignments

Exchange rate has for long been an intriguing issue for both economists and policy makers. Although it was usually thought of as an external adjustment mechanism, empirical analysis finds little evidence that exchange rates move in response to variables such as current accounts balance, inflation, productivity and growth. However, evidence indicates that there is a strong correlation between exchange rates and interest rates. One can therefore say that, in a world of imbalances, exchange rates have rather become a non-adjustment mechanism.

Figure 1 shows the correlation between exchange rate variations of several currencies against the dollar and the average interest rate levels in two different periods. The blue points represent exchange rate variations in 25 countries, as well as their average interest rate levels during the period from August 2006 to August 2008. The downward trend line indicates that the currencies of countries with a higher interest rate appreciated more than others during this period. Australia, for example, had a 6.5 per cent average interest rate and an 11.7 per cent appreciation, while Brazil's interest rate was 12 per cent and its currency appreciated against the dollar by 23 per cent.

Figure 1 - Average interest rate and exchange rate variation of 25 countries against the US dollar before and during the crisis



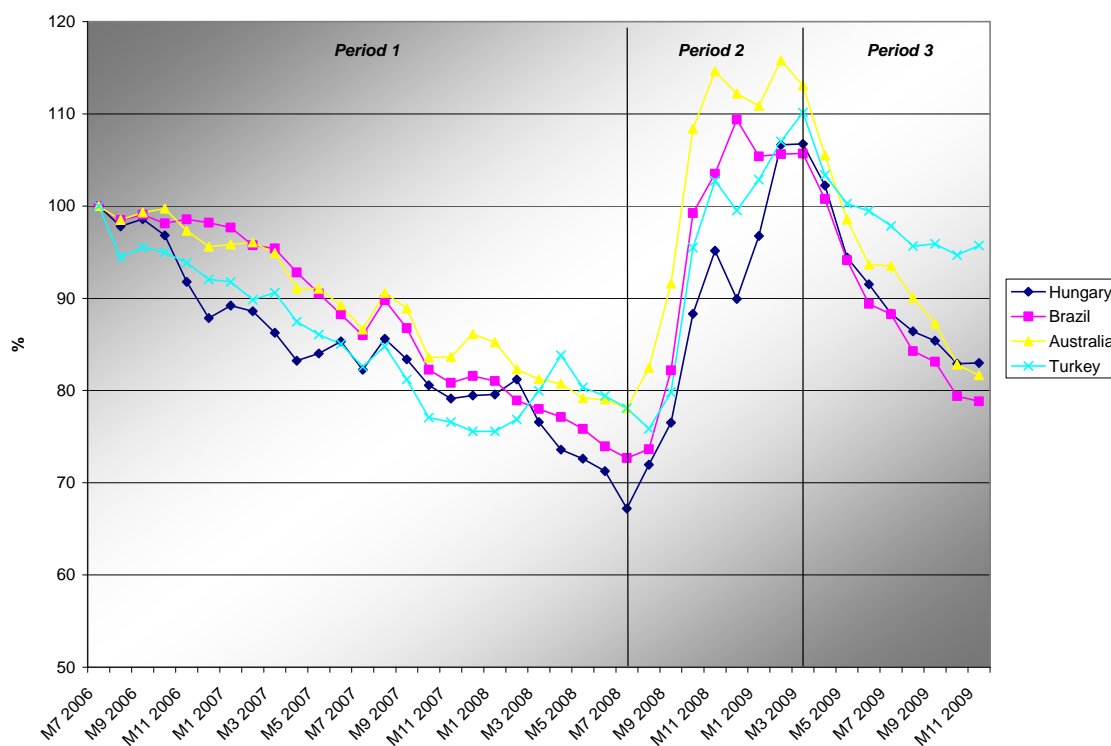
Source: Author's calculations based on IFS- IMF data

From September 2008 to March 2009, the most vigorous months of the financial crisis, evidence points in an opposite direction. Red points compare the average interest rate from August 2006 to August 2008 with the exchange rate variations from August 2008 to March 2009 in the same

25 countries. The upward trend line shows in a more vehement way that the currencies in countries with higher interest rates before the crisis depreciated more during the crisis. Turkey as the most high-yield economy had also one of the greatest currency depreciations during the crisis (42 per cent) while countries like Morocco and Singapore experienced much lower exchange rate, as well as interest rate variations. Thus, the results presented in *Figure 1* suggest that countries with a higher interest rate level also exhibited higher exchange rate variations before and during the crisis.

When analyzing the exchange rate trajectories of four high-yield economies, namely Hungary, Brazil, Australia and Turkey, from July 2006 to November 2009, it is surprising to see a uniform behavior, as shown in *Figure 2*. This similarity occurs despite the heterogeneity among this group of countries in several economic indicators such as the growth pattern, current account situation, private and State indebtedness, composition of exports, etc. For these economies, it seems that one of the few similarities is a high level of interest rates, which, nevertheless, appears to be a crucial factor influencing the exchange rate trend.

