

Speculation and External Adjustment Failures: can China be affected? (preliminary)

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Abstract

Global imbalances have become a major source of systemic risk to the global economy. They can have adverse repercussions in the short and long term on both surplus and deficit economies due to the potentially disruptive effect of a sudden adjustment. They can be amplified by short term speculation that prevents the real exchange rate to perform its adjusting role. The paper examines past and recent patterns of destabilizing short term speculative flows that have led to financial fragility and real costs for a number of various economies. China has been able to control large speculative inflows and an uncontrolled appreciation of its currency by employing non-monetary anti-inflationary policies, keeping interest rate low, and keeping tight control on the capital account. This policies may not be fully viable in the long run, but may be still of crucial importance while the country is strengthening its banking system and exchange rate market and should be coupled with globally coordinated policies to reduce global imbalances. Among the latter intermediate exchange rate regimes or regional cooperative schemes should be favoured. An international monetary system should provide a code of conduct, multilateral oversight and negotiations, and a multilateral body that could identify the size of the deviation enforce the necessary measures to correct the imbalances.

Keywords: foreign exchange, interest rate parity, global imbalances

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1. Introduction: widening imbalances and real exchange rate movements

Global imbalances have become a major source of systemic risk to the global economy. They can have adverse repercussions in the short and long term on both surplus and deficit economies due to the potentially disruptive effect of a sudden adjustment.¹ As in past financial crises, the growing financial fragility induced by some types of short term capital flows, associated with current-account deficits and the possible of an overshooting devaluation due to sudden stops of the inflows, typically force deficit economies into contraction, which may spill over to trading partners. On the other hand, surplus economies may also experience short term capital inflows and appreciation pressures that can result in overshooting exchange rate fluctuations and/or overheating and a substantial fragility of the financial system.

The current number of deficit countries is rather small and, apart from the United States, their weight in the world economy is also fairly limited. Nevertheless, there are some regions where risk is highly concentrated, as in Eastern Europe and in some transition economies in Asia. Significant and persistent deficits are observable in South Africa, Turkey, Australia and New Zealand, as well as Hungary and other East European oil importing countries. The United States current account reached a record low of 6.6 per cent of its GDP in 2006, or more than \$850 billion. Surplus economies are East Asian manufactures exporters, such as China, Japan, and Korea, or energy and commodity exporters, such as Brazil Saudi Arabia and Russia. Countries with large surpluses include oil exporters such as the Russian Federation and Saudi Arabia, and exporters of manufactures, such as China, Germany, Japan, Malaysia and Switzerland. Many East Asian and Latin American emerging market economies enjoy small surpluses, while members of the euro area, Mexico and Colombia register a slight deficit.

The sources, sustainability and possible adjustment mechanisms of the widening external imbalances have been the object of one of the liveliest and most controversial economic policy debates of the past couple of decades. While many observers have been claiming that imbalances are simply a natural and harmless consequence of an increasingly integrated global economy, the actual pattern and level of the imbalances tend to support the belief that something is wrong in the global imbalance adjustment mechanism.

Nonetheless, there is an almost universally shared belief that changes in the overall competitiveness of an economy can be a decisive factor in reversing the sign of its trade balance. Indeed, large corrections of deficits are usually observed to go hand in hand with huge devaluations of the nominal and real exchange rate, and empirical evidence has shown that changes in the real effective exchange rate (REER) have the potential to reduce deficits or to induce swings in the trade and current-account from deficit to surplus (IMF, 2007 and Bundesbank, 2007).² Indeed, the swing from deficit to surplus in many crisis-stricken countries in Asia and Latin America was associated with huge devaluations of their currencies and large gains in competitiveness for their economies as a whole. This nexus between the exchange rate and trade flows is also acknowledged by those who believe that if the Chinese currency, the renminbi, were allowed to float freely, it would reduce the biggest surplus in the world and the biggest deficit at the same time.

While the currency of surplus countries is supposed to appreciate and not depreciate in real terms, there are cases of large or even rising current-account deficit, accompanied by a real

¹ See UNCTAD's *Trade and Development Report* (UNCTAD, 2004, 2005 and 2006).

² REER is a comprehensive measure of competitiveness of an economy with respect to its trading partners. It is calculated as the average of bilateral real exchange rates weighted with annual values of trade.

appreciation and a loss in overall competitiveness: a much stronger indicator of non-sustainability than a deficit and an overvalued currency alone! If the most important price for exports and imports, the real exchange rate, consistently moves in the “wrong” direction, there is hardly an easy way out of a protracted imbalance. In other words, such “false” price movements should be avoided at all costs in order to allow the world economy to smoothly correct its global imbalances.³

“False pricing” however seems to be more common than what theory would predict as showed on time pattern of the ratio of the current-account to GDP and the REER for some selected economies.⁴

Table 1 also shows the paradox of false pricing for a number of surplus economies with officially floating exchange rates: Japan had a significant real depreciation, while Germany and Switzerland had smaller ones. China, the country most under political pressure to float its currency, shows a much stronger tendency towards appreciation than the free floaters.

Could a floating regime and high mobility (and low regulation) of capital induce speculative flows able to drive the nominal and real exchange rates in the wrong direction - from a balance-of-payments point of view - thereby hindering the adjustment process and making the constellation of deficits and surpluses unsustainable?

A shift to floating and capital openness may not provide a solution to the global imbalances, and, more generally, raises questions about the role of the financial system in the determination of capital flows, nominal and real exchange rates and real imbalances. Domestic external imbalances are undoubtedly affected by the determinants of international competitiveness such as wage and price inflation, productivity growth via real exchange rate changes as shaped by the institutions and regulation in the financial, labour and product markets. Nonetheless, it is widely acknowledged that speculative capital flows have a significant cumulative effect on macro aggregates creating systemic risk on both the financial system and real economy.

Indeed, various forms of domestic and international financial speculation have been associated with episodes of consumption booms, current-account deficits and overvalued currencies. If speculation is an important source of real exchange rate misalignments and of persistent diverging patterns of global real balances, domestic and international regulations and policies have to provide the macroeconomic and financial conditions for generating converging patterns of trade balances and a coherent adjustment of the imbalances.

Speculative flows are difficult to identify and monitor. According to McGuire and Upper (2007) and Galati et al. (2007), hedge funds and commodity trading advisors (CTAs) have been the main players and beneficiaries of trades using the yen and the Swiss franc as funding currencies for buying some short-term assets (bank deposits and short-term government papers) in the target currencies.

³ The role of the real exchange rate in the international adjustment mechanism is regaining attention from the international financial institutions (see IMF, 2007), yet the policy prescriptions still depend on diverging views as to the sources of the real exchange rate misalignments and the ability of market forces to bring about the required adjustment of the balances. Recent experience tends to reject the case for an effective “market-led” adjustment or the belief that any single economy could independently impose its own correction measures.

⁴ In *TDR 2006*, it was noted that some interpretations of this situation, mostly those blaming an excess of world savings relative to world investment demand, appear to be inconsistent not only with policy intuition and common sense but also with actual experience. Indeed, in terms of accounting, global imbalances correspond to a misalignment of national savings with investment, and of national income with national expenditure. However, neither the savings–investment nor the income–expenditure gaps can be considered the direct sources of the trade imbalance and therefore of international real income transfers; rather these are the joint outcomes of income changes and relative price movements, such as shifts in the terms of trade, in the real exchange rate and in relative factor costs.

"Currency carry trade" is a class of financial operations that involves borrowing and selling a low-yielding currency to buy and lend in a high-yielding currency. The ensuing cross-currency speculative positions are typically highly leveraged and may generate a large and continuous stream of profits as long as the interest rate differentials between funding/low-yielding currency and target/high-yielding currency are not offset by a sudden exchange rate reversal.⁵ Expected exchange rate movement and volatility, together with cross-currency interest rate differentials, play a key role in inducing a build-up of such speculative positions and their sudden unwinding. On the other hand, interest rate differentials and exchange rate movement cannot be considered exogenous to this form of speculation. The relative size of the funds involved in such a class of operations may trigger a cumulative effect on the exchange rates, inducing an appreciation of the target currencies and a depreciation of the funding currencies. A persistent trend toward appreciation has been experienced by the Icelandic krona, the Australian and New Zealand dollars, the Brazilian real, the Turkish lira, the South African rand and the Korean won, as well as the currency of some transition economies such as Hungary, Romania, Bulgaria and the Baltic states. Funding currencies, such as the Japanese yen and the Swiss franc, demonstrated an opposite trend.

As noted in the studies at the Bank for International Settlements, measuring the volume of the carry trade is problematic because of the lack of data and the variety of forms that these flows can take. However, a comparison of carry-to-risk ratios (the three-month interest rate differential divided by the implied volatility of the currency option) provides further evidence that there is a clear tendency for the currencies of some developing countries, like the Brazilian real and the Turkish lira, to become increasingly more attractive than traditional carry trade targets such as the Australian and New Zealand dollars and the pound sterling.

National monetary policies become increasingly affected by the pressures on the exchange rates and inflows of short term capital. Monetary authorities seeking to contain the inflationary pressures and the overheating induced by capital inflows would keep interest rates high. The fear of a sudden stop of inflows, of depreciation and of a consequent inflationary shock would also induce central banks to preserve high interest rate differentials and accommodate the increasing appetite of carry traders.

Indeed, the mounting evidence on the effects of carry trades shows the absence of strong stabilizing forces on the capital market that would tend quickly to remove any arbitrage gain and lead to cross-currency uncovered interest parity (hereafter UIP).

The UIP states that capital flows find equilibrium when the expected devaluation of a currency compensates for the interest rate differential obtained by investing in that currency and represents a fundamental tenet of our theoretical conventional wisdom and a building block of standard macroeconomic models. The UIP holds when the incentive to buy a currency and invest abroad, driven by an interest rate spread, is completely offset by the potential loss of the currency value, that is, if the positive interest rate spread is compensated by an expected devaluation of the exchanged currency. This implies that assets denominated

⁵ For example, an established speculator such as a hedge fund might borrow 12,000 yen in Japan, buy 100 dollars in the United States, invest this amount in United States bonds and obtain an interest revenue equal to the difference between the borrowing rate in Japan, say 0.25 per cent, and the higher lending rate in the United States, say 5 per cent. Exchange rate changes between the time of borrowing and paying back the funding currency can add to the gains, or induce smaller gains or even losses. But with stable exchange rates, the *interest rate gain* amounts to 4.75 per cent. However, both gains and losses are largely magnified by high leverage ratios, since traders typically use huge amounts of borrowed funds and very little equity. For instance, owning a capital of \$10 and borrowing 10 times the equivalent of that value in yen, the leverage factor of 10 leads to a net interest return on equity of 47.5 per cent.

in a different currency should have the same return so that *no extra profit* can be made by exchanging them. On the other hand, it also implies that it should not be profitable to short-sell or borrow in a currency and lend uncovered in another. The uncovered interest parity condition is therefore an equilibrium condition that rules out excess demand in the international market. Coupled with the assumption that expectations are formed in a fully rational way (market participants use *efficiently all the information* available), it becomes a manifestation of the market efficiency hypothesis that states that any security prices (exchange rate included) reflect all available information, and that no unexploited extra profit is possible.⁶

The carry trade phenomenon, as well as many other profitable speculative activities, not only clearly violates the parity condition but also gives additional support to its related “forward-premium puzzle” (Burnside et al., 2007). The evidence that currencies at a forward premium tend to depreciate, while currencies at a forward discount tend to appreciate, implies that positive interest rate differentials are systematically associated with appreciation.

Carry trades not only exist due to a systematic deviation from the parity condition, representing a clear violation of the market perfection hypothesis, but also generate two distinct and destabilizing cumulative effects on the currency involved: In the winding of carry trades, speculative positions pile up, feeding into a pattern of real appreciation for deficit economies and real depreciation for surplus economies and providing a substantial contribution to the widening of global imbalances. In the unwinding of the positions, fears of currency reversals generate sales and depreciation of the target currencies, while players' loss-minimizing strategies generate cross-country contagion and volatility.

Carry trade may therefore constitute a significant amplifying factor for global imbalance and financial turmoil and be a direct source of financial fragility and instability. This paper aims at framing the carry trade phenomenon within the broader issue of divergent pattern of global imbalances and of policy options available to countries that are undergoing major transformations in their financial system and monetary policies such as in the case of China. The following sections describe how speculative capital flows, concomitant false pricing and the resulting misalignments are induced by short-term interest rate differentials and floating currencies in perfectly open markets. In light of the evidence, both policy targets for exchange rates and a new assignment of monetary and non-monetary instruments at the national level need to be reconsidered.

