

**Equilibrium is good:
Comments on Athukorala and Rajapatirana**

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Abstract

This paper explores the ‘problem’ of the impact of capital inflow on the real exchange rate in countries in Asia and Latin America, as discussed by Athukorala and Rajapatirana. It points out some shortcomings in their characterisation of the data, some inconsistencies in the data as presented, an inconsistency in their discussion of government responses to the problem, and what appear to be errors in the interpretation of the empirical results. It suggests some alternative interpretations of those results before going on to recast the problem as one that is driven by precisely the kinds of government responses to capital flows that the authors appear to support. In particular, the tendency of policy makers to hold real exchange rates away from equilibrium in response to continuously changing circumstances is argued to encourage exchange rate speculation, and thus to contribute to the occurrence of balance of payments crises.

Key Words: real exchange rate, capital flows, foreign direct investment, Washington Consensus

JEL Classification: E58, F32, F41, O11, O24

Introduction

This paper discusses a recent paper by Athukorala and Rajapatirana (A&R: 2003), 'Capital Inflows and the Real Exchange Rate: a Comparative Study of Asia and Latin America'. My aims here are as follows. First, to explore the logic of the problem with which the authors are concerned: the impact of capital inflow on the real exchange rate in countries in Asia and Latin America. Second, to point out some shortcomings in their characterisation of the data, and some inconsistencies in the data as presented. Third, to point out an inconsistency in their discussion of government responses to the problem. Fourth, to point out what appear to be errors in the interpretation of the empirical results, and to suggest some alternative interpretations of those results. And finally, to recast the problem as one that is driven by precisely the kinds of government responses to capital flows that the authors appear to support.

A useful place to start is to recall what the Washington Consensus, as described by Williamson (1993), has to say about exchange rate policy:

[C]ountries need... [an] exchange rate set at a level sufficiently competitive to induce rapid growth in non-traditional exports, *and managed so as to assure exporters that this competitiveness will be maintained in the future* (emphasis added).

Williamson went on to assert that 'markets cannot be relied on to take exchange rates to competitive levels that will support prudent macroeconomic policies and export-led growth', and to argue against allowing the exchange rate to float for this reason (*ibid*: 1332-3). This lack of trust in the markets is strangely at odds with most of the other components of the Washington Consensus, which is generally in favour of free markets, competition and avoidance of wasteful public sector spending, and against state enterprises and excessive regulation of the private sector. That is, it advocates a high degree of reliance on markets and the private sector, and displays a deep concern about the potentially damaging economic impact of various government actions. It turns out that A&R also share this lack of trust in markets and the actions of private sector firms in relation to determining the real exchange rate.

What the authors say

The problem of capital flows

A&R begin with a reference to the

‘real exchange rate problem’ [citing Corden 1994]—the possibility that capital inflows bring about an appreciation of the real exchange rate... with an adverse effect on traded-goods production (p. 613).

Mindful of the fact that relative prices such as the real exchange rate are changing all the time in all economies, with adverse effects on the sectors whose relative prices decline, the authors concede that this is a ‘natural (equilibrium) phenomenon’. Now, the problem that they discern is no longer appreciation of the real exchange rate, but the possibility that

capital inflows may well be temporary and hence in due course real depreciation is likely, which may require a painful and politically unpalatable economic adjustment [by implication, an adverse effect on the non-tradables sector] (p. 614).

If we omit the reference to capital flows here, the authors’ concern amounts to this: whenever there is a change in the price of tradables relative to non-tradables, there will be an adverse impact on one or the other of these broad sectors of the economy. Most of the rest of the paper is based on the premise that governments should ameliorate fluctuations in this relative price. In other words, the implicit view underlying the paper is that government policy makers are better able to know what lies behind these fluctuations than firms and individuals in the private sector; therefore it is desirable for the policy makers (with none of their own funds at risk) to protect private sector entities (with their own funds at risk) from their own actions, by modifying the price signals they observe. To talk in such terms implies that disinterested economists in the bureaucracy and academia are better able to judge when exchange rate movements are excessive and temporary than private sector actors, since only this belief can provide a rationale for governments trying to smooth out such fluctuations rather than letting them run their course.

