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## I. Capital flows and capital floods: The new curse of a globalized economy?

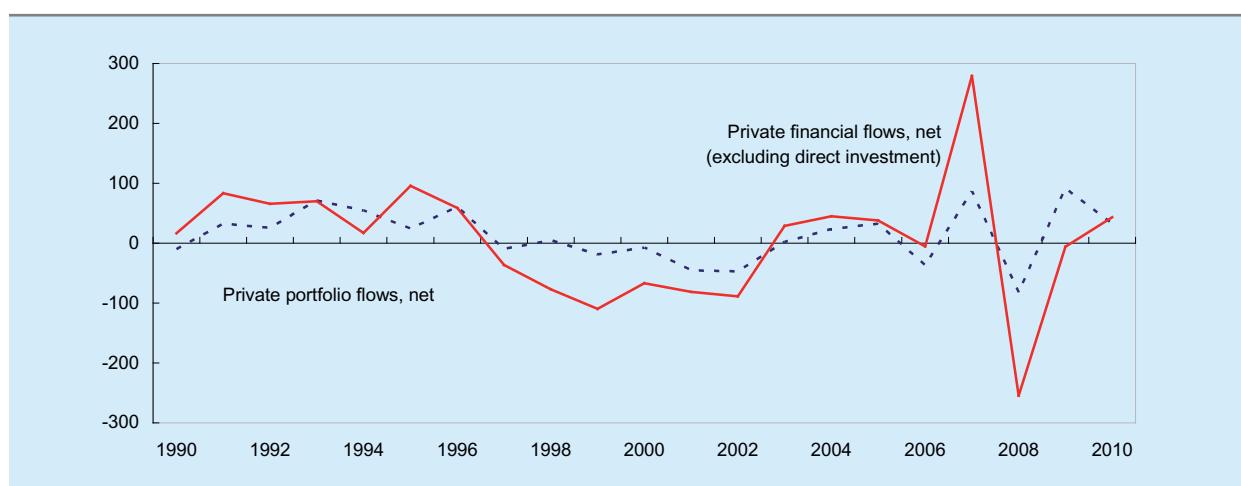
The financial and economic crisis of the past few years has again shown the destabilizing effects for the real economy that are caused by volatile financial markets: short-term speculative capital movements can have grave long-term repercussions for growth and development.

Private capital flows to emerging market economies have picked up again in 2010, after a sharp drop during the financial crisis and the global recession (chart 1). In 2010 net private financial flows (excluding FDI) had a strong comeback, mainly driven by private portfolio flows. The rebound has taken place in most regions, with the exception of the Commonwealth of Independent States and the Middle East and North Africa region. Developing

Asia, Central and Eastern Europe and sub-Saharan Africa have seen “investors” returning nearly at full speed and this has again put increased upward pressure on the exchange rates of their currencies.

Today’s experience of capital flows and currency misalignment has much in common with the “Dutch disease” experience of some commodity exporting countries in the past. In these cases, currency overvaluation resulted from fast increases in commodity export earnings (and, in some cases, related capital inflows) that could not be absorbed quickly by the purchase of imports. As a consequence, the producers of manufactures in the countries concerned lost competitiveness on both domestic and external markets. This caused a setback to the process of

**Chart 1**  
**NET PRIVATE FLOWS, EMERGING AND DEVELOPING ECONOMIES, 1990–2010**  
 (Billions of United States dollars)



**Source:** UNCTAD secretariat calculations, based on IMF, *World Economic Indicator* database.

further industrialization and diversification, increasing their economic vulnerability.

While a multitude of factors is responsible for the movements of short-term capital flows, one

factor clearly stands out in explaining the persistent inflows and the resilience of these flows after shocks – nominal interest rates are persistently high in the countries receiving these flows compared to rates in the countries in whose currencies they are funded.

## II. Short-term capital flows are the new “Dutch disease” – distorting trade and long-term economic development

Today one can speak of a new form of “Dutch disease”, although this time the disease is provoked by the international carry-trade rather than from commodity-exports, as the phrase has been more commonly used. The effects of the disease are just the same, however: distorting exchange rates, and frustrating countries’ efforts to develop their manufacturing industries and to diversify domestic production and exports.