Section 2 describes some salient episodes of large cross-currency interest rate returns, currency gyrations and volatility as the outcome of carry trade position build-up and unwinding respectively. In section 3, the combination of external financial environment and domestic policies is associated to the large opportunities of speculation on a large number of emerging market currencies. Section 4 highlights the specificity of the Chinese case and its potentials for becoming either a target or a funding currency of cross-currency speculative flows. Section 5 concludes and points out how national and international policies need to address the major sources of imbalance by providing an institutional framework that would reduce the potential for speculative flows and promote coordinated efforts for exchange-rate adjustment and stable real exchange rates.

⁶ The literature on the validity of parity has been extensive and has strongly rejected the joint assumptions of UIP and of exchange rate expectations that are based on “perfect rationality”. Attempts to solve the rational-expectation UIP puzzle, either by adding a time varying risk premium or by assuming a transitional learning period, or by adding “noisy traders”, have delivered theoretically and empirically controversial results.

Table 1

**REAL EFFECTIVE EXCHANGE RATE (1996 = 100) AND CURRENT-ACCOUNT (C/A) BALANCE,
SELECTED ECONOMIES, 1996–2006**

<i>Economy</i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Economies with current-account surplus											
<i>Economies with large current-account surplus</i>											
China											
REER	100.0	106.8	112.4	106.3	109.2	114.6	111.9	106.6	105.1	107.5	109.9
C/A balance (\$ billion)	7.2	34.4	31.6	15.7	20.5	17.4	35.4	45.9	68.7	160.8	238.5
C/A balance as per cent of GDP	0.8	3.6	3.1	1.4	1.7	1.3	2.4	2.8	3.6	7.2	10.3
Japan											
REER	100.0	94.6	94.8	103.8	107.4	96.3	90.0	89.1	89.4	84.7	78.7
C/A balance (\$ billion)	65.7	96.6	119.1	114.5	119.6	87.8	112.6	136.2	172.1	165.7	170.5
C/A balance as per cent of GDP	1.4	2.3	3.1	2.6	2.6	2.1	2.9	3.2	3.8	3.6	3.9
Germany											
REER	100.0	94.1	94.1	91.1	84.8	84.8	85.6	90.1	91.3	90.7	90.5
C/A balance (\$ billion)	-14.0	-10.0	-16.3	-26.9	-32.6	0.4	41.0	45.6	117.9	129.0	147.0
C/A balance as per cent of GDP	-0.6	-0.5	-0.7	-1.3	-1.7	0.0	2.0	1.9	4.3	4.6	5.1
Russian Federation											
REER	100.0	109.0	96.2	63.4	70.7	85.3	89.3	92.3	99.1	109.0	119.8
C/A balance (\$ billion)	10.8	-0.1	0.2	24.6	46.8	33.9	29.1	35.4	58.6	83.6	94.5
C/A balance as per cent of GDP	2.8	-0.0	0.1	12.6	18.0	11.1	8.4	8.2	9.9	10.9	9.6
Saudi Arabia											
REER	100.0	106.2	112.9	109.8	110.6	114.5	113.0	104.3	97.0	94.2	93.1
C/A balance (\$ billion)	0.7	0.3	-13.1	0.4	14.3	9.4	11.9	28.1	52.0	90.8	95.5
C/A balance as per cent of GDP	0.4	0.2	-9.0	0.3	7.6	5.1	6.3	13.1	20.7	29.3	27.0
Switzerland											
REER	100.0	92.2	96.1	96.0	89.7	92.6	98.1	99.7	97.7	94.1	89.9
C/A balance (\$ billion)	22.0	25.5	26.1	29.4	30.7	20.0	23.0	43.0	50.5	61.0	63.5
C/A balance as per cent of GDP	7.3	9.7	9.7	11.1	12.4	8.0	8.3	13.3	14.1	16.5	16.8
Malaysia											
REER	100.0	96.8	79.7	78.9	79.3	83.3	83.2	79.6	76.4	75.5	75.5
C/A balance (\$ billion)	-4.5	-5.9	9.5	12.6	8.5	7.3	8.0	13.2	14.9	19.9	25.6
C/A balance as per cent of GDP	-4.4	-5.9	13.2	15.9	9.4	8.3	8.4	12.7	12.6	15.2	16.9
<i>Economies with small current-account surplus</i>											
Brazil											
REER	100.0	105.0	104.8	78.3	93.0	83.9	83.6	91.4	98.5	120.1	130.4
C/A balance (\$ billion)	-23.5	-30.5	-33.4	-25.3	-24.2	-23.2	-7.6	4.2	11.7	14.2	13.3
C/A balance as per cent of GDP	-3.0	-3.8	-4.2	-4.7	-4.0	-4.5	-1.7	0.8	1.9	1.8	1.2
Republic of Korea											
REER	100.0	93.0	74.2	82.9	88.5	79.9	82.5	82.1	84.5	93.2	99.2
C/A balance (\$ billion)	-23.1	-8.3	40.4	24.5	12.3	8.0	5.4	11.9	28.2	16.6	6.1
C/A balance as per cent of GDP	-4.1	-1.6	11.7	5.5	2.4	1.7	1.0	2.0	4.1	2.1	0.7
Chile											
REER	100.0	104.4	100.6	97.9	102.6	97.0	95.3	94.1	102.4	111.3	119.0
C/A balance (\$ billion)	-3.1	-3.7	-3.9	0.1	-0.9	-1.1	-0.6	-1.0	1.6	1.3	5.3
C/A balance as per cent of GDP	-4.1	-4.4	-5.0	0.1	-1.2	-1.6	-0.9	-1.3	1.7	1.2	3.9
Argentina											
REER	100.0	104.9	107.9	114.0	111.8	117.3	63.8	69.9	68.2	67.5	65.6
C/A balance (\$ billion)	-6.8	-12.1	-14.5	-11.9	-9.0	-3.3	8.7	8.0	3.3	5.6	8.0
C/A balance as per cent of GDP	-2.5	-4.1	-4.8	-4.2	-3.2	-1.2	8.9	6.3	2.2	3.1	3.7
Indonesia											
REER	100.0	92.9	48.5	74.5	71.9	69.2	83.4	88.3	82.0	82.9	102.2
C/A balance (\$ billion)	-7.3	-3.8	4.0	5.8	8.0	6.9	7.8	8.1	1.6	0.9	9.7
C/A balance as per cent of GDP	-2.9	-1.6	3.8	3.7	4.8	4.3	4.0	3.5	0.6	0.3	2.7

Table 1 (concluded)

REAL EFFECTIVE EXCHANGE RATE (1996 = 100) AND CURRENT-ACCOUNT (C/A) BALANCE, SELECTED ECONOMIES, 1996–2006

<i>Economy</i>	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Economies with current-account deficit											
<i>Economies with small current-account deficit</i>											
Mexico											
REER	100.0	113.5	114.4	125.0	138.1	145.9	147.1	136.8	135.7	142.5	146.4
C/A balance (\$ billion)	-2.5	-7.7	-16.0	-13.9	-18.7	-17.7	-13.5	-8.6	-6.6	-4.8	-1.9
C/A balance as per cent of GDP	-0.8	-1.9	-3.8	-2.9	-3.2	-2.8	-2.1	-1.4	-1.0	-0.6	-0.2
Colombia											
REER	100.0	106.4	99.8	90.6	83.1	80.5	79.1	70.5	77.1	87.5	86.1
C/A balance (\$ billion)	-4.6	-5.8	-4.9	0.7	0.8	-1.1	-1.4	-1.0	-0.9	-1.9	-2.9
C/A balance as per cent of GDP	-4.8	-5.4	-4.9	0.8	0.9	-1.3	-1.7	-1.2	-0.9	-1.6	-2.2
Euro area											
REER	100.0	91.4	93.7	91.0	83.6	84.8	87.9	97.9	101.5	100.6	101.3
C/A balance (\$ billion)	..	56.9	23.0	-34.0	-91.7	-19.3	50.3	36.6	61.8	-28.8	-20.1
C/A balance as per cent of GDP	..	0.9	0.3	-0.5	-1.5	-0.3	0.7	0.4	0.6	-0.3	-0.2
<i>Economies with large current-account deficit</i>											
Hungary											
REER	100.0	108.3	108.8	106.5	106.0	113.0	119.4	121.6	125.5	125.9	122.0
C/A balance (\$ billion)	-1.8	-2.0	-3.4	-3.8	-4.0	-3.2	-4.6	-7.2	-8.7	-8.1	-6.2
C/A balance as per cent of GDP	-3.9	-4.5	-7.2	-7.8	-8.5	-6.1	-7.1	-8.7	-8.6	-7.4	-5.6
New Zealand											
REER	100.0	102.0	90.4	86.8	78.0	77.4	86.7	101.7	109.6	115.2	105.9
C/A balance (\$ billion)	-3.9	-4.3	-2.1	-3.5	-2.7	-1.4	-2.4	-3.4	-6.5	-9.6	-9.4
C/A balance as per cent of GDP	-5.8	-6.4	-3.9	-6.2	-5.2	-2.8	-4.1	-4.3	-6.7	-8.9	-9.0
South Africa											
REER	100.0	105.7	95.8	92.0	90.6	82.2	73.4	97.6	106.6	107.5	101.5
C/A balance (\$ billion)	-1.7	-2.2	-2.4	-0.7	-0.2	0.1	0.7	-2.2	-7.4	-10.1	-16.3
C/A balance as per cent of GDP	-1.2	-1.5	-1.8	-0.5	-0.1	0.1	0.6	-1.3	-3.4	-4.2	-6.5
India											
REER	100.0	104.3	99.5	99.4	101.2	103.5	99.9	99.5	100.5	103.7	100.4
C/A balance (\$ billion)	-6.0	-3.0	-6.9	-3.2	-4.6	1.4	7.1	8.8	0.8	-6.9	-19.3
C/A balance as per cent of GDP	-1.6	-0.7	-1.7	-0.7	-1.0	0.3	1.4	1.5	0.1	-0.9	-2.1
Turkey											
REER	100.0	101.1	101.1	99.4	107.8	96.0	108.8	118.6	124.6	132.7	128.9
C/A balance (\$ billion)	-2.1	-2.1	2.0	-1.3	-9.8	3.4	-1.5	-8.0	-15.6	-23.1	-31.5
C/A balance as per cent of GDP	-1.2	-1.1	1.0	-0.7	-5.0	2.4	-0.8	-3.3	-5.2	-6.4	-8.0
Australia											
REER	100.0	104.0	96.8	97.6	93.5	89.1	92.7	103.2	112.7	119.0	123.6
C/A balance (\$ billion)	-15.7	-12.4	-18.4	-22.4	-15.2	-7.7	-16.2	-29.5	-40.1	-42.2	-40.6
C/A balance as per cent of GDP	-3.8	-3.0	-4.9	-5.6	-3.9	-2.1	-3.9	-5.6	-6.3	-6.0	-5.4
United Kingdom											
REER	100.0	114.1	119.0	117.0	114.7	111.5	112.7	109.6	114.5	111.7	111.4
C/A balance (\$ billion)	-10.5	-1.4	-5.3	-35.1	-37.6	-31.5	-24.8	-24.4	-35.4	-48.3	-80.0
C/A balance as per cent of GDP	-0.9	-0.1	-0.4	-2.4	-2.6	-2.2	-1.6	-1.3	-1.6	-2.2	-3.5
United States											
REER	100.0	104.5	113.7	113.8	115.0	122.0	122.0	112.7	105.8	102.9	99.8
C/A balance (\$ billion)	-124.8	-140.4	-213.5	-299.8	-415.2	-389.0	-472.4	-527.5	-665.3	-791.5	-869.1
C/A balance as per cent of GDP	-1.6	-1.7	-2.4	-3.2	-4.2	-3.8	-4.5	-4.8	-5.7	-6.4	-6.6
EU – Central and Eastern Europe ^a											
REER	100.0	104.4	110.6	106.1	111.0	119.5	122.1	121.0	125.9	136.2	142.6
C/A balance (\$ billion)	-14.4	-16.6	-18.6	-22.3	-20.3	-16.7	-18.5	-23.8	-37.5	-31.3	-38.8
C/A balance as per cent of GDP	-4.1	-4.7	-4.9	-6.0	-5.5	-4.1	-4.1	-4.4	-5.8	-4.1	-4.7

Source: Calculations based on IMF, Balance of Payment Statistics; and International Financial Statistics databases; and JP Morgan through Thomson Financial DataStream database.

a Czech Republic, Estonia, Hungary, Lithuania, Poland, Romania, Slovakia and Slovenia.