It is revealing to apply this way of thinking to a concrete example. Consider the Australian economy in the several years leading up to the Olympic Games in 2000. An exogenous shock—the selection of Sydney to host these games—created a demand for investment on a large scale in sports facilities and in accommodation

and transportation facilities for visitors. Presumably there was some expansion of foreign capital inflow as a result. Assuming that a large portion of the capital goods required were produced domestically, the implication is that other sectors of the economy would have needed to contract. The inflow of capital would have brought about an appreciation of the real exchange rate, which would have had the desired effect of making productive resources available by contracting other sectors. When this burst of investment was complete and the games were over, the capital inflow presumably was reversed as loans began to be repaid, resulting in a depreciation of the real exchange rate, which drove productive resources back to where they came from initially. The authors' approach suggests that all of this would have amounted to a set of adverse impacts on the economy due to the rise and subsequent decline of capital inflow. The fact is that through this process Sydney gained a significantly expanded and modernised stock of sports, tourism and transportation facilities.

Government responses to capital inflow

Let us turn now from the perceived problem to the suggested solutions. Working in the context of a fixed but adjustable nominal exchange rate, three methods by which governments can attempt to prevent appreciation of the real exchange rate as a result of capital inflow are suggested. First, they can use what the authors refer to as 'fiscal contraction' (p.627), but which actually turns out to mean cutting government expenditure and allowing a corresponding increase in private sector expenditure; provided that private sector spending has a larger tradables component (as the authors contend), this will move the current account in the opposite direction to the capital account, thus offsetting the impact of capital inflow on the real exchange rate. (If the change in fiscal policy were truly contractionary, both the government and the private sector would spend less on tradables, so the balance of payments would tend even more strongly to surplus, and the real exchange rate would be even more likely to appreciate.)

Second, they can sterilise the monetary impact of capital inflow, thus holding domestic prices more or less constant. If we define the real exchange rate as

$$RER = e.P_t/P_n, \quad (1)$$

where P_t denotes world prices of tradables, holding both the nominal exchange rate (e) and domestic prices of non-tradables (P_n) constant ensures that the real exchange rate does not change.

According to the authors, the third possible response of governments to capital inflow, in order 'to cushion the real exchange rate against pressure of appreciation' (p. 626), is 'nominal exchange rate adjustment' to correct 'disequilibria in the fixed (but adjustable) nominal rate' (p. 628). In fact, as equation (1) shows, adjustment of the nominal exchange rate in response to capital inflow results in an *immediate appreciation* of the real exchange rate, not prevention of it.

Levels or changes in flows?

Capital inflow does not cause appreciation. An *increase* in capital inflow does so, as does a reduction in capital outflow, *ceteris paribus*. Since the authors' concern is with changes in the relative price of tradables to non-tradables, and since this will occur, whenever there is a *change* in the level of capital flow, it follows that the focus of attention should be precisely that, not with the *level* of capital inflow. Once capital flow is at a particular level there will be no further change in the real exchange rate as a result of its continuation. Moreover, if capital inflow falls, or becomes more negative, there will be a resulting change in the real exchange rate that, on the authors' introductory arguments, would also constitute a problem. It would seem more appropriate, therefore, if the title of their paper referred to capital *flows*, rather than capital *inflows*.

The distinction between inflows and changes in flows is a source of some confusion in the authors' simple preliminary analysis of the impact of 'capital inflow episodes' on the real exchange rate (pp. 620–24), in which the methodology for determining the start and end points for these episodes seems largely arbitrary. On the above argument the start of an episode should be marked by a switch in the trend of the absolute level of capital flow from negative or stable to positive, regardless of whether the flow itself is positive or negative. Likewise, the end of an episode should be marked by a switch in this trend from positive to stable or negative, regardless of the level.