The carry-trade in international financial markets is driven by the attempt of financial market participants to profit from interest rate differentials existing between different countries. These differentials result from divergences in the short-term interest rates set by central banks, mainly reflecting cross-country differences in the rate of inflation. Such carry trade activities – before and after the crisis – involve huge amounts of funds invested by highly leveraged financial institutions like hedge funds and banks. They have become the single most important determinant of cross-border capital flows, but are completely unrelated to the financing of trade or fixed investment in the destination economies.

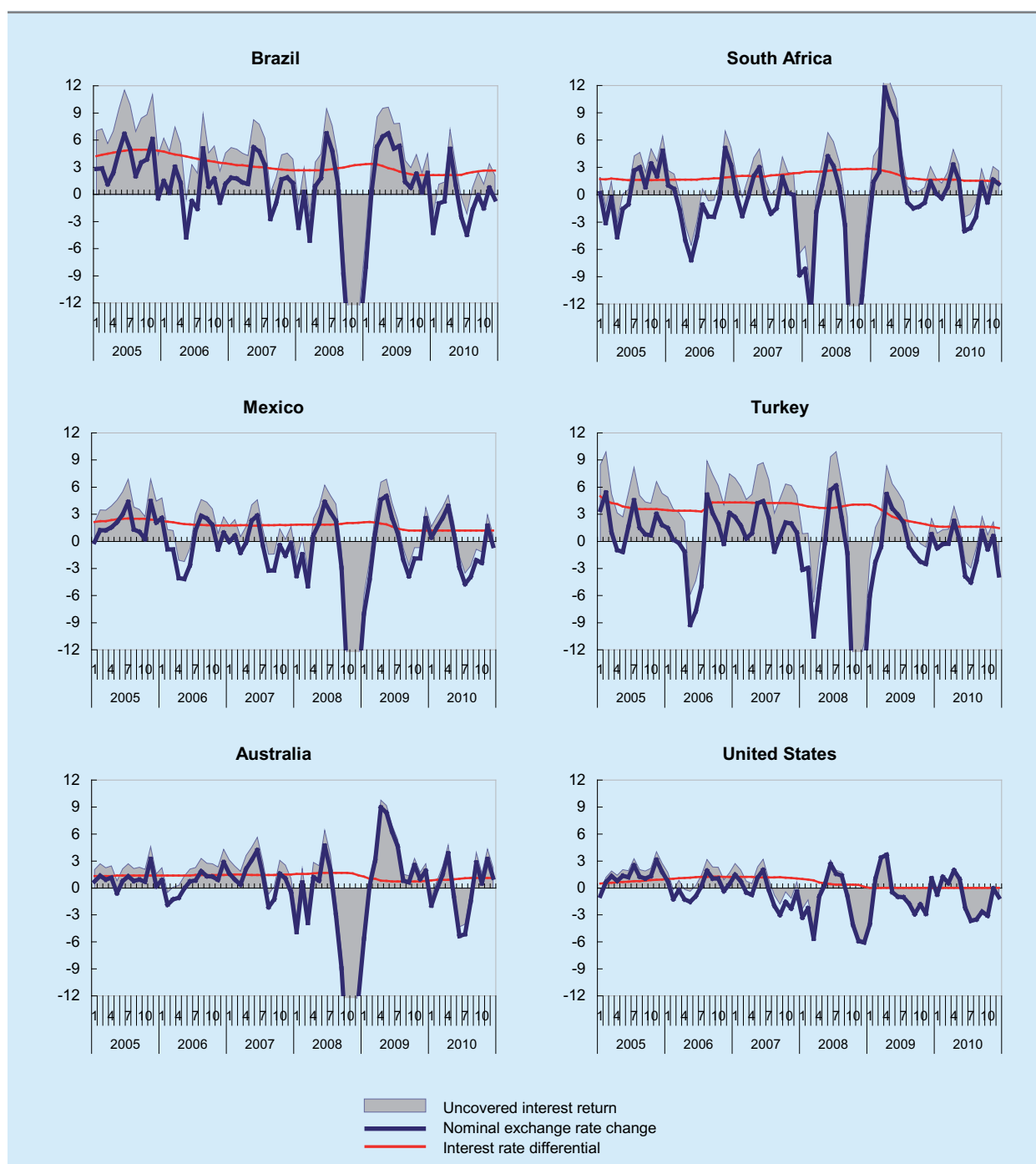
The trade is also self-reinforcing. As carry trade displays the usual pattern of herding behaviour that is characteristic for financial markets, the investment strategy of a single investor is quickly perpetuated as others follow his example. A large movement of flows into a target country – like Iceland before the crisis of 2009, or Brazil and Turkey more recently – leads to an appreciation of the respective country’s currency and a depreciation of the currency of the funding country. This movement reinforces the flows as it increases the profit margin of the investor, who, in addition to interest rate differential, also expects a gain from the appreciation of the target currency.