2. Asymmetric effects: winding and unwinding

As described in the UNCTAD/TDR (2007), over the past two years, yen- and Swiss franc-funded carry trade operations appear to be responsible for the large volatility and gyrations of some of the high-yielding currencies, such as the New Zealand and Australian dollars, the Hungarian forint, the Brazilian real, the Korean won and the Icelandic krona. The target currency, for instance, experienced what has become the typical currency speculation pattern: prolonged periods of steady appreciation and capital inflows, disrupted by shorter periods of sharp devaluations as carry traders unwound their positions. Figure 1 shows past carry trade potentials driven by the nominal exchange rate dynamics and the interest rate differentials between the Japanese yen and the Icelandic krona (left panel) along with those between the Japanese yen and the US dollar (right panel). The thick line represents a 3-month interest rate differential between a krona- and a yen-denominated asset; the thin line is the exchange rate change of the krona vis-à-vis the yen for the same period, while their sum (the shaded area) is the return on a 3-month (uncovered) lending in the Icelandic market by borrowing in Japan in local currencies. Since this return carries the risk of exchange rate changes, it is hereafter called “uncovered interest return” (UIR).

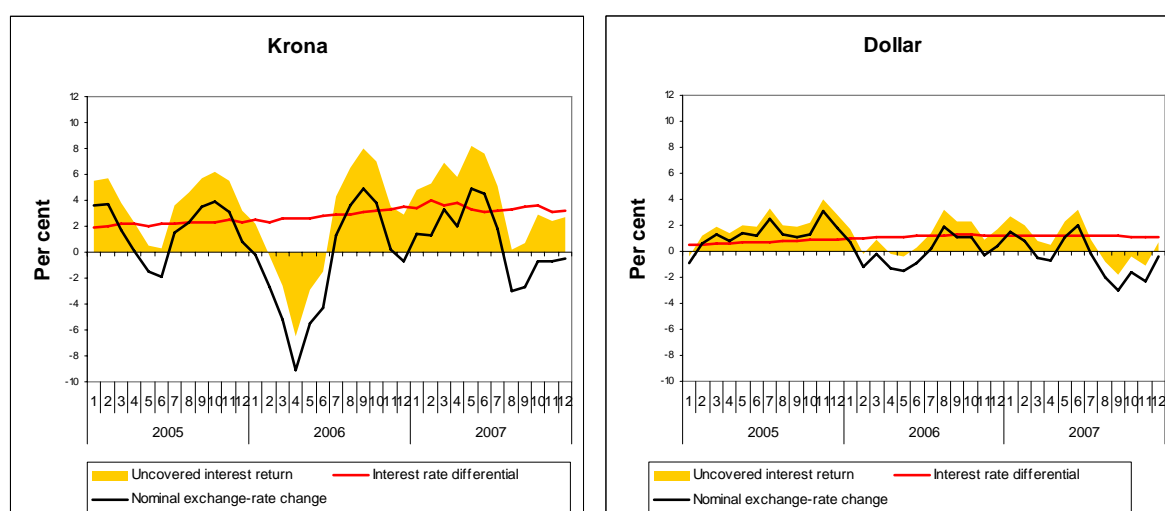


Figure 1: Yen carry trade on the Icelandic krona and US dollar between 2005 and 2007.

Source: UNCTAD secretariat calculations, based on IMF, International Financial Statistics database; and national sources.

Note: A positive change in the exchange rate indicates an appreciation of the currency concerned. Real exchange-rate trend is a 6-month moving average. For an explanation of differentials, see text.

Indeed, the dollar itself has been the target of "yen carry traders" and, to a lesser extent, of traders borrowing in Swiss francs, at least since the rise of the fed funds rate between 2004 and 2006 and may become again a funding currency with the persistent downward trend of both the exchange and interest rates triggered by the sub-prime mortgage crisis of summer 2007.

Figure 1 shows that the potentials for positive returns in cross-currency interest rate differentials persisted even in the face of moderate yen appreciations vis-à-vis the target currency, but this can be reversed by steep and prolonged exchange rate movement as in the first half of 2006.

Other countries, such as Brazil and Turkey, have experienced a steady appreciation trend of their currencies despite fairly high inflation rates. The real appreciation of the Brazilian and Turkish currencies and their large interest rate differentials vis-à-vis the other major currencies and particularly the yen have allowed for large gains in carry trade which persist despite the mid-2006 and summer 2007 turbulences (figure 2).

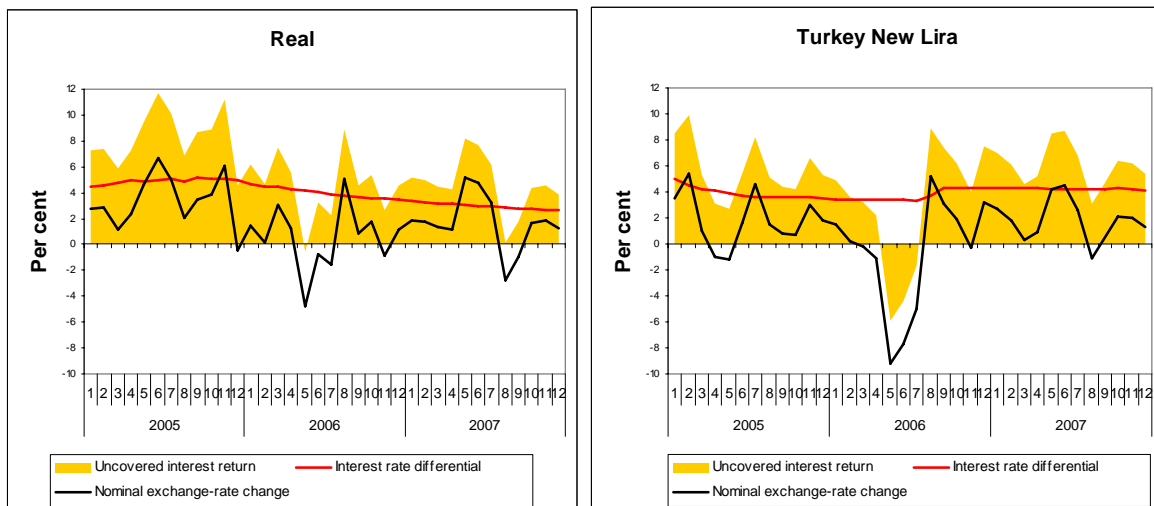


Figure 2: Yen carry trade on the Brazilian real and Turkey lira, between 2005 and 2007.

Source: UNCTAD secretariat calculations, based on IMF, International Financial Statistics database; and national sources.

The renmimbi/yen exchange rate changes have followed closely the dollar/yen rate changes even after the exchange rate regime in July 2005. The renmimbi/dollar exchange rate has trended downward in an increasing but relatively stable manner. This implied that while the returns on borrowing in yen and lending in renmimbi had a similar volatility, typically a positive but increasingly lower return than borrowing in yen and lending in dollars. On the other hand, borrowing in renmimbi and lending in dollar has typically yield a small and stable return despite the steady appreciation of the Chinese currency until very recently. With the summer 2007 financial turbulence and the acceleration of the dollar depreciation vis-a-vis any other major currency, a strategy of borrowing in renmimbi and lending dollar has become increasingly costly, while the yen strong appreciation and increasing volatility vis-à-vis the dollar and renmimbi has reduced the appeal of using the dollar as a target currency. It is apparent that the small return in lending in renmimbi and borrowing in dollar is due to the large dollar depreciation while a strategy of borrowing in renmimbi, to buy dollar and target other high-yielding emerging-market currency can provide a more stable source of profits than using the yen as a funding currency. Indeed, the loss due to the renmimbi appreciation can be more than compensated by the low volatility of the of the Chinese/US currency pair.

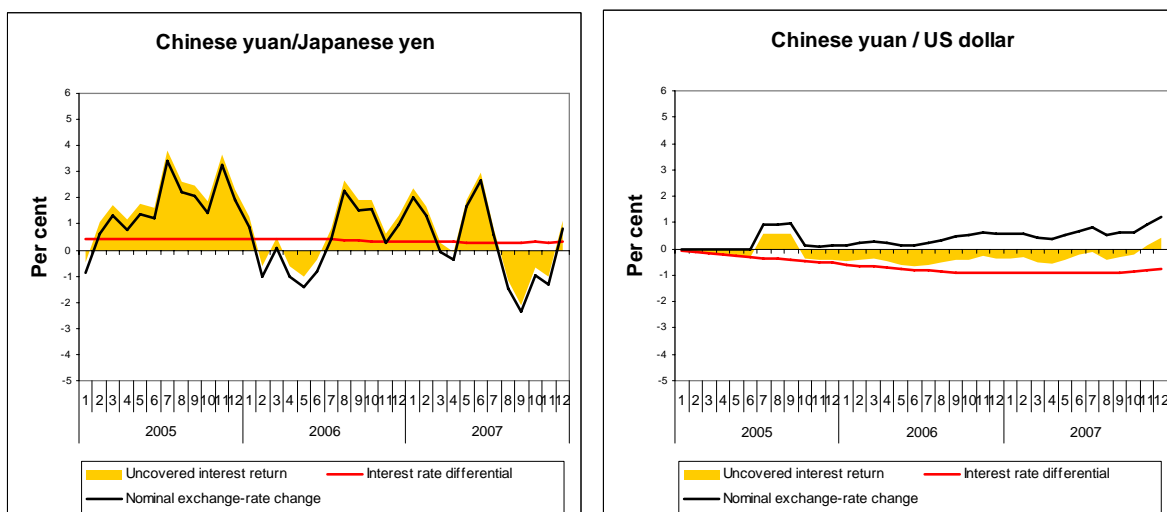


Figure 3: Potential for yen-funded and dollar-funded carry trade on the Chinese renmimbi, between 2005 and 2007. A negative return on the dollar funded carry trade obviously implies a positive return in the renmimbi funded carry trade on the dollar.

Source: UNCTAD secretariat calculations, based on IMF, International Financial Statistics database; and national sources.

Note: The scale of figure 3 is twice as the scale of figures 1 and 2.

One remarkable feature of any carry trade cycle is the contagion effect that the web of different funding and lending currencies of otherwise unrelated economies imposes on the countries involved.

Contagion spreads due to speculators' profit-maximization (or loss-minimization) motives: unwinding of positions in one country affects all the web-related economies. Such unwinding may be triggered by "conventional focal points" such as the external balance or expected GDP growth, or by the fear of an interest-rate correction and an exchange rate jump caused by the prospects of inflation of the funding currency. For instance, it has been debated whether the speculative run on the Icelandic krona was triggered by the perceived non-sustainability of the huge current-account deficit, by a downgrade from some rating agency, or even by a piece of "good news" related to the funding currency such as an improvement in the Japanese economy that had the potential of an interest rate increase and an appreciation of the yen. Undoubtedly, the carry trade unwinding from the krona in the early 2006 had a significant impact not only on the Icelandic financial and credit system but also on some third parties involved, namely emerging markets such as Brazil and Turkey, as traders needed to cash in some of their earnings from well-performing currencies to cover some of their losses from the krona trade (figures 1 and 2).

The other specific feature is the currency volatility associated with sudden unwinding of the positions. While uncovered gains and losses can be significant, their volatility depends entirely on fluctuations in the nominal exchange rate. Periods of relative stability and large interest rate differentials provide a strong incentive to traders, as in 2005 and late-2006. During that period the dollar appreciated vis-à-vis the two funding currencies, despite high and rising current-account deficits and higher inflation rates in the United States than in Japan or Switzerland. On the other hand, the carry trade is such a psychological game that it does not require big changes in interest differentials for the direction of the flows to be reversed. The movements between the yen and the dollar are under scrutiny and have become focal points that can trigger a wider reversal. A sudden pickup of expected volatility, as in mid-2006 and in the summer of 2007, can trigger a large unwinding of investments and spill over into emerging market economies. Currency volatility discourages carry trade operation by raising the risk that gains from interest differentials between the funding and the target currency may be eroded by adverse exchange rate movement. On the other had the reversal of the positions generates the volatility and the adverse exchange rate changes that lead to further reversal of the flows.

The summer 2007 turmoil originating in the US sub-prime credit market and spreading to other segments of the financial and credit markets worldwide affected carry trade operations and was amplified by sudden carry trade unwinding.

Figure 4 shows the most recent trend in the US \$/yen exchange rate and the rate of change. A strong appreciation of the yen since the end of June is associated with an increase in volatility visible in the large jumps from significant appreciations to minor depreciations.