I compare periods of increasing capital inflows with the authors' 'capital inflow episodes' in table 1. It can be seen that the starting and ending points for such periods in each country bear only passing resemblance to the start and end points determined by the authors and depicted in their figure 2. For example, Brazil's capital inflow episode is said to begin in 1992, but there is a clear increase in the level of capital inflow in 1990, even though it remains negative at that time; it so happens that the real exchange rate depreciates rather than appreciating during these first two years of increasing capital inflow. Nor is it clear why the authors consider this

episode to have ended in 1996, rather than 1995, when capital inflow began to fall. The econometric work does not suffer from this particular defect, however: the real exchange rate in the estimation model responds to changes in capital flows, not to their levels.

Table 1 Comparison of episodes of capital inflow and *increased* capital inflow

	Capital Inflow Episode	Increased Capital Inflow Episodes
<i>Asia</i>		
China	1993-96	1993-94
India	1991-94	1992-94
Indonesia	1990-96	1990, 1994-96
Korea	1990-96	1988-1991, 1994-96
Malaysia	1989-96	1989-93
Philippines	1989-96	1987-1994, 1995, 2000
Singapore	1987-92	1987-90, 1995-96, 1999-2000
Thailand	1987-95	1987-91, 1995
<i>Latin America</i>		
Argentina	1990-93	1990-93
Brazil	1992-96	1990-1995
Chile	1989-97	1987-1990
Colombia	1992-96	1992-93, 1996
Mexico	1989-93	1989-91, 1996-97
Peru	1992-97	1986-1994

What the data say, and what they don't

Setting these concerns to one side, the authors' discussion of the data and of their empirical results seems misleading or inaccurate in several instances. First, they observe that 'some of the Asian countries experienced much larger capital inflows compared to their Latin American counterparts' (p. 619). Second, they assert that '[t]he Asian countries as a group received [a] relatively higher share of inflows in the form of FDI' (p. 619). While the first statement is true for some countries in some years, in fact it is very difficult to make any robust generalisation about differences between these two regions. The second statement, on the other hand, appears simply to be incorrect.

In tables 2 and 3 below I have reworked some of the data from the authors' table 1 in order to be able to make comparisons more readily. In table 2 I have calculated the annual average level of capital flow as a percentage of GDP for periods in which this flow was generally positive for the respective regions. For Asia, this period is taken to be 1985 through 1996. For Latin America, it is taken to be 1990 through 1997, since flows were negative on average in the last half of the 1980s, and generally positive in 1997 (in contrast to Asia). Countries are ranked in decreasing order of capital inflow during these periods. On this basis it can be seen that the simple averages are almost the same: 3.3% for Asia and slightly *higher*, 3.5%, for Latin America. Moreover, there is a wide range of variation in the figures within each region, which seems far more significant than the almost negligible difference in the averages between them.

Table 2 Average annual capital inflow as % of GDP

<i>Asia</i>	<i>Latin America</i>	<i>Asia 1985-96</i>	<i>Lat. Amer. 1990-97</i>
Thailand		8.0	
	Brazil		7.4
	Chile		7.4
Malaysia		6.1	
Philippines		4.8	
	Peru		4.2
	Colombia		3.3
Indonesia		3.2	
	Argentina		2.7
India		2.2	
China		1.6	
Korea		0.2	
Singapore		0.1	
	Mexico		-3.9
Average		3.3	3.5

Turning now to the question of the share of FDI in total inflows, the first problem is that there are unexplained discrepancies in the authors' table 1. Presumably, the total figure for net capital inflow should be the sum of the three components (FDI, portfolio investment, and bank loans and other). Unfortunately this is not the case, so we do not know which of the figures are incorrect, or whether there are other

components of capital flows that have not been reported in the table. Assuming that both the FDI figure and the total capital flow figure are correct for each country, however, and omitting Singapore and Mexico from the respective regional averages (the Singapore figure distorts the average for Asia because the denominator term is very close to zero, while the Mexico figure distorts the average for Latin America because the total capital flow is negative), we can see in table 3 that in fact the average share of FDI in total capital flow for Asia (27%) is much *less* than that for Latin America (147%).