Chart 2 depicts the critical variables for carry trade for six economies that are members of the G-20. There is a remarkable stability of the interest rate differential despite huge inflows of short-term capital into these countries. This is the result of the central banks power to set and to hold the short-term interest rate at a level which it believes to be necessary to reach its inflation target.

An important aspect of these flows is their resilience. Net capital flows (NCF, private portfolio flows as well as other private flows excluding FDI) following interest rate differentials determine the exchange rate over long periods. For example, between 2005 and 2010 the Brazilian real appreciated most of time except for some short shock periods. Accumulated over five years this led to an appreciation in nominal terms vis-à-vis the Japanese yen of 30 per cent – despite the fact that Brazil had higher inflation rates during the entire period than Japan, in whose currency much of the carry trade activities have been funded. Over the same period Brazil’s real effective exchange rate, i.e. the exchange rate of the real vis-à-vis the currencies of all trading partners of Brazil, adjusted for the inflation differentials, appreciated by 30.7 per cent.

Thus, in an environment where the exchange rate is not determined by fundamentals (the inflation rate or the unit labour cost growth), or expectations of their evolution, it is short-term capital flows that follow interest rate differentials which largely determine the behaviour of the exchange rate in times of low risk. However, market participants are aware of the risk of their strategy, namely that shocks may trigger sudden reversals of flows and the herding effect may amplify the negative impact on their investment. This is why a carry trade strategy is

**Chart 2**  
**CARRY TRADE VIS-À-VIS JAPANESE YEN, SELECTED ECONOMIES, 2005–2010**  
 (Per cent)



**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. Interest rate differential is calculated considering difference between selected currencies and the yen-denominated asset.

considered to be as risky as investment in other asset classes like stocks or commodity derivatives.

The shocks simultaneously hitting this strategy in nearly all target countries are clearly visible for the

emerging market economies (chart 2). The first shock in spring 2006 was triggered by rumours about an interest rate hike in Japan, which would have reduced the profits of investors funding their carry trade in yen. The second shock followed the general spread

of uncertainty in the months before the collapse of Lehman Brothers. When the evidence mounted that several speculative bubbles were simultaneously bursting in late 2008 and early 2009, the biggest of all shocks hit the capital flows to countries perceived as risky, provoking a strong depreciation of their currencies. The most recent appreciation of the yen reflects the reversal of carry trade flows from risky investments in high-interest emerging market economies into liquid yen holdings. The downturn in the Japanese stock market and the yen appreciation both have little to do with fundamentals but are due to the attempt of financial investors to reduce their holdings of risky assets in the face of rising uncertainty.

Consequently, the effective return of such an investment strategy (on a three month basis in chart 3) explains the movements of NCF very well. But an analysis of capital flows also has to consider changes in foreign exchange reserve holdings (see box 1). While NCF clearly is the dominant factor in most cases, the role of the central bank through intervention in the currency markets, as highlighted in shaded areas in the chart 3, should not be underestimated. In many instances the central banks tried to compensate for the influence of inflowing NCF by selling foreign currency reserves and vice versa, although the dimension of the central bank action is usually much smaller than the NCF effect (for the sake of visibility the movements of reserves have been multiplied by the factor 5 in the chart 3). The volatility of the effective return in chart 3 follows very closely the nominal exchange rate, as the interest rate differential is quite stable. The big movements of effective returns and exchange rates occur in tandem in all countries, and they are clearly associated with the external shocks mentioned before.