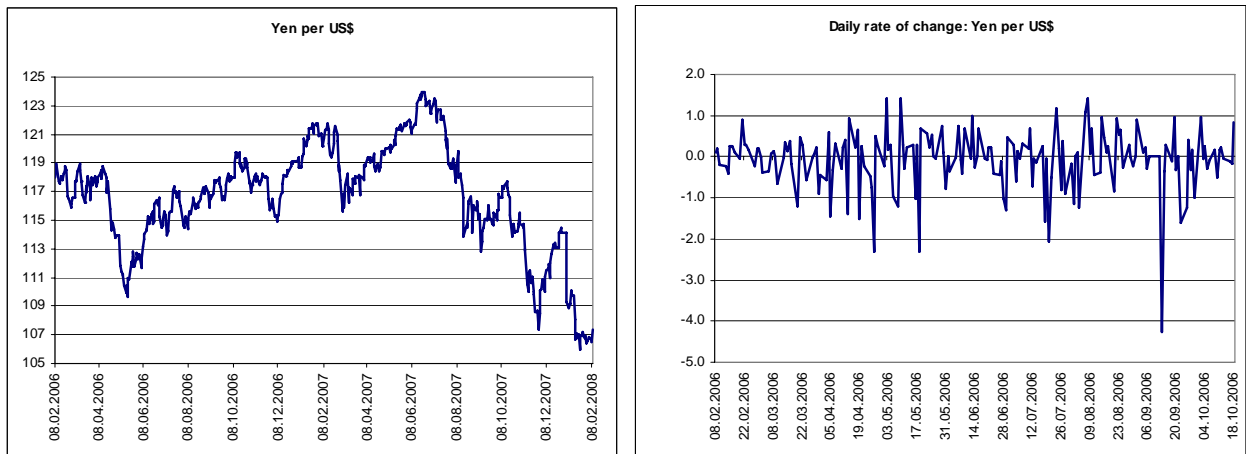


Figure 4: Recent yen carry trade unwinding and currency volatility with the US dollar. Yen per US \$ (left) and daily rate of change (right).
 Source: UNCTAD secretariat calculations, based on Bank of Japan.

The expectations of lower US rates to ease tight liquidity conditions along with slightly increasing rates in Japan reflecting inflationary pressures played a clear role in these latest developments. However, this trend change seems to be largely affected by increasing currency market volatility and the rising risk aversion of speculators.

The evidence for the Brazilian Real is supportive of the hypothesis that the fear of crisis can spill over into emerging markets, leading to larger risk aversion and reducing the demand for assets that are increasingly perceived as risky, making the currency carry trade less appealing. In summer 2007, currency carry trade towards the Brazilian real was unwinding, in part due to the increasing volatility of both the Japanese yen and the US \$. Despite a persistently large interest differential between Brazilian assets and the latter currencies, fearful investors were looking towards safer assets (figure 5).

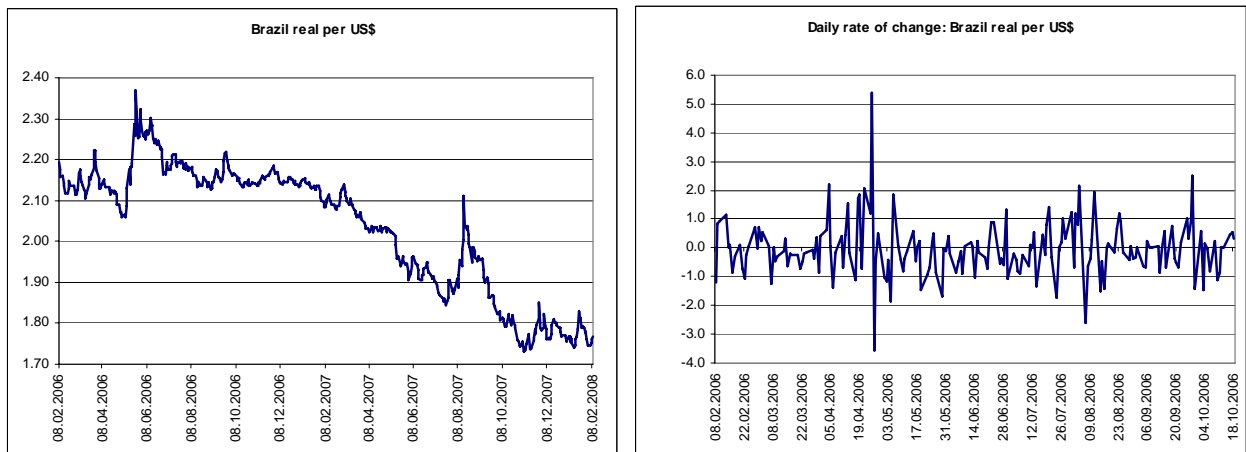


Figure 5: Recent dollar carry trade unwinding and currency volatility with the Brazilian real. Brazil reals per US \$ (left) and daily rate of change (right).
 Source: UNCTAD secretariat calculations, based on Banco Central do Brazil.

A Swiss franc carry trade in Eastern Europe has funded a few regional property bubbles (in 2006 more than 80 per cent of Hungarian mortgages were funded by inflows of Swiss francs). A sudden reversal of speculative flows can be behind the strong depreciation of the Hungarian forint and generate defaults and falling house prices (figure 6).

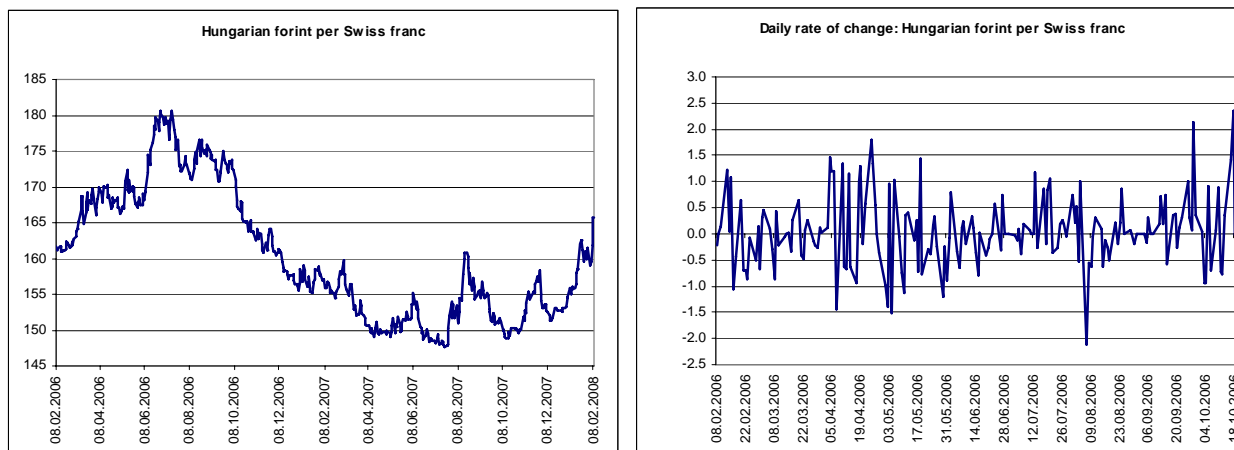


Figure 6: Recent Swiss franc carry trade unwinding and currency volatility with the Hungarian forint. Hungarian forint per Swiss franc (left) and daily rate of change (right).
 Source: UNCTAD secretariat calculations, based on Hungarian National Bank.

According to the Bank of Korea, yen carry trade funds that entered the Korean market only during the last year amounted to US\$ 6 billion for an approximate amount of US\$ 29 billion, or 10 per cent of total foreign reserves. The effects of the carry trade have hurt the export competitiveness of the nation’s small and medium-sized businesses. The strength of the won has hurt exporters, while the weakness of the yen has favoured the export-dependent Japanese economy. The sudden depreciation of the won, mostly attributed to carry trade reversals, raised concerns of small and medium-sized businesses that borrowed in yen to finance real estate and stock market investments (figure 7). As in the case of Hungary this sudden carry trade reversal could cause the local housing bubble to lead to further liquidity shortage.

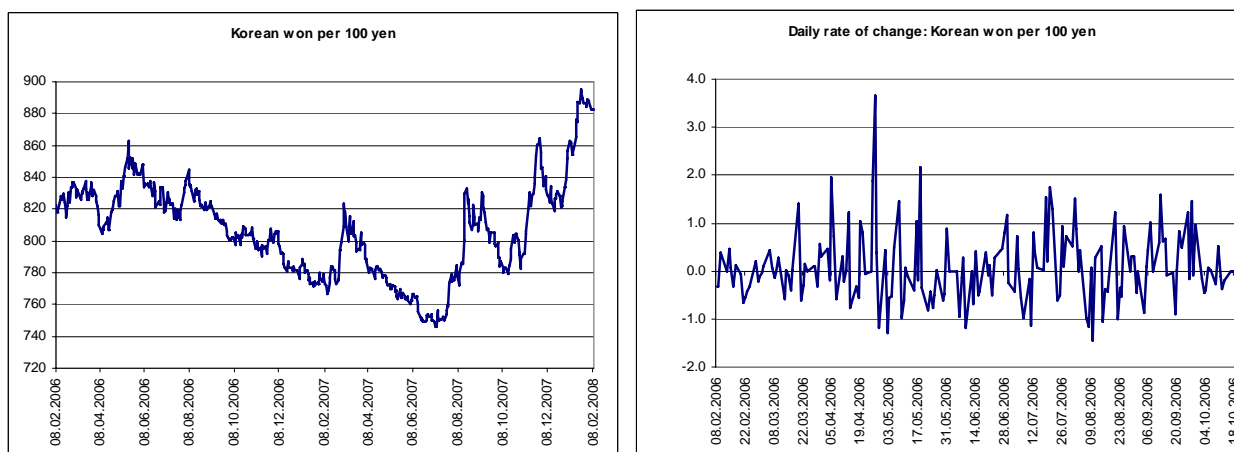


Figure 7: Recent yen carry trade unwinding and currency volatility with the Korean won. Korean won per Japanese yen (left) and daily rate of change (right).
 Source: UNCTAD secretariat calculations, based on Bank of Korea.

The yen carry trade unwinding affected the Chinese currency only indirectly. Figure 8 shows the renmimbi/yen exchange rate (upper left) and its daily rate of change (upper right) and renmimbi/dollar exchange rate (lower left) and its daily rate of change (lower right). The volatility increases in period of large uncertainties on the value of the yen and the dollar such as in the summer 2007, with the consequent fluctuations of the renmimbi vis-à-vis the two currencies.

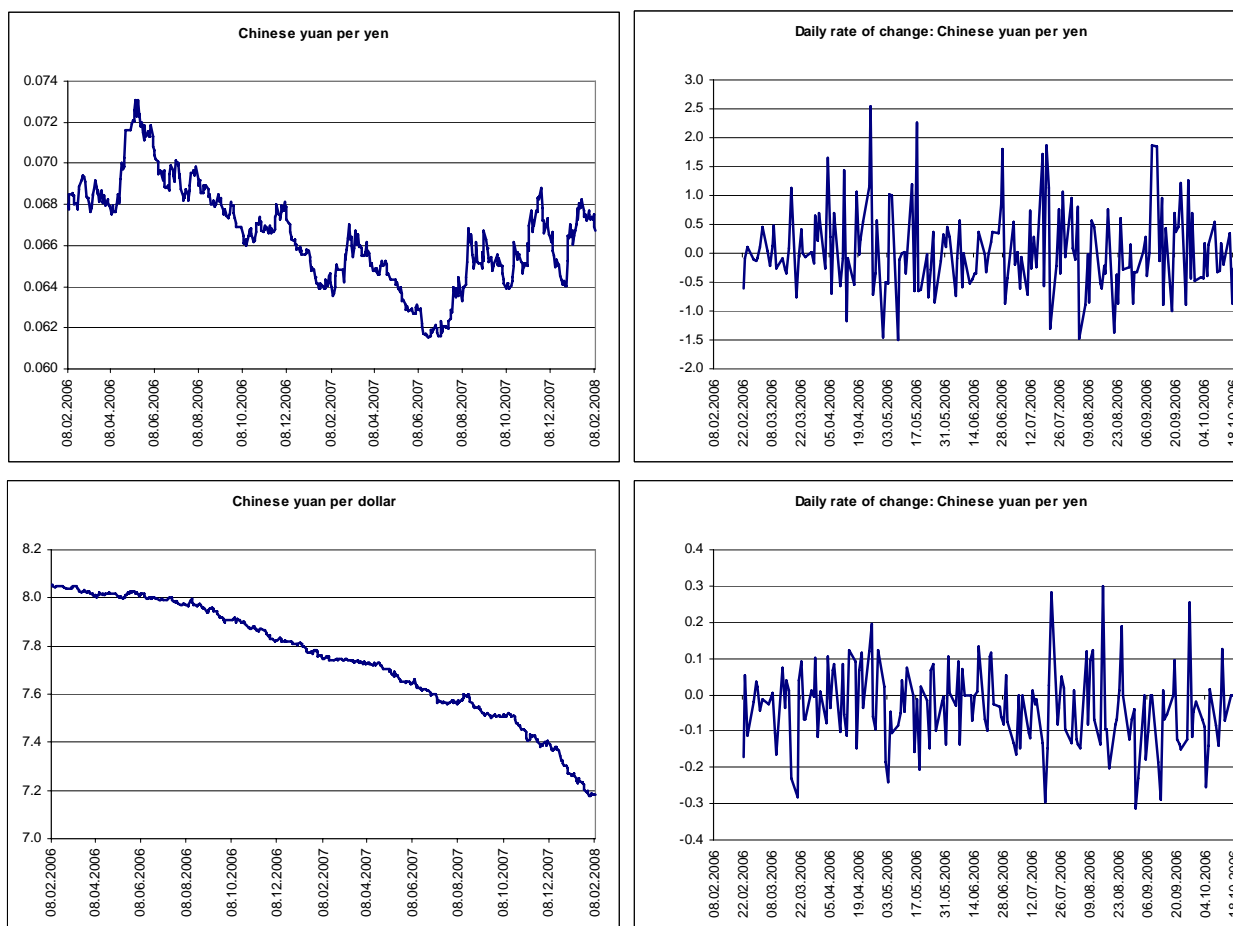


Figure 8: Recent turmoil and the renmimbi. Chinese renmimbi per yen (upper left) and its daily rate of change (upper right) and Chinese renmimbi per dollar (lower left) and its daily rate of change (lower right). Source: UNCTAD secretariat calculations.