Table 3 Average FDI as % of average capital inflow

<i>Asia</i>	<i>Latin America</i>	<i>Asia 1985-96</i>	<i>Lat. Amer. 1990-97</i>
Singapore		7942	
	Peru		325
	Argentina		130
China		127	
	Brazil		110
	Chile		110
Malaysia		78	
	Colombia		59
Indonesia		32	
Philippines		26	
Thailand		16	
India		7	
	Mexico		-69
Korea		-92	
Average Asia		1017	
Average Asia excluding Singapore		27	
Average Latin America			111
Average Latin America excluding Mexico			147

There are problems also with the authors' method of computing the real exchange rate. The real exchange rate is correctly defined as the relative price of traded to non-traded goods. The authors then argue (p. 634) that:

In the absence of readily available indices of tradable and non-tradable prices, the real exchange rate has to be proxied by available domestic and world price indices and nominal exchange rates... [A]ll commonly used measures compute the ratio:

$$\text{RER} = [\text{NER}]P^{\text{W}}/P^{\text{D}}$$

where NER denotes the nominal exchange rate ..., P^{W} is an index of foreign prices and P^{D} is an index of domestic prices.

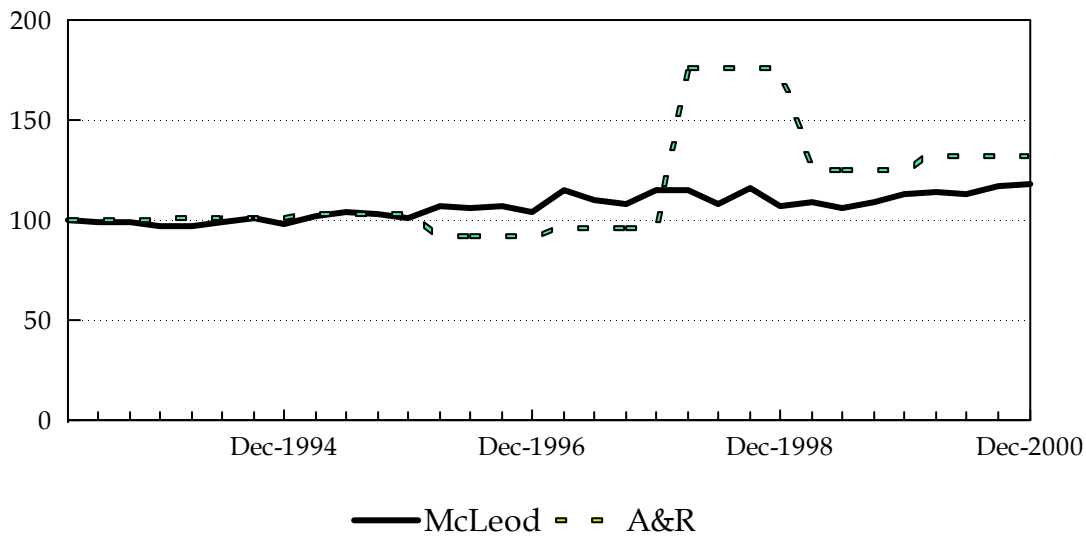
Their preferred proxy measure uses foreign producer (wholesale) prices for P^{W} and the domestic GDP deflator for P^{D} . Country weights for the construction of the NER and P^{W} series are based on export shares. The numerical series thus calculated are not reported explicitly, but are graphed in figure 2.