The policy conclusion from these observations is straightforward: without a strategy to align exchange rates better to the fundamentals of all the countries involved, it is hardly possible to reduce the levels of these speculative and unproductive capital flows or their volatility.

It has been argued that the deeper the capital market of a country the smaller is the risk for it to suffer from destabilizing speculation. The proposition appears to be erroneous, since the deeper the capital market of a country, the easier it is for capital flows driven by carry trade incentives to find attractive short-term and fungible assets beyond bank deposits.

Indeed, in many cases stock market rallies in emerging markets have been used and fuelled by carry traders. Large actors in financial markets often treat all kinds of assets of emerging economies as a single asset class, called “emerging markets”. In all these investment the currency risk is the dominating driver of inflows and outflows, because market participants are aware of the fact that the exchange rate moves against the fundamentals, which will create unsustainable external positions and that will provoke a collapse of this position sooner or later. Thus it is not the prospect of returns from investment in productive firms or enterprises that motivates these flows but the prospect of winning the currency and interest rates game.

Thus, deep capital markets may even fuel the movements of short-term flows and their impact on exchange rates, as has been the case recently for example in Australia and New Zealand. The fact that the largest capital markets have not been affected by this carry trade speculation must be attributed to the fact that the interest differentials, as shown in chart 2, are most the time very low. However, there can be little doubt that a large interest rate differential between the euro and the dollar that persists for a certain period of time would trigger movements of capital big enough to move the dollar up over a rather long period. In the beginning of the 1980, when United States monetary policy tightened under the Reagan administration, such a movement was clearly visible.

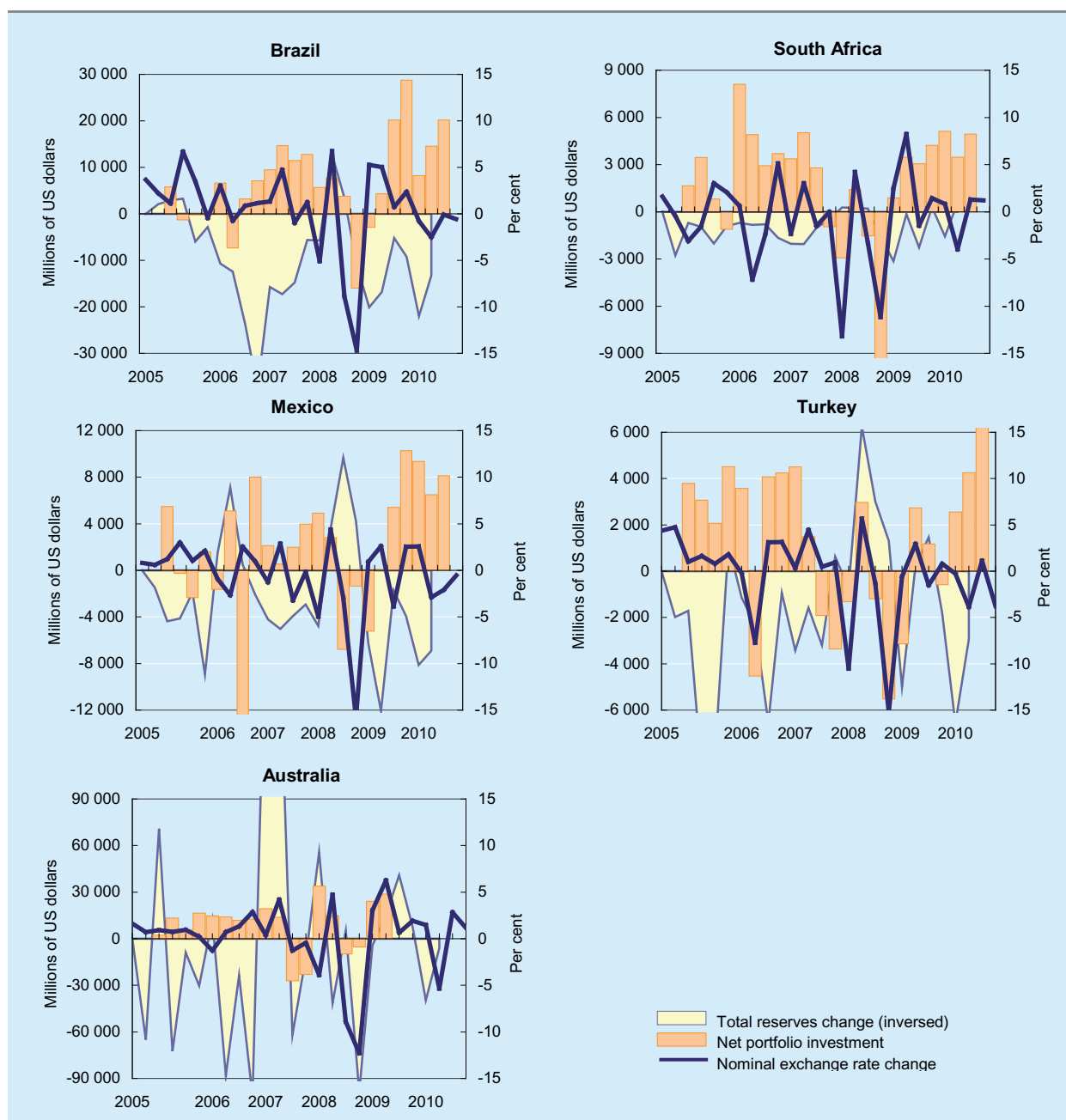
The long-term effects of carry trade on currencies are of enormous significance for the global imbalances. Typically, carry trade investors remain in the target country as long as no shocks are occurring and no defence mechanisms are introduced in the target countries that would significantly reduce carry trade returns (such as the recently introduced tax on capital inflows in Brazil). As long as there is no reversal of carry trade flows the exchange rate of the target country’s currency remains high or continues to appreciate. But even after big shocks the carry trade flows return as soon as the situation has calmed.