3. Domestic policies and speculation opportunities

Figures 9 to 18 below show for some selected economies how alternative exchange-rate regimes and different monetary policies generate varying degrees of profit opportunities for international speculators; it also shows how much real appreciation (with a loss of overall competitiveness) can result from speculation that is driven by interest rate differentials.

We define ω , ρ , δ , π , and π^* as the uncovered interest return, the real appreciation, the nominal appreciation, the domestic and foreign inflation rates, respectively, and observe that $\rho = \pi - \pi^* + \delta$, and $\omega = i - i^* + \delta$, that is, the rate of real appreciation is the sum of the inflation differential and the nominal rate of appreciation, while the uncovered interest return is the sum of the interest rate differential and the nominal appreciation.

In figure 9, for instance, the short-term speculative potentials, ω , (right charts) are graphed together with the inflation differential and the real exchange rate dynamics (left charts). In the left charts, the green solid line represents the inflation rate differential between the selected economy and the United States, $\pi - \pi^*$, while the shaded area is the change in the real exchange rate, ρ , that is, the sum of inflation rate differential and the change in the nominal exchange rate vis-à-vis the dollar, δ , (blue thin line in the right charts). An index of the real exchange rate is plotted on the left chart (blue dashes) and measured on the right vertical

axis.¹ While the dollar is used as reference for comparison between the countries' trends and the rest of the world, it is easy to estimate the potentials of yen-funded carry trade by combining the latter figures with figure 1.²

Prior to the 1999-crisis, the situation in Brazil was characterized by an overvalued real exchange rate and a large differential between domestic and international interest rates aimed at maintaining capital inflows. During the same period, Mexico also had high domestic interest rates, while relatively high inflation rates were appreciating the real exchange rate. Brazil's 1999-crisis forced a large nominal depreciation of the real and led to an interest rate hike that also affected interest rates in Mexico and Argentina. After the 1999-crisis, Brazil adopted a floating exchange rate regime and implemented an inflation-targeting monetary policy (Barbosa, 2006). The 2001-crisis in Argentina and the 2002-depreciation of the Brazilian real triggered a surge in inflation rates following by a rise in interest rates. While interest rate differentials aimed at curbing inflation have been significantly reduced in Mexico, Brazil is still offering considerable potential gains for short-term speculation. Argentina, on the other hand, was able to contain real appreciation and succeeded in moderating inflation although preserving low interest rates. As apparent in figure 9, the average real exchange rate of Brazil was about 80 per cent of its pre-1999 crisis level.

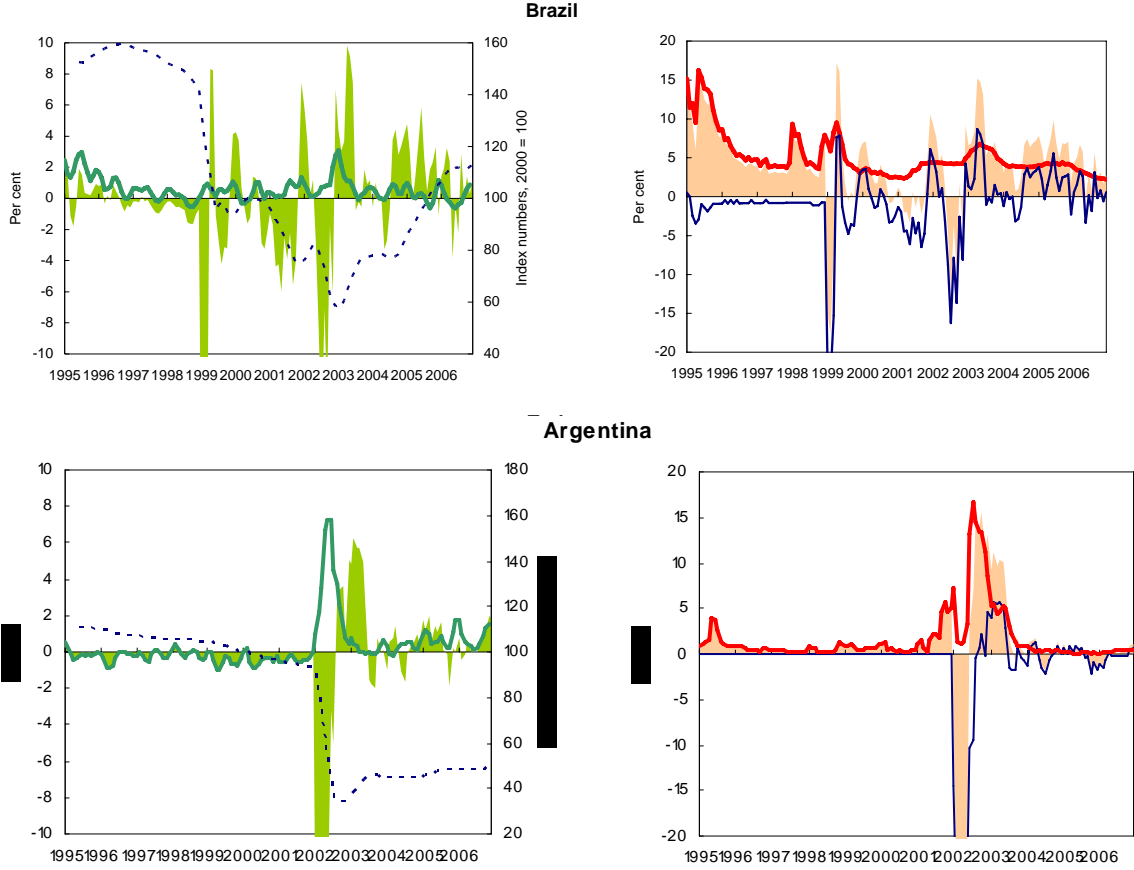


Figure 9 - Brazil and Argentina - Uncovered interest returns, exchange rate changes, inflation and interest rates differentials, 1995-2007. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

¹ To reduce its volatility, induced by monthly nominal exchange rate fluctuations, we use a 6-month moving average of the real exchange rate, with 2000 as the basis year.

² For a more detailed country by country analysis see the appendix of UNCTAD (2007) chap. 1 Section D.

Large returns on uncovered interest rate speculation as well as large real returns for domestic financial investors penalize international competitiveness and capital formation through high levels of the real exchange rate and the real interest rate. Figure 10, for instance, shows uncovered interest return, ω (vertical axis), and real exchange rate appreciation, ρ (horizontal axis), for some developed and emerging markets economies aggregated per region and averaged year by year.

The real interest rate $r \equiv i - \pi$ is defined as the difference between the nominal interest rate and the rate of inflation. The difference between the uncovered return, ω , and the real appreciation ρ is the real interest rate differential $\gamma \equiv r - r^*$, between the observed economy and the United States, with

$$\omega - \rho = (i - i^*) - (\pi - \pi^*) - \delta + \delta = (i - \pi) - (i^* - \pi^*) = r - r^*.$$

This is a measure of the relative cost of capital formation (i.e. the cost to start a business or to extend existing businesses by investment in fixed capital in the country concerned). Graphically, the difference to the United States is the vertical distance of any observation point from the bisecting line in the (ρ, ω) space. The further above the bisecting line the scatter points are, the higher the cost of capital compared to the United States.

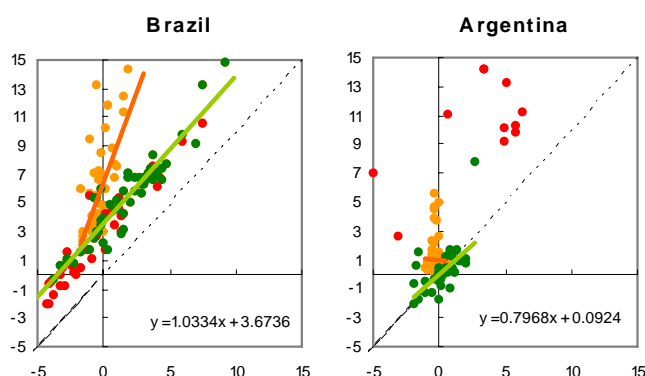


Figure 10- Brazil and Argentina - Uncovered interest returns and real appreciation 1995-2007. Vertical scale: uncovered interest return (per cent). Horizontal scale: real appreciation vis-à-vis the dollar (per cent). Source: Calculations based on IMF, International Financial Statistics database; and national sources.

The observation points in figure 10 (each representing a three-month investment) are grouped into a pre-crisis or pre-regime change period (orange colour), crisis and transitional period (red) and post-crisis or post-regime change period (green colour).

The relation between points in the (ρ, ω) space can be easily captured by identifying the parameters: α and β obtained by regressing the relation

$$i - i^* + \delta = \beta(\pi - \pi^* + \delta) + \alpha,$$

which implies

$$i - i^* = \beta(\pi - \pi^*) - (1 - \beta)\delta + \alpha$$

with β capturing the comovements of $\pi - \pi^*$, $i - i^*$ and δ , and with α measuring a structural tendency of having larger nominal interest rates. The dispersion of the points along the trend line and the length of the dispersion indicate large volatility of the exchange rate and/or inflation and of the interest rate differentials.

For values close to $\beta = 1$ and $\alpha = 0$, returns and the real exchange rate move along the bisecting line. Real rates of return are close to those of the United States, while interest rate differentials closely follow inflation differentials. Nominal exchange rate changes can be significant and induce large changes in the real appreciations, ρ , and the returns, ω , but do not have an effect on interest rates and inflation rates.

For values close to $\beta = 1$ and for $\alpha > 0$, returns and real exchange rates move on a 45° line, and similar considerations apply to the relation between the variables; however interest rates tend to be persistently larger than those of the United States.

For values of $\beta > 1$, the real interest rate differential γ is greater the larger the values of ρ and ω .

A nominal appreciation is associated with tightening of monetary conditions (with a coefficient $\beta - 1$, for a given inflation rate differential), a nominal depreciation is associated with larger inflation (with a coefficient equal to $(1 - \beta) / \beta$, for a given interest rate differential), and monetary policy responds to inflation by changing the interest rates (at a rate equal to β , for a given exchange rate). The larger β , the larger is the pass-through of the exchange rate on prices and the smaller is the effect of a nominal depreciation on the real exchange rate, or, reversing causality, the larger is the nominal depreciation required to preserve a competitive real exchange rate. Large interest changes are associated with smaller inflation rate changes. Large values of ω relative to ρ are also consistent with a state of hyperinflation where large nominal depreciations and interest rate differentials fail to prevent real appreciations and loss of competitiveness. Reverse considerations apply for $\beta < 1$.