It is not clear that the authors' preferred working definition of the real exchange rate is the best available. Our interest in the real exchange rate is with its influence over the allocation of productive resources in the economy—specifically, the allocation between tradables and non-tradables production. In other words, we are interested in the structure of prices that face producers *within the economy we are focusing on*. Contrary to the authors' assertion that there is a lack of suitable indices of tradables and non-tradables prices, a set of such indices can be found in the national income accounts, provided we are willing to make some judgments about which sectors of the economy produce tradables, and which produce non-tradables. By way of example I have undertaken such an exercise for Indonesia for the period 1993 through 2002, for which consistent current price and constant price data are available for nine sectors of the economy. I assume that three sectors produce tradables (agriculture, forestry and fisheries; mining and quarrying; and manufacturing), while the remaining six produce non-tradables.

Using this breakdown, I compute the implicit price deflators for each of these sectors for each year. I take the individual sector shares in 1995 as the weights applied to each sector (based on annual, rather than quarterly, GDP in order to remove seasonality).¹ The real exchange rate is then calculated as the ratio of the tradables deflator index to the non-tradables deflator index and shown in figure 1, together with the A&R measures (converted to the same base year).

¹ The total share of tradables in GDP is roughly constant at 50% for all of the years prior to the crisis.

Figure 1 Indonesia: Alternative Measures of Real Exchange Rate
 March 1993 = 100



It can be seen that the real exchange rate calculated on this basis was roughly constant for the first two years of this period, and then *depreciated* significantly in the two years prior to commencement of the crisis, continuing its trend rate of depreciation through until the end of 1997. Beyond this there were fluctuations, but there was no clear trend. The series calculated by A&R show significant differences from this series, with significant *appreciation* in the two years prior to the crisis.

What the empirical results say, what they don't, and what they might

The authors' preferred equation (2) from their empirical results is shown here in table 4. The way they specify their model allows different coefficients to be calculated for Asian and Latin American countries. As I understand this econometric technique, the coefficients on the variables without the Latin American dummy apply to Asia—not to the entire country sample as the authors apparently believe. For ease of exposition I have shown the coefficients for Latin America alongside, by adding the Asia coefficients to the corresponding Latin American dummy coefficients. The authors say that a 1 percent increase in other capital flows (OCFW) brings about a 0.56 percent appreciation in the real exchange rate '[f]or all countries' (p. 631). In fact, this is the elasticity for Asia. The corresponding figure for Latin America is 1.70 percent. On the other hand, the two elasticities for FDI are +0.29 and -0.23, respectively. According to the authors, however, the FDI elasticity for Latin

America is +0.06, while that for 'all countries' (actually, for Asia) is -0.56 (stated as +0.56 in the text). It is not apparent how they arrived at these numbers, which seem unrelated to those presented in their table 3.

Table 4 A&R Preferred estimated model

Variable	Asia coefficients and LA dummy coefficients		Latin America coefficients
	Parameter	(t-ratio)	
Constant	+4.71	(56.22)***	
Foreign direct investment (<i>FDI</i>)	+0.29	(3.35)***	-0.23
Capital inflow excluding FDI (<i>OCFW</i>)	-0.56	(2.60)**	-1.70
Government expenditure (<i>GEXP</i>)	-3.17	(5.53)***	
Change in nominal exchange rate (<i>DNER</i>)	+0.50	(2.48)**	0.05
Openness (<i>OPEN</i>)	+0.15	(2.62)**	-0.03
Slope dummy variables for Latin America			
<i>LA*FDI</i>	-0.52	(3.35)***	
<i>LA*OCFW</i>	-1.14	(2.95)***	
<i>LA*DNER</i>	-0.45	(2.18)**	
<i>LA*OPEN</i>	-0.18	(2.49)**	

These results lead the authors to infer that

‘the real exchange rate problem’ is a phenomenon specifically associated with ‘other’ capital flows.... [and that] these flows have a greater dampening effect on the real exchange rate than in Latin America compared to that in Asia.