The resulting accumulation of positive inflation differentials and appreciation of the nominal exchange rate (that is interrupted only by short-lived shocks over time) causes a rise of the real exchange rate. This appreciation of the real exchange rate has the potential to severely hurt the competitiveness of the target countries’ producers in the markets for goods



Chart 3

## NOMINAL EXCHANGE RATE, INTERNATIONAL RESERVES AND NET PORTFOLIO INVESTMENT, 2005–2010



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

**Note:** Nominal exchange rate change has been calculated with respect to Japanese yen and a positive change in the exchange rate indicates an appreciation of the currency concerned. Total reserves correspond to total reserves minus gold and a negative values on the change in total reserves represents an increase in reserves (capital outflows).

and services on both the domestic and international markets and, thus, to provoke a significant worsening of the current account balance.

In updating an earlier exercise, presented in the *Trade and Development Report 2008* using data up

to 2009, 357 episodes of current-account reversals could be identified (table 1).<sup>1</sup>

All specifications presented in table 1 show that real depreciations (i.e. a negative change in the real effective exchange rate) are associated with a

**Box 1****CAPITAL FLOWS AND FOREIGN EXCHANGE RESERVES**

Chart 3 shows how foreign exchange reserves are used systematically to counter the effects of volatile capital flows. While most observers agree that reserve accumulation can help to smoothen the effects of a sudden outflow of capital and dampen otherwise dramatic currency depreciation, it is often argued that reserve accumulation as a means of self-insurance has high opportunity costs, because the money tied in reserves could be used for other purposes in support of economic development and poverty alleviation. According to the Chairman of the United States Federal Reserve, Ben Bernanke (2005), by accumulating reserves, “governments have acted as financial intermediaries, channelling domestic saving away from local uses and into international capital markets.” Reserves are seen as part of a country’s “savings”, and very high reserves are interpreted as a kind of “surplus savings”. However, the view that reserve holdings have opportunity costs in terms of foregone domestic consumption or investment is questionable.

A build-up of reserves implies an intervention of a country’s central bank in currency markets, through the purchase of foreign currency (especially United States dollars) with its own currency. The domestic currency that the central bank uses for the purchase of dollar reserves does not represent a withdrawal from domestic income. It results from a process of money creation. This is reflected in the central bank’s balance sheet as an addition both on the assets side (foreign bonds) and the liabilities side (currency in circulation). Whether the central bank increases the amount of currency in circulation by acquiring, for instance, domestic government bonds or foreign government bonds has no impact on the amount of domestic consumption or investment. However, it has an impact on the exchange rate of the domestic currency vis-à-vis the dollar, which is what is intended by the intervention, namely to prevent an appreciation of the domestic currency.