Figure 2 - Exchange rate trajectory against US dollar in Hungary, Brazil, Australia and Turkey from July 2006 to November 2009 (July 2006=100)



Source: Author's calculation, based on IFS- IMF data

Figure 2 shows three distinct periods with different exchange rate trends in all the four countries. *Period 1* is characterized by a strong exchange rate appreciation; in addition, most of the

economies examined had current account deficit during that time¹. An enormous exchange rate depreciation is a leading feature of *Period 2*, due to the effects of the crisis that will be discussed in the next section. Finally, in continuation of the roller coast pattern, another round of appreciation starts in March 2009. Why is the behavior of exchange rates in so different countries so similar? Why do the exchange rates in some countries follow a roller coaster trend? The next section tries to respond to these questions.

The carry trade operation

The economic correlations mentioned above are not fully predictable and coherent for mainstream economics and require an effort to re-think the role of finance and more specifically to understand distortions caused by financial flows. In this sense, a key factor acting as an engine of speculative flows is particularly the carry trade. This operation is a leveraged trading strategy involving two currencies. It consists basically in borrowing funds in economies with low interest rates like the US, Japan and Switzerland and lending them to high interest countries such as Brazil, Turkey and Australia. An arbitrage gain overcomes from interest rate differentials but the final gain depends on an unknown exchange rate behavior. The speculator bets on a stable exchange rate or a depreciation of the borrowing currency and an appreciation of the lending currency. This latter form is even more advantageous for the speculator since it depreciates the loan and appreciates his yield².

The carry trade often fulfills the speculator's expectations as the magnitude of the flow tends *per-se* to cause exchange rate variations. In other words, the intensity of the flow tends to further reinforce the expectation that he created. In addition, this operation weakens the borrowing currency and appreciates the target currency of this operation as investors sell the former and convert into the latter one. The higher the interest rate differential, the more attractive is the carry trade.

Hence, the carry trade can reasonably explain why countries can have the same exchange rate trajectories despite few common aspects beyond the interest rate level. Similarly, this speculative flow could have been the cause of continuous appreciation of several exchange rates against the dollar before September 2008, which looked like dissociated from any economic fundamentals, and the subsequent depreciation during the crisis. It can also explain the apparent paradox in which the epicenter of the crisis became the safe heaven of financial flows since the leverage assumed in carry trade operations induces quick reversals of those flows to their origin, aiming to re-pay loans and avoid losses. Therefore, the unwinding of carry trade operations added to others financial flows caused reversals in exchange rate trends as observed in *Figure 1 and 2*.

¹ Brazil had a current account surplus during 2007 and deficits in 2008 and 2009. Hungary had deficits until 2009. Australia and turkey had current account deficits during the all period.

² The carry trade is increasingly more recurrent in economic literature. For some reference see UNCTAD's 2007 TDR, Galati *et al*, "Evidence of carry trade activity", BIS Quarterly Review, September 2007, and Hattori and Shin, "The Broad Yen Carry Trade", *IMES DISCUSSION PAPER SERIES*, Bank of Japan, 2007.

Policy recommendations

An impetus for re-thinking economic theory is an opportunity that emerged from the crisis. New approaches to old issues are important to enable re-visiting of policy recommendations. The understanding that financial flows are not neutral and affect the adjustment of freely floating exchange rates implies that nationally oriented monetary policy is inconsistent with liberalized and global finance. In other words, a national interest rate that moves in response to domestic targets such as inflation provides incentives for financial flows driven by interest rate differentials. The policy challenge is to preserve this monetary tool of economic policy while keeping exchange rates safe from financial distortions. Therefore, two policy directions can be explored. The first one targets the interest rate differential and the second focuses on speculative carry trade operations.

Neutralizing interest rate differential with a domestic financial tax. Financial policy can be used to keep interest rates oriented towards domestic objectives and discourage capital flows by adding taxes on capital inflows linked to interest rate differentials. Thus, domestic interest rate (i^d) should be equal to an international rate (i^i) plus a sovereign risk (ω) and a financial tax (λ).

$$i^d = i^i + \omega + \lambda$$

This domestic financial tax works as the adjustment variable of the equation and can be brought to zero according to the equation equilibrium. A negative sign in the financial tax can occur if the domestic interest rate is lower than the international rate plus the sovereign risk. In that case the tax should be applied to capital outflows (and not inflows) as is illustrated in the case of currencies that originate funds for the carry trade. These forms of capital control tend to discourage financial speculation by influencing directly the investor's return.

Identifying and restricting carry trade operations. Prudential policy should also be used to impede leveraged speculation. This entails following the trail of the carry trade through the financial system by comparing balance sheets of investors and financial intermediaries and applying restrictive rules. Since it is an international transaction, a multilateral effort is necessary for the identification and regulation of carry trade operations.

The above policy measures can be part of a broad new financial architecture which will include national and international measures that aim to pursue stability through financial regulation. Their final goal is to neutralize the effects of speculative flows on exchange rates and consequently on current account balances. Consequently, nominal exchange rates would be able to float according to real economic fundamentals and without financial distortion.