Turkey provides an example of frequent changes in the monetary regime, resulting in large and volatile nominal exchange-rate changes and frequent real appreciation (mostly induced by large inflation rate differentials), and constantly associated with large uncovered returns on short-term capital (generated by the large interest rate differentials). Financial turbulence struck the country in 1999 and culminated in November 2000 (figure 11). Despite substantial financial assistance by the IMF (since December 1999) and substantial portfolio capital inflows, the financial situation once again became unsustainable in February 2001. GDP contracted by 5 per cent in 1999, grew by 7 per cent in 2000 and ended up with a fall of -7.4 per cent in 2001, displaying an extreme kind of boom and bust. The central bank officially gave up control of the exchange rate and, since November 2002, the post-crisis IMF stabilization programme has been officially based on two pillars of financial restraint: a primary surplus target for fiscal deficits and an inflation-targeting framework for monetary policy. However, this again has resulted in a strong tendency towards real appreciation and large uncovered interest returns. Only recently has the country managed to significantly reduce the interest rate differential, which fell below 3 per cent between July 2005 and March 2006. But with a very high real exchange rate and widening current-account deficits, the value of the currency dropped at the end of 2006 preceded by significant capital outflows. Turkey's frequent boom-bust cycles are clearly driven by the effects of potential and actual short-term capital flows (Telli, Voyvoda and Yeldan, 2007).

The picture for the group of African developing countries is dominated by South Africa. Following the recent adoption of inflation targeting, South Africa has experienced large nominal and real appreciation that have undermined its competitive position and led to a large current account deficit. Before the 2001 exchange rate fall, frequent depreciations had preserved the real exchange rate at rather undervalued levels. Interest rate differentials have been declined after the upswing of 2001, but significant outflows in 2005 and 2006 have led to large depreciations followed by sharp appreciation and return of portfolio flows.

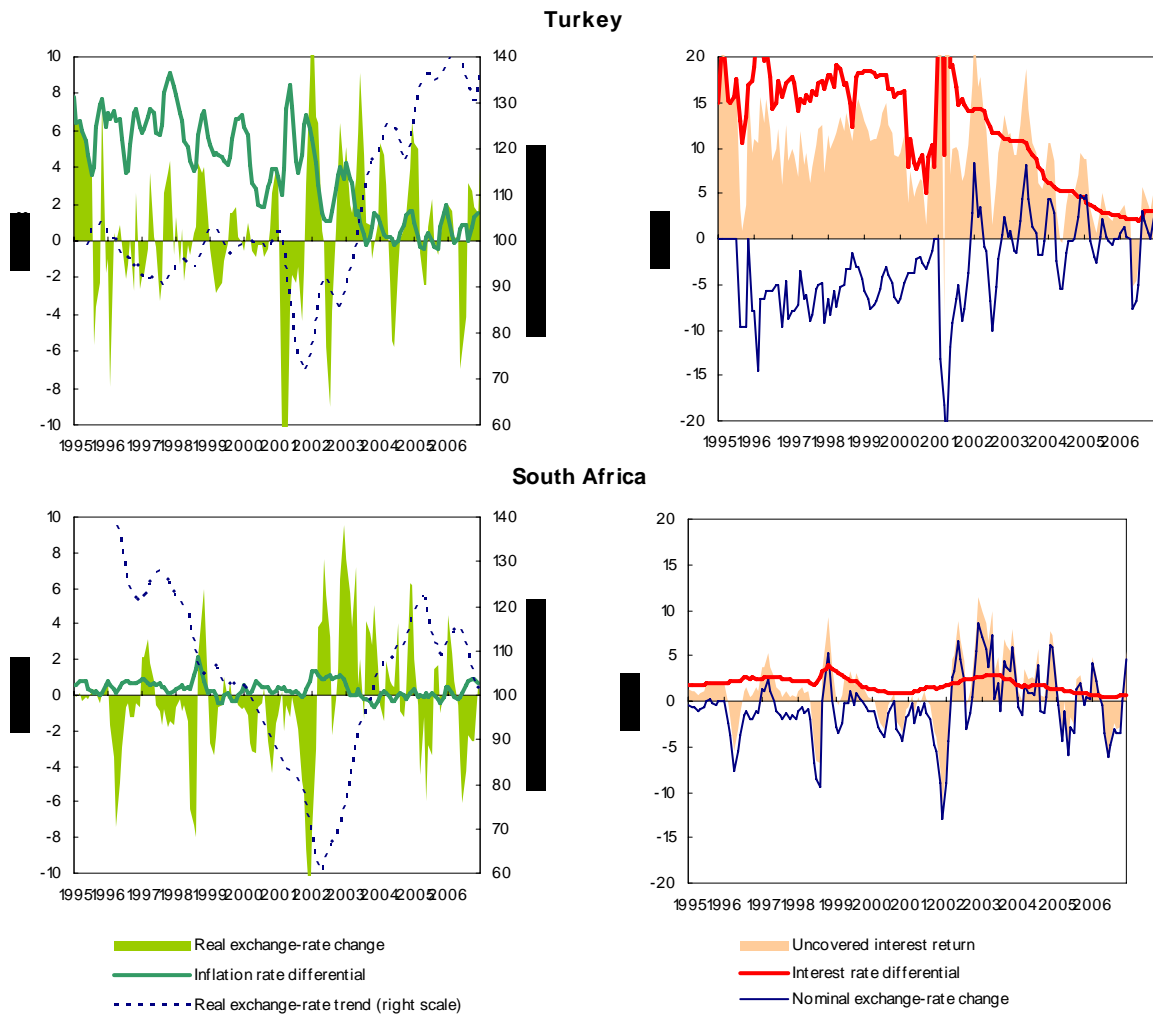


Figure 11. Turkey and South Africa - Uncovered interest returns, exchange rate changes, inflation and interest rates differentials, 1995-2007. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

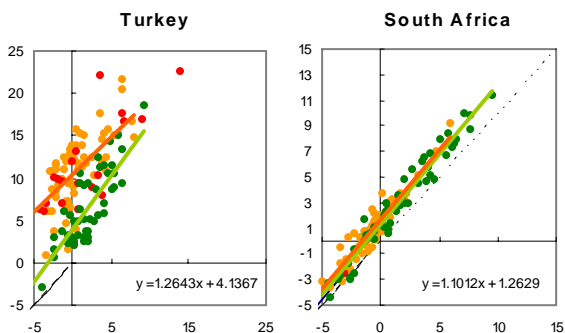


Figure 12: Turkey and South Africa. Uncovered interest returns and real appreciation 1995-2007. Vertical scale: uncovered interest return (per cent). Horizontal scale: real appreciation vis-à-vis the dollar (per cent). Source: Calculations based on IMF, International Financial Statistics database; and national sources.

The picture for Eastern Europe, dominated by that for the Russian Federation, has been characterized by large interest rate differentials and aimed at controlling inflation and preserving capital inflows or avoiding outflows. The recent decline in the interest rates has not accompanied a reduction in the inflation rates, nor substantial depreciations. The real exchange rate has been persistently rising across the economies in the group. Hungary high interest rates and appreciating currency have attracted capital inflows that accompanied by

large current account deficit have induced large fragility in the financial sector and volatility in the currency market (figure 13)

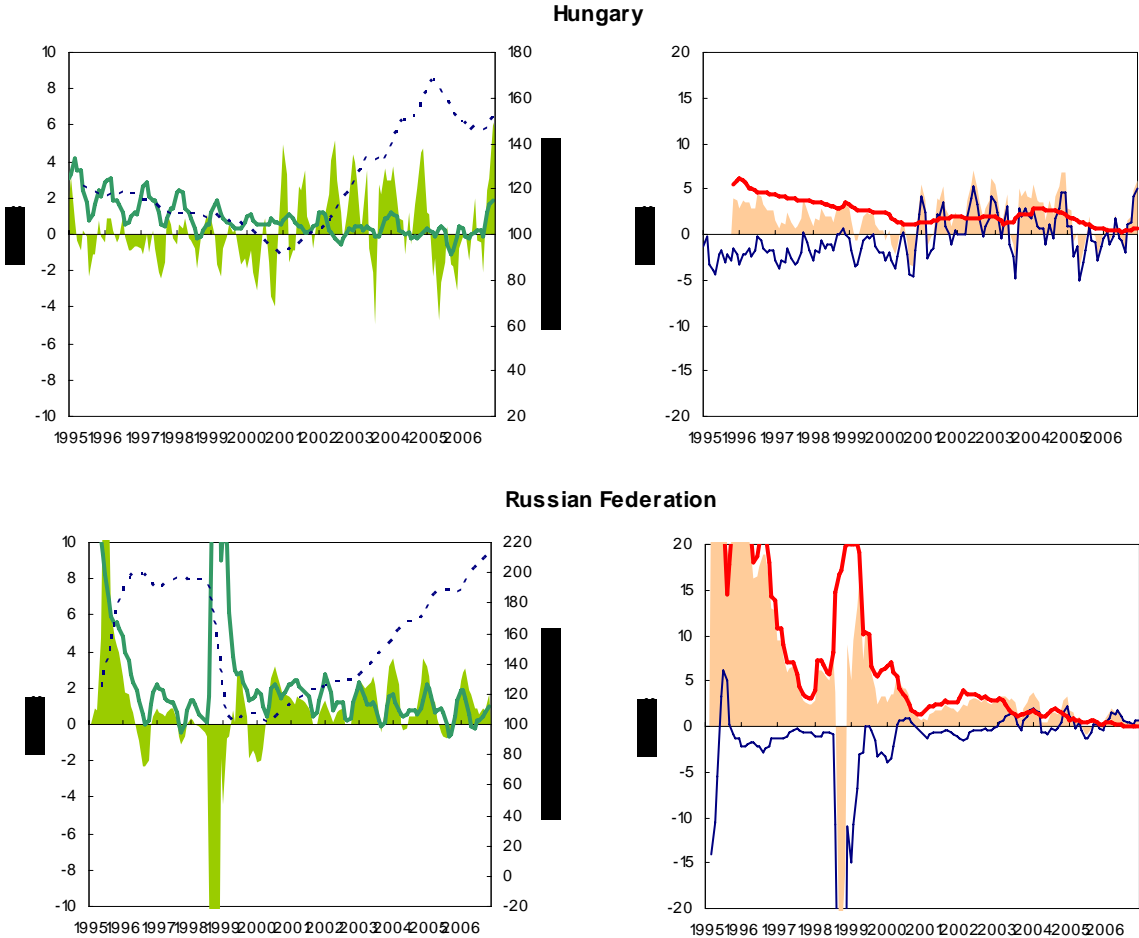


Figure 13: Hungary and Russian federation. - Uncovered interest returns, exchange rate changes, inflation and interest rates differentials, 1995-2007. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

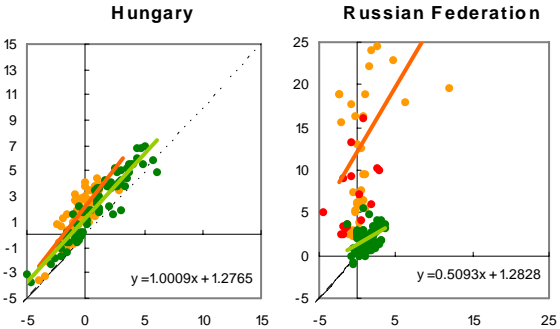


Figure 14: Hungary and Russian federation. Uncovered interest returns and real appreciation 1995-2007. Vertical scale: uncovered interest return (per cent). Horizontal scale: real appreciation vis-à-vis the dollar (per cent). Source: Calculations based on IMF, International Financial Statistics database; and national sources.

Some Asian emerging markets such as Korea and Thailand have adopted managed floating regime after the Asian financial crisis. Experience of the Asian group as a whole has been characterized by moderate inflation and low interest rates, which has stabilized expectations of investors in fixed capital and limited short-term speculative capital inflows.