The implication appears to be that FDI is more beneficial (or less harmful) than other capital inflows to recipient countries. Such a comparison seems akin to arguing that a baseball team is better off with batters rather than pitchers; in fact, both have their place. A simple, plausible explanation for FDI to be associated with depreciation or relatively less appreciation is as follows. Suppose that non-FDI capital flows go mainly to domestic firms, and that these firms’ investment relies mainly on domestically produced capital goods, while foreign firms’ investment contains a

much larger import component.² In the special case that the entire amount of FDI is spent on imported capital goods, there will be no net FDI impact on the real exchange rate. And if the amount of spending on imported capital goods *exceeds* the amount of FDI (which is possible if the project in question is partly debt-financed), the apparent impact of FDI would be to ‘cause’ a depreciation, rather than an appreciation, of the real exchange rate. The elasticities observed by the authors may thus have a very simple explanation—and one that does not have the implication that one form of capital inflow is preferable to another. Each has its place in the economy.

Since the assumption is that all forms of capital inflow will result in real exchange rate appreciation, *ceteris paribus*, the positive coefficient for FDI in Asia (implying depreciation) needs to be explained. My tentative explanation has just been given. The authors suggest, however, that ‘FDI-related activities in Latin America have a greater non-tradable bias’ (p. 632). This is not a particularly convincing explanation, however. There are no lags in the model, and it is difficult to believe that FDI undertaken in a given year will generate much output in the same year. What seems more important, therefore, is the question of whether the FDI projects in question encompass a large amount of imported investment goods. As the authors say, this ‘is an interesting issue which requires further investigation’ (p. 632).

We turn now to the other explanatory variables. First, government expenditure (GEXP) is found to have the predicted negative relationship with the real exchange rate. The authors interpret this as providing support for

the theoretical proposition that fiscal contraction is a powerful cushion for all countries against real exchange rate appreciation associated with capital inflows (p. 632).

As suggested above, fiscal contraction would in fact *strengthen* the tendency to appreciation; it was the desire to prevent further depreciation that led the IMF to call for fiscal contraction in countries such as Indonesia and Thailand in the early months of the Asian crisis. An alternative explanation is that changes in government expenditure have been roughly matched by opposite changes in private sector expenditure, given that the latter has a larger tradables component (p. 627). Thus,

² For example, a large component of the investment in a power plant might require the importation of generation equipment.

when government expenditure falls, aggregate spending on tradables increases, causing depreciation of the real exchange rate, *ceteris paribus*.

Second, the nominal exchange rate (DNER) is also found to have the predicted relationship with the real exchange rate. In Asia, the elasticity is +0.5 (again, the authors seem to regard this as the elasticity for all countries combined), but for Latin America it is only +0.05. The authors state that these results

are consistent with the view that the Asian countries have been more successful in averting real exchange rate appreciation through nominal exchange rate adjustment, compared to the Latin American countries (p. 633).

As pointed out above, however, the purpose of adjusting the nominal exchange rate is not to *avert* real exchange rate appreciation but to *facilitate* it. The results are in fact consistent with the view that the Asian countries on average have been more likely to respond to balance of payments disequilibria by adjusting the nominal rate than the Latin American countries, which have relied more on policies that influence domestic prices (the denominator in equation 1).

To put it another way, the result is consistent with the Latin Americans having a weaker tendency to sterilise the monetary impact of balance of payments disequilibria than the Asians. According to this argument, when the former experience a payments surplus, for example, their central banks accumulate foreign reserves and increase the supply of base money correspondingly. This causes domestic prices to rise, thus bringing about the necessary appreciation of the real exchange rate in order to get back to equilibrium. By contrast, the Asian central banks would rely more on adjusting the nominal exchange rate in order to get the real exchange rate back to equilibrium, which would imply little if any impact on the supply of base money and domestic prices.

The remaining variable with significant explanatory power is openness of the economy (OPEN). The stated rationale for introducing this variable is that previous studies have found it to be a significant explainer of the real exchange rate. A&R do not mention whether this relationship is found to be positive or negative in these previous studies, but they assume it to be positive in their estimating equation: i.e. that greater openness will result in depreciation. Although their results support this hypothesis for the Asian countries, the relationship is found to be negative for Latin America. We are left to wonder why; the authors offer no discussion of these results.