Similarly, accumulated reserves cannot be turned into higher domestic consumption or investment by a decision of the central bank. Assume that in order to make reserves “available” for public infrastructure investment, the central bank decides to sell the United States Treasury bonds against its own currency. This will lead to an appreciation of the domestic currency against the dollar, while the domestic currency in circulation falls by an amount equal to that of the reduction in the stock of reserves. This implies the elimination of the money that was created at the time of the initial intervention in the currency market. In other words, whenever the central bank converts foreign currency reserves back into its own currency the money disappears. It is not the selling of reserves that allows additional investment to be financed, but the liquidity provided by the Central Bank to the domestic banking system for the extension of additional credit.

It is worth recalling that a central bank does not function in the same way as a private firm or household. For them, depositing money in a bank account has the opportunity cost of not being used for consumption or investment purposes. Those “reserves”, if reactivated, indeed represent an increase in purchasing power. If invested wisely, the household or firm gains from the activation of its saved “reserves”. Reserves of the central bank are of a completely different nature. As the central bank is able to create money *ex-nihilo*, the activation of reserves (through the bond or currency market) simply amounts to a destruction of currency in circulation: for the overall economy the money just disappears. This is so because the central bank is a unique institution with the monopoly of creating base money (if reserves or other assets are increased) and destroying base money (if reserves or other assets are reduced). On the other hand, if the central bank wants to stimulate investment in general, and is willing to finance public investment directly, it can do so at any time – independently of its level of international reserves.

In any case, an evaluation of the costs and benefits of reserve holdings needs to take into account the fact that the accumulation of foreign exchange reserves not only reduces the risk of a financial crisis, but also influences a country’s exchange rate in a way that increases the international competitiveness of its domestic producers. Overall, big and rising reserves are not just the result of the deliberate decision of some countries to intervene in the currency market for the sake of egoistic national policy targets. They are also the almost necessary concomitant of the existing monetary non-system, a system without any clear rules about exchange rate determination and many forms of determining exchange rates, ranging from free floating to dirty floating, to controlled floating or government adjusted fixing.

**Table 1**  
**DETERMINANTS OF CURRENT-ACCOUNT REVERSALS**

	(1)	(2)	(3)	(4)	(5)
Current-account balance as a share of GDP	-0.00405*** (0.000886)	-0.00388*** (0.000857)	-0.00661* (0.00358)	-0.00704* (0.00370)	-0.00382*** (0.000946)
Change in the real effective exchange rate	-0.0850* (0.0466)	-0.0852* (0.0443)	-0.239* (0.154)	-0.280* (0.175)	-0.0875* (0.0491)
GDP growth	-0.00699*** (0.00263)	-0.00656*** (0.00246)	-0.0204** (0.00965)	-0.0193** (0.00947)	-0.00726*** (0.00280)
Output gap	-1.963*** (0.405)	-1.658*** (0.384)	-0.398 (0.664)	-0.386 (0.721)	-1.967*** (0.434)
Change in terms of trade	-0.0592 (0.0946)	-0.0218 (0.0896)	0.145 (0.254)	0.151 (0.278)	-0.0956 (0.0998)
Credit growth	-0.0435 (0.0576)		-0.105 (0.130)	-0.121 (0.142)	-0.0492 (0.0611)
Inflation	0.00487 (0.0108)	0.00893 (0.00986)	0.0509* (0.0302)	0.0531* (0.0315)	0.00282 (0.0114)
Trade openness	0.0353* (0.0193)	0.0290 (0.0188)	0.0209 (0.0219)	0.0221 (0.0237)	0.0252 (0.0224)
GDP per capita	-0.00288 (0.00885)	-0.00482 (0.00843)	0.0368 (0.0472)	0.0337 (0.0500)	0.0161 (0.0112)
Average GDP growth in the OECD economies	0.00682 (0.00884)	0.000550 (0.00603)	0.00486 (0.00759)	0.00369 (0.00829)	0.0126 (0.0101)
# Observations	1 448	1 559	179	171	1 269
Group of countries	All	All	Developed	Developed excluding Ireland	Developing and transition

**Note:** For definitions of variables and sources, see explanatory note at the end of the annex to chapter III of the *TDR 2008*. Probit estimates with standard errors clustered at the year level. The dependent variable is a dummy that takes a value of 1 in the first two years of the episode and a value of 0 in tranquil periods. Turbulent periods which do not occur in the first two years of the episode are not included in the sample. The explanatory variables are averages over the three years preceding the episode.