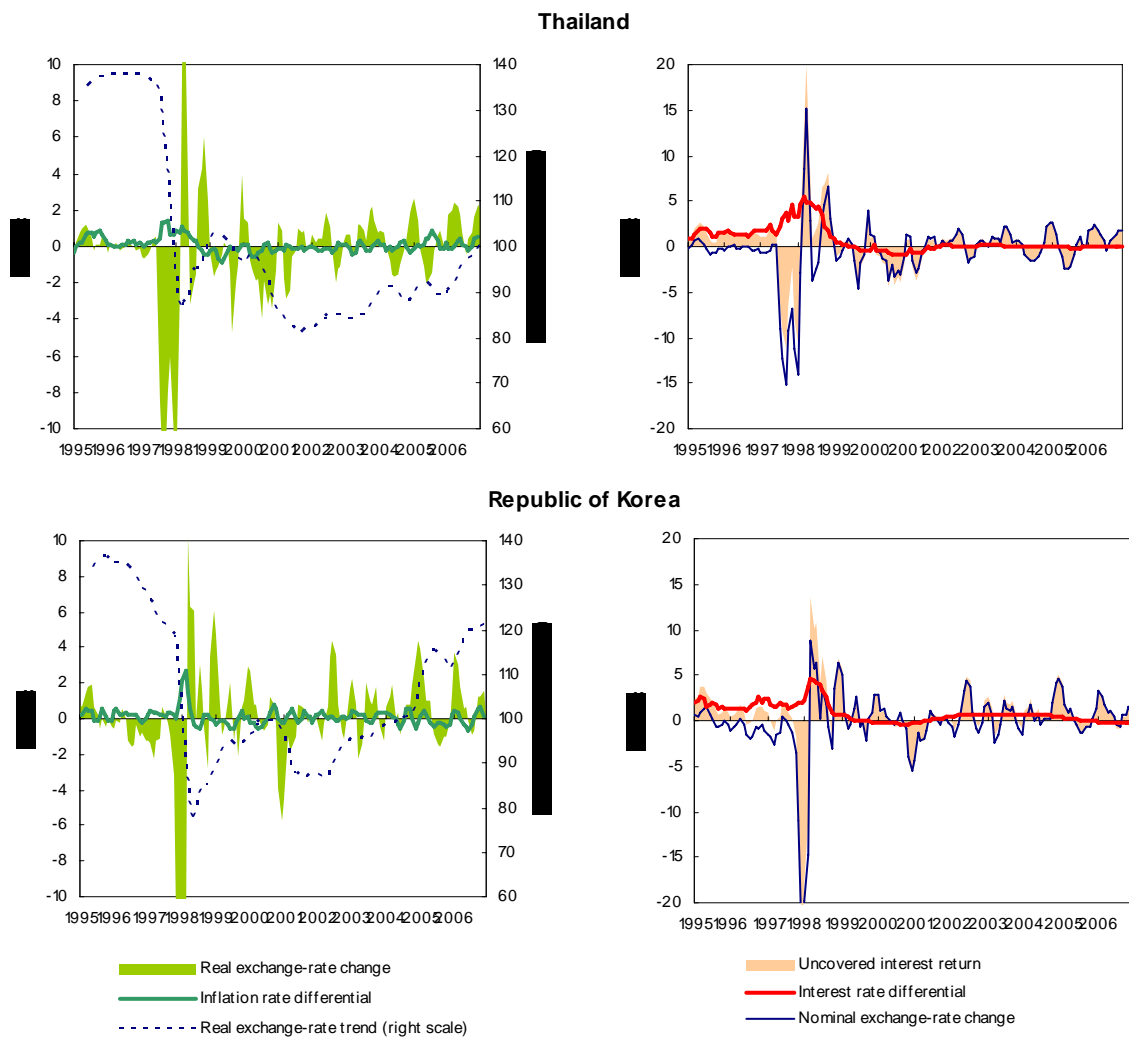


Figure 15: Republic of Korea and Thailand.- Uncovered interest returns, exchange rate changes, inflation and interest rates differentials, 1995-2007. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

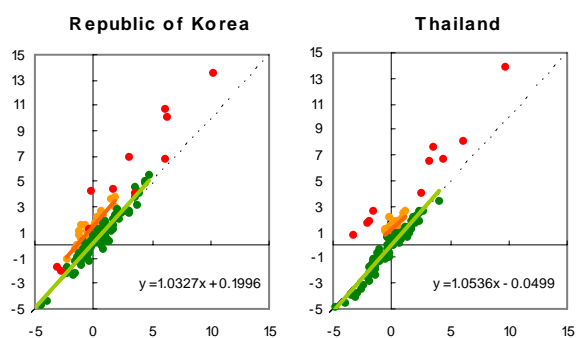


Figure 16: Republic of Korea and Thailand. Uncovered interest returns and real appreciation 1995-2007. Vertical scale: uncovered interest return (per cent). Horizontal scale: real appreciation vis-à-vis the dollar (per cent). Source: Calculations based on IMF, International Financial Statistics database; and national sources.

Regarding China, figure 17, its exchange rate, capital market and monetary regimes have been very stable over a long period of time. A pegged exchange rate, low inflation and low interest rates have led to expectations of stability by investors in fixed capital, and have not attracted short-term carry-trade speculators. Low nominal and real interest rates have caused short-term speculative profit returns to be nil or even negative, thereby discouraging speculative capital inflows of the carry trade type. A slight and consistent tendency towards real depreciation vis-

à-vis the dollar has only recently levelled off following some inflationary pressures between 2003 and 2004 and the authorities' decision to allow a moderate nominal appreciation in 2005 and 2006. The other economies of the region have recently experienced exchange rate volatility and real appreciation.

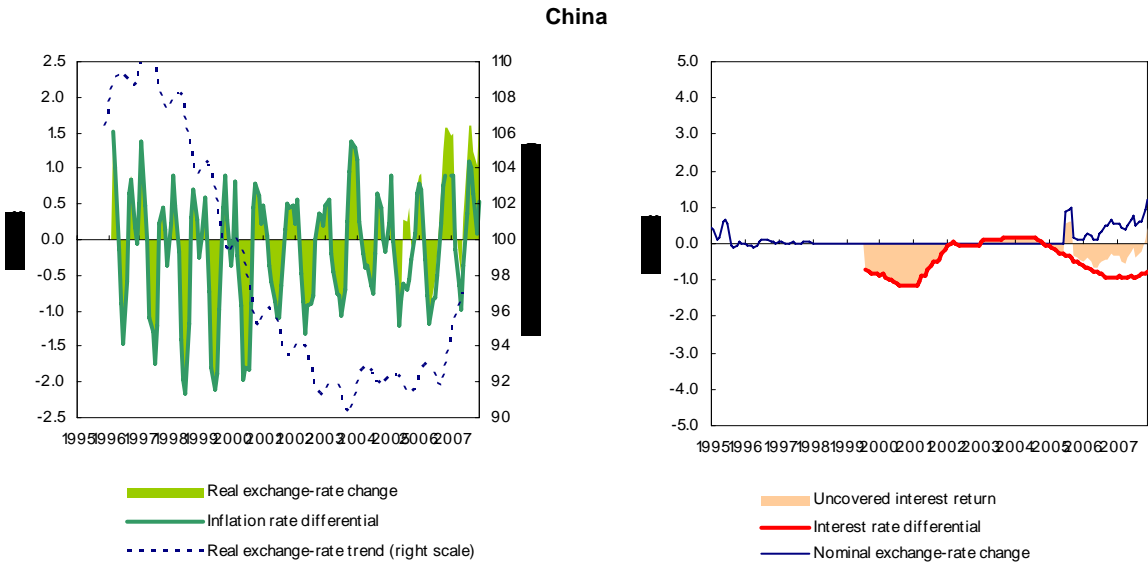


Figure 17: China - Uncovered interest returns, exchange rate changes, inflation and interest rates differentials, 1995-2007. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

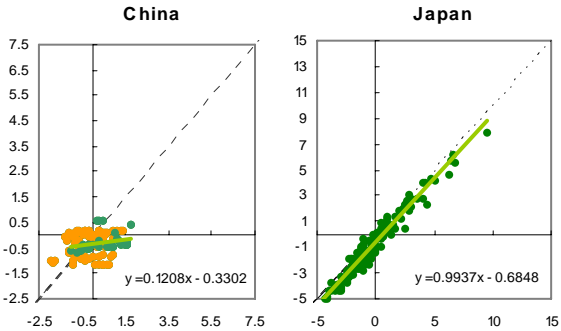


Figure 18 China and Japan. Uncovered interest returns and real appreciation 1995-2007. Vertical scale: uncovered interest return (per cent). Horizontal scale: real appreciation vis-à-vis the dollar (per cent). Source: Calculations based on IMF, International Financial Statistics database; and national sources.

Carry trade, as any other form of speculation on international interest rate differentials that is not covered in the forward currency market, involves a currency risk. Speculative capital flows typically respond to short-term current and expected monetary variables, such as the interest rate, the exchange rate, liquidity and risk. A floating exchange regime supposedly increases the risk and discourages such operations, while a fixed exchange regime provides a (partial) guarantee of exchange stability, and therefore encourages speculation. However, specific experience of carry trade in officially floating currencies does not confirm this hypothesis. Indeed, floating currencies under various monetary policy regimes, rather than being immune to speculative operations actually stimulate them if the amounts available to investors are big enough to drive the market in a certain direction.

Integrating risk into the analysis implies fundamental difficulties in assessing attraction for speculative capital flows and their effect on the real exchange rate. One difficulty is related to the definition and measurement of expectations and of perceived risk, because they are very sensitive to arbitrary behavioural assumptions. For the sake of simplicity, we look again at the ex-post uncovered interest rate returns, and take the associated currency volatility as a

measure of risk, to figure out what, on average, could be the gains from speculation, bearing in mind that expectations can be strongly adaptive under rather predictable environments. This implies that even a floating exchange-rate regime can provide a stable and comfortable environment for speculators as long as exchange rates do not systematically offset interest rate margins and the exchange rate movements can be influenced by the herd behaviour of speculators.

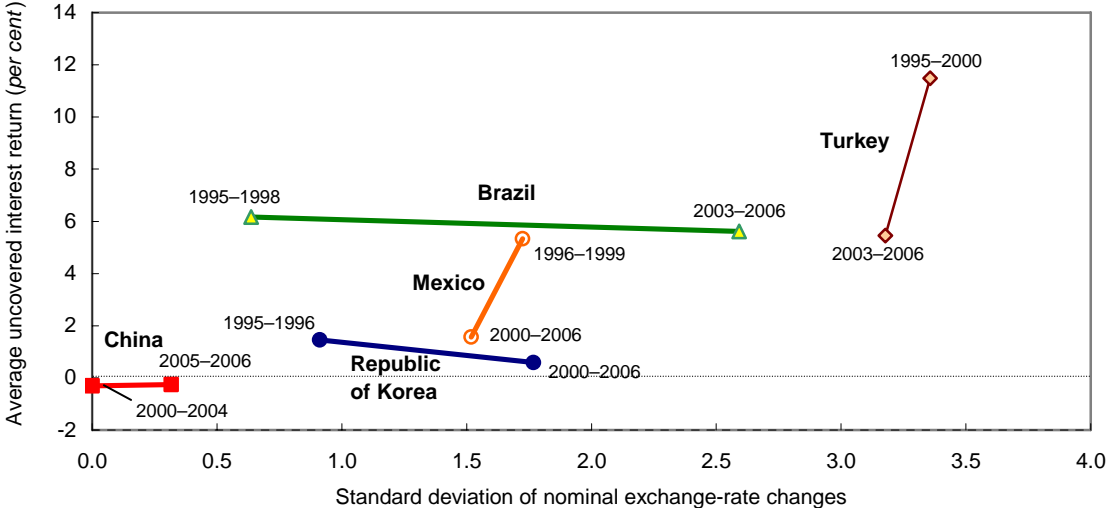


Figure 19. Average uncovered interest return and currency volatility in selected economies and periods. Source: Calculations based on IMF, International Financial Statistics database; and national sources.

Figure 19 gives an idea of the possible relationship between risk and returns for some pre- and post-crisis periods for some emerging market economies. The average quarterly returns created by the exploitation of interest rate differentials (vertical axis) are plotted against the volatility of the nominal exchange rate (horizontal axis). The two points for each country compare the situation before and after crisis episodes – periods of exceptional volatility and change.³ Large gains at relatively low risk were possible in the 1990s in the case of Brazil and Mexico before their respective crises. Turkey offered spectacular returns in both periods, but these were associated with rather high risk. The Republic of Korea provided much smaller but more stable returns, while China attracted no capital inflows.

The more recent periods display higher risk in the case of Brazil and the Republic of Korea, but still very high returns in Brazil. In Turkey and Mexico, the uncovered return decreases, but the risk is more or less unchanged. Both countries and Brazil remained attractive places for international speculators even after the regime change to floating and lower interest rates. In general, there has been either an increase in risk, as in Brazil and the Republic of Korea, due to a switch to a floating exchange rate, or a fall in the return, as in Mexico and Turkey, due to a reduction in the interest rate differentials after the monetary regime change. Turkey, Brazil and Mexico, given the combination of return and risk, remained subject to the same kind of speculation before and after changes in their monetary regime.