Perhaps it has something to do with the choice of the indicator of openness. The authors rely on a binary variable listed for each country in Sachs and Warner (1995). In this listing, countries are either open or closed. It turns out that only two of the eight Asian countries changed their status during the period in question, while five of the six Latin American countries did so. Intuitively, then, it seems unlikely that the results for Asia actually mean much, given that only two observations of the openness variable out of a total of 128 actually showed movement from the previous year. Nevertheless, the authors say that they obtain very similar results using a number of continuous variable measures of openness (p. 628).

One of the authors' overall conclusions is that the Asian countries

have managed to cope far better with the real exchange rate problem associated with capital flows compared to their Latin American counterparts. The degree of real exchange rate appreciation associated with capital inflows was uniformly much lower in the Asian countries... (p 633).

Given that four of the Asian countries in the sample experienced severe recessions in 1998 as a result of sudden capital outflow, it is difficult to imagine how the authors could arrive at such a conclusion. It was precisely this capital flow reversal problem that the authors focused on at the outset as their principal concern.

I note again that the relationship actually studied is not that between real exchange rate appreciation and capital inflows, but real exchange rate changes and capital flow *changes*. More important, however, is the fact that the authors regard real exchange rate appreciation as inherently undesirable. Recall the definition of the real exchange rate in equation (1) above, in which the choice of price indices is somewhat arbitrary, as the authors point out. One domestic price index that is fairly clearly a good indicator of non-tradables prices is an index of market wages, since labour services (haircuts, for example) come very close to meeting the definition of a non-tradable. Such an index is also one of the most fundamental indicators of successful development, since it reflects increases in incomes of the poor. If the real exchange rate is defined using an index of market wages in the denominator, and if it is observed to fall, this suggests that developing countries should be pleased rather than disappointed. And indeed, the more rapid expansion of the capital stock made possible by capital inflow would be expected to raise the marginal product of labour, and thus wages.

Implications for understanding balance of payments crises

Although unintentionally, the authors have provided a very important insight into the causes of balance of payments crises, including those that have stricken several of the Asian and Latin American countries in recent years. This insight is the observation that governments in many of these countries have taken it upon themselves to try to prevent markets from bringing about the real exchange rate adjustments that are necessary in order to move to a new equilibrium each time there is some exogenous disturbance to the previous one. In other words, they have not been content to allow markets and prices to perform their essential function of driving continuous structural adjustment in response to continuously changing conditions, but have tried to fix prices themselves, using the policy instruments at their disposal. This policy approach is clearly injurious to stability.

The point can be illustrated by reference to the policy of sterilising the monetary impact of balance of payments disequilibria. We start from a position of overall equilibrium, and then introduce some shock to the balance of payments. (This *may* be a change in the level of capital flow, but it does not need to take this form.) For concreteness, suppose there is an increase in the level of capital inflow to Indonesia. The immediate manifestation is the emergence of a balance of payments surplus. Suppose further, as the authors do, that the authorities are committed to both a fairly fixed nominal exchange rate and a fairly stable level of domestic prices (and thus a fairly fixed real exchange rate). Their reluctance to change the nominal rate will require them to purchase the excess supply of foreign exchange coming on the market. But doing so will increase the supply of base money, which will tend to increase domestic prices. To avoid this outcome it will be necessary to issue central bank or government securities, purchases of which by the private sector in sufficient quantity will return the supply of base money to where it had been previously. This is precisely the kind of policy stance adopted by the Indonesian authorities in the early 1990s (McLeod 1993: 23–6)