\* Significant at 10 per cent.

\*\* Significant at 5 per cent.

\*\*\* Significant at 1 per cent.

higher probability that current-account reversals occur.<sup>2</sup> This result is robust and always significant, even on a smaller sub-sample. In addition, the model regression also shows that a reversal is more likely

to occur when an economy faces a current-account deficit, a lower GDP growth or an actual GDP below its potential (output gap).

### III. Addressing the problem at its source: Constant Real Exchange Rate (CRER) can reduce financial instability and current account imbalances

There is growing awareness that, while flows of greenfield investment that support the process of structural change in developing countries are desirable, speculative capital inflows that are unrelated to the financing of trade and fixed capital formation are not, because they tend to have a negative impact on macroeconomic and financial stability and growth in the receiving economies. In particular, in light of the recent and former experience, it is the sheer quantity of such flows that matters. Thus, a better management of short-term flows is crucial, but the regulatory and institutional framework cannot easily be created at the national level in small and open economies. Strengthened international cooperation in macroeconomic and financial policies, as well as a new framework for exchange rate management, is required to contain speculative capital flows and to reduce their damaging impact on the stability of the world economy.

As proposed by UNCTAD in its *Trade and Development Report 2009*, an international agreement on “constant real exchange rate (CRER) rule” could go a long way in introducing greater stability into the international monetary and financial system, and also make the latter more coherent with the objectives governing the multilateral trading system. The proposed CRER rule goes further than instruments that focus on national or international taxation of capital flows, or the improved provision of international financial support to facing financial or currency crises. The application of the proposed exchange rate rule would remove a major incentive for cross-currency financial speculation and, thus, address the problem at its source. It would thereby prevent the build-up of large imbalances, rather than correcting them after they have emerged.

The Bretton Woods system, and also the European Monetary System that preceded the

introduction of the euro, was based on the idea that the member countries would be able to achieve similar inflation targets and that exchange rate changes beyond the agreed “band” would be required only in exceptional situations when they would be unable to reach the commonly agreed inflation rate. By contrast, the CRER rule explicitly allows differences in the inflation rate across countries. However, in order to prevent these from distorting trade flows, price and cost differentials have to be compensated for by commensurate appreciations or depreciations as soon as they emerge.

In an exchange rate system based on the proposed rule the real exchange rate would be defined as the nominal exchange rate adjusted for inflation differential between countries. To keep real exchange rate constant, nominal exchange rates would strictly follow inflation differentials. With a CRER rule, higher inflation is automatically offset (over a period that has to be defined) by a devaluation of the nominal exchange rate.

A constant real exchange rate helps to achieve several main targets with one measure. It:

- » *Curbs excessive currency speculation of the carry trade type*, because the interest rate differentials triggering it mainly reflect inflation differentials. If the adjustment period is set according to interest rate differentials it can be as short as a day or even less.
- » Prevents unsustainable current account deficits and currency crises by removing the main cause of long-lasting currency overvaluation.
- » *Helps to avoid unsustainable debt* by removing the tendency for countries to move deeper into unsustainable current account deficits. The accumulation of such debt is often based on the erroneous perception that the “confidence”

of financial markets and rating agencies always reflects strength of the real economy.

- » *Removes the need for central banks to accumulate large foreign reserves.* The CRER rule implies symmetric intervention on the part of both central banks issuing currencies that are under pressure to devalue and those issuing currencies that are under pressure to revalue. This reduces the need for central banks to accumulate large foreign exchange reserves in order to be able to defend the currency; reserves would be needed only as a shelter against the short-term impact of a fall in export earnings.
- » *Avoids the need to comply with pro-cyclical policy conditionality in case of crisis,* because

the support needed to ward off speculation against a currency would come automatically from the revaluing of partner currencies, given the systemic intervention obligations.