To summarize, in the past, in many cases managed depreciation or pegging of exchange rates, associated with large interest rate and inflation rate differentials, have led to real appreciation and the loss of competitiveness, and have offered opportunities for speculation. This occurred to a large extent in pre-crisis Brazil, Thailand, the Republic of Korea and the Russian Federation in the 1990s. Unfortunately, the regime switch to floating and inflation targeting

³ Brazil 1995-1998 and 2003-2006, China 1995-1997 and 1998-2006, Mexico 1996-1999 and 2000-2006, the Republic of Korea 1995-1996 and 1999-2006, and Turkey 1995-2000 and 2003-2006.

improved the situation only in those countries that were able to consistently reduce their interest rate differential against the United States. In many other cases, despite slightly lower inflation and interest rate differentials, the tendency towards real appreciation continued unabated. Moreover, the opportunities for international speculation, though subject to larger exchange-rate risk, have not faded; instead, they remain a major source of instability and risk. Short-term interest rates, as the main instrument to combat inflation, have generated new opportunities for large-scale speculation on the currency market. The real costs for the economies will be very high if the restrictive effects of chronic real appreciation add to high real interest rates and penalize non-subsidized domestic capital formation.

In those regions where most of the economies experienced a change in their monetary regime, with or without a crisis, the data points display a larger vertical dispersion due to a reduction of the interest rate differential but not necessarily a reduction in volatility of the exchange rate, inflation rate and interest rate.

Regions whose data points are close to the bisecting line enjoyed low interest rate differentials and displayed a close association of interest rate and inflation rate differentials. This applies to Asia and sub-Saharan Africa. As regional groups, Latin America, Africa, and Eastern Europe have experienced volatile real exchange rates and uncovered interest returns.

Regarding specific country experiences, the change in monetary regimes from soft peg to float in Thailand and the Republic of Korea, following the Asian financial crisis in 1997–1998, was accompanied by considerable exchange-rate volatility, but with a tendency towards real appreciation. In Indonesia, increased exchange-rate volatility went hand in hand with an even larger appreciation and no significant reduction in interest rates. Again, China displays a distinctive pattern of negative real interest rates and a fixed exchange rate, which, given a high degree of stability and the very low cost of capital, has been favourable to investment and the creation of fixed capital.

Brazil, Hungary, Mexico, and South Africa have recently adopted an inflation-targeting monetary regime that typically requires a free float of the currency and control of inflation rates through interest rates. Although the post-crisis regime marked deep structural changes for Brazil, Hungary, and Mexico, with a clear shift towards a lowering of interest rates and inflation rate differentials, the level of interest rates is still very high, volatility is large, and the tendency towards real appreciation and a deterioration in overall competitiveness persists for Brazil, Hungary, and South Africa. Their high real interest rate, consistently larger than the United States benchmark, constrains capital accumulation and may generate inflationary pressures by reducing capacity growth in the longer run.⁴

4. National and international policies to prevent speculation: options for China

A stable and prospering external sector is often fundamental ingredient for an effective development strategy. Recent studies have found that a “competitive and stable” real exchange rate is a key economic policy tool for developing countries because it enables a persistent pattern of export expansion and investment growth based on a profit–investment nexus (UNCTAD 2004 and 2006; Rodrik, 1995) allowing to take advantage of favourable fundamentals, externalities and proper institutions (Eichengreen, 2007). The challenge for national policies is to combine the control of inflation rates, which has taken centre stage in many developing countries, with international competitiveness and low exchange-rate variability and in a world of free and volatile short-term capital flows.

⁴ For a more detailed country by country analysis see UNCTAD (2007) chap. 1 Section D.

The stable growth performance of China would not have been possible without the strategy of unilaterally fixing the exchange rate, which has been implemented since 1994. This strategy was successful because it was accompanied by a reform of the wage-setting regime in the mid-1990s, a heterodox macro-economic demand management that has addressed the country's needs and a rather closed capital account. This arrangement has made it possible for China to both master the challenges of globalization and modernize the domestic economy at the same time. Without this macroeconomic complement to favourable microeconomic conditions, it is argued, the stable and vigorous growth of the past decade would not have been possible.

As emphasized in UNCTAD (2004, chap. IV), large inflation differentials lead to large interest rate spreads, because central banks use the interest rate as the principal instrument to curb inflation via a contraction in credit and demand. But nominal returns are the focus of carry trade by financial investors. These investors are not concerned with inflation differentials and other fundamentals per se, as long as they do not constitute a threat to the stability of the currency and therefore to their expected profits. The capital inflows induced by nominal interest rate spreads, coupled with an exchange rate that is perceived as either stable or appreciating, on average, or even depreciating but still allowing for sufficient returns, have huge repercussions for the real economy and for current-account imbalances worldwide.

The financial and real systemic effects of portfolio capital inflows vary according to the specific institutional, structural and even cyclical situation of the recipient economy. Financial development and intermediation, the size of the inherited internal and external debt, the composition of production and of the trade balance affect the capacity to absorb the flows and their impact on relative prices and on growth. Nevertheless, the scenarios that characterize emerging market financial fragility and volatility share common features. Under a fixed exchange rate or crawling peg regime, capital inflows boost reserves, money creation and credit expansion, which may induce consumption growth and inflation and an import surge. Traditional macroeconomic analysis typically assumes that currency volatility tends to reduce any form of speculation. However, even allowing for a certain degree of risk aversion on the part of speculators (meaning that for identical expected returns they will choose the assets with a smaller risk), *exchange-rate flexibility* does not discourage portfolio and currency speculation unless interest rate differentials could be offset by the risk of depreciation, in periods of extreme volatility. In particular, if the herd behaviour of speculators is sufficient to influence appreciate the target currency, the appeal of large returns is sufficient to generate them.

That is why under an officially floating exchange regime, inflows can induce nominal and real appreciation and increase reserves to the extent that the central bank, openly or implicitly, is willing to contain exchange-rate changes. There may be a time lag in their effects on the real side of the economy but it may be critical. An overvalued exchange rate penalizes exports and reduces competitiveness, and therefore the growth of firms in the traded-goods sector. This in turn adversely affects income and growth in general. Finally, deteriorating economic conditions may make the country the object of a renewed focus on “bad fundamentals”; the exchange rate may sharply devalue and the central bank’s ability to contain inflation may be called into question.

Inflation in China has been remarkably low for a country that has reached a double digit GDP growth rate. Chinese inflation appears to have two main sources: (i) a slow down in the productivity growth rate and relative acceleration of the wage rate that has been pushing up unit labour costs in the last four years, (ii) and a relative price increase of food supply and oil. While the latter inflationary source can generate structural change in the relative prices of food and manufactures and can be contained, the latter source of price increase may have a more persistent effect by generating some inertial wage-price dynamics and inflation

expectations. Inflation scares have been traditionally avoided by a strong commitment of the government to control some prices notably of government services and utilities. Although the range of prices under direct administrative control is limited, inflation expectations can be dampened by the credibility and reputation capital of the government commitment. Rising unit labour costs may on the other hand structurally increase inflation. However, the wage-price setting mechanism may contain the rise of inflation from a two to a three to five percent.

Is restrictive monetary policy necessary to contain the emerging inflation in China? How can they be implemented? Would a rise in the reserve requirements and a money-growth contraction really curb inflation even at the cost of raising the interest rates and adversely affecting the cost of keeping the newly acquired lower yielding USD reserves?

According to Marvin and Prasad (2006) and Prasad et al. (2005), a greater flexibility and mild form of inflation targeting would allow a better domestic macroeconomic management. Viewed in terms of the much celebrated open economy trilemma, China would shift from a regime of limited capital account openness and fixed exchange rate system to a regime of more openness and flexibility. The flexibility of the exchange rate would be the requisite for maintaining an independent monetary policy while progressively opening up to foreign flows and increasing the interdependence with the global economy. A greater exchange rate flexibility would increase the scope for an independent monetary policy, while gradually improving the soundness of the financial and moving towards greater capital account liberalization. Greater exchange rate flexibility would require and stimulates the development of currency risk management instruments such as forward and hedge instruments which on the other hand allows for the creation of speculative positions.

Both before and after the exchange rate regime change in July 2005, the large and persistent capital inflows mostly FDI and current account surpluses have induced strong pressures on the renminbi peg to the dollar and to the reference currency basket, respectively, that have required large intakes of foreign reserves. There is a widespread perception that large inflows are including speculative positions waiting for large appreciations of the renminbi or even a further one-off appreciation.

According to two prominent monetarist economists McKinnon and Mundell (McKinnon and Schnabl, 2003 and Mundell, 2003) China should have not changed its regime, since real imbalances could not be cured with monetary measures, that would lead to more currency volatility.

If targeting inflation via interest rates involves serious additional costs by inducing capital inflows, such anti-inflationary strategies have to be weighed against alternatives that might be less tried and tested but may yield significant longer run real benefits. These alternatives may be found in the new and heterodox national macroeconomic policies applied with outstanding success in most of Asia (UNCTAD 2006, chap. IV, D.). In this approach, monetary policy focuses mainly on the external sector, including the exchange rate. Inflation is controlled by other factors and policies than those controlled by the central bank: typically, well-designed income policies taking into account the existing labour market institutions have played a leading role.

Avoiding large gains for foreign investors from short-term arbitrage operations keeps the *actual* rate of appreciation in check and cuts the link between these capital flows and the real exchange rate, thus maintaining a country's competitiveness. Successful countries were consistently able to prevent persistent real appreciation. This may require policies to restrain short-term capital inflows and outflows through regulation as long as the expected profitability from speculation cannot be reduced by a traditional set of policies like an interest

rate reduction. Internal and external debt restructuring may help limit the effect of international speculation by reducing nominal interest rates.

The ongoing carry trade from the yen or Swiss franc, from countries with very low inflation and very low nominal interest rates to countries with higher inflation and higher interest rates, such as Brazil, Hungary or New Zealand, breaks the vital link between interest rate differentials and the risk of currency depreciation. If floating exchange rates do not follow the purchasing power rule in the short term and destabilize the external accounts, then international policy should aim at preserving this rule as a policy target. Unhedged borrowing by hedge funds and other speculators more than anything else raises questions about the wisdom of widespread acceptance of floating as the only feasible solution to the problem of the external balance.

Developing countries in general need flexibility and a sufficient number of instruments to prevent excessive volatility of the whole external sector which threatens long-term investment and successful catching up. Evidence does not support the orthodox belief that, with free floating, international financial markets will perform that role by smoothly adjusting exchange rates to their “equilibrium” level, while with fixed exchange rates, product, financial and labour markets will always be flexible enough to smoothly and rapidly adjust to a new equilibrium. In reality, exchange rates under a floating regime have proved to be highly unstable, leading to long spells of misalignment, with grave consequences for the real economic activity of the countries concerned. The experience with hard pegs has not been satisfactory either: the exchange rate could not be corrected in cases of external shocks or misalignment, adjustments were costly in terms of lost output, and the real sectors of the domestic economy bore the brunt.

Given this experience with rigidly fixed and freely floating exchange rates, “intermediate” regimes have become the preferred option in most developing countries with open capital markets; they provide more room for manoeuvre when there is instability in international financial markets and enable adjustment of the real exchange rate to a level more in line with a country’s development strategy. None of the “corner solutions” offer these possibilities. Developing countries that are not members of a regional monetary arrangement that could deal with the vagaries of the global financial markets thus have to resort to controls of short-term capital flows or adopt a strategy of undervaluation and unilateral fixing (UNCTAD 2004).

To prevent manipulation of the exchange rate, wage rates, taxes or subsidies in the bid for global market shares, and to deter the financial markets from driving the competitive positions of nations in the wrong direction, a new code of conduct is needed that would regulate the overall competitiveness of nations. Such a code of conduct, as part of the global governance system, would have to balance the advantages of one country against the disadvantages of other, directly or indirectly, affected countries. For example, changes in the nominal exchange rate that deviate from the fundamentals (inflation differentials) affect international trade in exactly the same way as do changes in tariffs and export subsidies. Consequently, such real exchange-rate changes have to be subject to multilateral oversight and negotiations. Reasons for the deviation from the fundamentals and the necessary size of the deviation have to be identified by an international institution and enforced by a multilateral body. Such rules could help protect all trading parties against unjustified overall losses or gains from competitiveness, and developing countries could systematically avoid the trap of overvaluation that has been one of the major impediments to prosperity.

A long-term solution for the international financial system has to start with the recognition that the idea of a cooperative global monetary system is as compelling as the idea of a

multilateral trading system. As with multilateral trade rules, a well-designed global financial system has to create equal conditions for all parties involved and help prevent unfair competition. Indeed, reasons for which the International Monetary Fund (IMF) was founded more than 60 years ago are still largely valid. Avoiding competitive depreciations and other monetary distortions that have negative effects on the functioning of the international trading system is more important in today's highly interdependent world than at any other time in history.

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