Needless to say, introducing the CRER rule would call for major political commitments and be fraught with technical difficulties that would have to be hammered out. To get such a scheme off the ground, in-depth analysis would be needed to identify the level at which real exchange rates could be fixed with the least possible friction, and the kind of fundamentals that should be taken into account for adjustments. This is, however, feasible if the political will exists to put international economic relations on a rational basis.

## IV. The rationale for capital controls

For a long time, the idea of capital controls was taboo in mainstream discussions, as market forces were considered the only reliable guide for the allocation of capital. However, in practice many *de facto* forms of exchange rate intervention have always been used. Some rethinking began in the aftermath of the Asian crisis, when the standard policy advice was for a “sequencing” of liberalization of international financial transactions, along with setting up domestic prudential regulatory and supervisory regimes. Moreover, the IMF Articles of Agreement generally provide for the possibility that “members may exercise such controls as are necessary to regulate international capital movements ...”.<sup>3</sup> Experience with the current financial crisis also seems to challenge the conventional wisdom that dismantling all obstacles to cross-border private capital flows is the best recipe for countries to advance their economic development.

When introduced in a period of crisis, capital-account management mainly takes the form of restrictions on capital outflows. On the other hand, when it is conceived as an instrument to prevent the build-up of speculative bubbles and currency misalignment and to preserve domestic macroeconomic policy space, it primarily implies certain restrictions on capital inflows. A rich menu of both price-based

and quantity-based types of instruments can be combined and flexibly handled to match specific local requirements. In principle, barring or limiting certain types of inflows can be achieved by outright bans or minimum-stay requirements, tax-based instruments like mandatory reserve requirements or taxes on foreign loans designed to offset interest rate differentials.<sup>4</sup> In many cases, instruments directly targeting private capital flows may also be appropriately combined with, and complemented by, prudential domestic financial regulations.

It has been suggested that capital-account management could be applied in a counter-cyclical manner by restricting excessive foreign borrowing in good times and controlling capital flight during crises (Rodrik, 2009), although capital flows unrelated to investment and trade are undesirable at all times. In any case, it would certainly be a step forward if surging capital inflows were no longer perceived as a sign of strength of the receiving economy, but as an external shock that can have serious negative repercussions on domestic monetary management and on international trade. The IMF should therefore change its stance and more actively encourage countries to use the possibility of introducing capital controls as provided for in its Articles of Agreement, and advise on how to implement them. Since

introducing flexible management of capital inflows requires certain administrative capabilities, it would also be appropriate for the Bretton Woods institutions to provide advice to policymakers in developing and transition economies, and to help them create and strengthen their administrative capacities so that they could run a capital-account management regime that suits their country-specific requirements.

However, even with sophisticated administrative capacities it is difficult to construct watertight capital controls as long as there are strong and lasting incentives for financial market participants, as in the case of carry trade, to find ways to circumvent the controls. Therefore the proposed CRER appears as the more consequent solution to the problem of destabilizing speculative capital flows.

## Notes

- 1 The table reproduces the analysis of table 3.A1 UNCTAD's *Trade and Development Report (TDR) 2008* (p. 80). The original study considered 268 episodes during the period 1975–2006. One can notice that an impressive number of current-account reversals took place between 2006 and 2009 (adding three years of data increases the sample size by about one third). All the variables are defined as in *TDR 2008* and the results regarding the change in the real effective exchange rate are similar and robust. Some controls are however missing. These are: the United States Federal Funds rate, the index of capital account liberalization, and the index of the exchange rate regime.
- 2 Column 1 includes all countries. Column 2 shows that the result holds when we do not control for credit growth (a variable for which we miss some recent observations). Column 3 only looks at the developed economies and still finds that real depreciations are associated with current-account reversals. The results are somewhat stronger if we drop Ireland from the sample (Column 4), since Ireland sharply reduced its current-account deficit without devaluing in 2009. Finally, column 5 shows that the result also holds if we limit the analysis to the developing and transition economies.
- 3 IMF Articles of Agreement, Article VI, Section 3: Controls of capital transfers.
- 4 Like monetary policy itself, the use of tax-based instruments to offset interest rate differentials becomes complicated if expectations of significant exchange-rate changes come into play.