The problem with this is that the authorities are *holding the economy away from equilibrium*. Since the money supply and the nominal exchange rate are being held constant, the incentive to borrow offshore remains. This incentive is reflected in the difference between domestic interest rates and world interest rates after adjustment for the expected rate of depreciation of the local currency. (The authors argue [p. 627–28] that sterilisation will result in an increase in domestic interest rates, but given that one-to-one sterilisation simply keeps the supply of base money constant

there is no obvious reason why domestic interest rates should increase.) It follows that the central bank will continue to purchase foreign exchange indefinitely, and will continue to issue more and more of its own securities. In other words, it will go increasingly long in dollars, and *the private sector (including foreign entities) will go increasingly long in rupiahs*. From this we can draw the important conclusion that the increasingly large exposure of the private sector (domestic and foreign) to foreign exchange rate risk prior to Indonesia's crisis in 1997 reflects, in considerable part, the policies of the central bank and the government, which deliberately sought to avoid appreciation of the real exchange rate for precisely the reasons the authors suggest. In keeping with the Washington Consensus, they wanted to avoid the adverse impact on the tradables sector.

Now let us deal with the opposite case, in which there is a decline in the level of capital inflow, such as that experienced by Thailand in 1996–97. Again we suppose that the government is committed to keeping both the nominal exchange rate and domestic prices roughly constant. Keeping the nominal rate constant will require the central bank to sell down its international reserves, and this will tend to reduce the supply of base money correspondingly, putting downward pressure on domestic prices. This in turn would imply a depreciation of the real exchange rate. The central bank could avoid deflation by sterilising the monetary impact of the sale of its international reserves. It would need to buy back its own or the government's securities, or to purchase securities from, or lend to, the private sector. In this way, the immediate objective of keeping the nominal exchange rate and the level of prices roughly constant is achieved, but *the economy is held away from equilibrium*. The central bank's reserves become progressively smaller, and eventually it will be forced to act—either by depreciating the nominal exchange rate, or bringing on a recession by allowing the money supply to fall. In this case, also, government policy precipitates a balance of payments crisis by trying to hold relative prices away from their equilibrium values.

In the early 1990s Thailand, like Indonesia, had also sought to avoid real exchange rate appreciation when the economy was booming and capital was flooding in from the rest of the world. This encouraged the private sector to take on increasingly large unhedged positions. It is interesting to note that, even if the private sector had used its foreign borrowings to invest in tradables production, rather than speculating in real estate, this same outcome would have ensued. When the production of tradables made possible by such investment commenced the balance of payments would have moved even more strongly into surplus. Reserves would have continued to rise,

implying that the private sector would have gone increasingly long in baht (if the central bank chose to sterilise the monetary impact). In the absence of doubts about falling returns because of the glut of office space and so on (which we have assumed away by supposing new investment was all in tradables), capital would have continued to flow in, accelerating the movement towards heavy exposure to exchange rate risk. Some rethinking of the frequent assertion that Thailand's crisis was precipitated by the private sector's foolish over-investment in the non-tradables sector would appear to be in order. This happened for a reason: namely, the Thai government's deliberate choice to override the market in setting the real exchange rate.

Hong Kong's crisis of 1997-98 can also be fitted neatly into this engineered disequilibrium framework. Hong Kong's case has been largely forgotten because the Hong Kong Monetary Authority—which bears some resemblance to a currency board—was able to maintain its rigid peg to the US dollar throughout the crisis. Its ability to do so has been attributed to the foresight of the HKMA in building up enormous foreign exchange reserves that proved large enough to scare currency speculators away.

It should be noted, however, that the HKMA is not an orthodox currency board (Hanke 2003: 213). If it was, it would not have accumulated such huge reserves, given that currency boards only need to maintain reserves about equal to the supply of base money: Hong Kong's reserves were almost four times the level of base money when the crisis struck. The fact that the HKMA's reserves had become so much larger than the supply of base money reflects the fact that the authorities previously were undertaking sterilisation of the balance of payments surpluses, which is *not* what an orthodox currency board would have done.³ When the Asian crisis hit there was a sudden move by investors to reduce their exchange rate risk exposure and, although this did not result in any change of the nominal peg to the dollar, it certainly did cause a depreciation of the real exchange rate by way of a decline of domestic non-tradables prices; domestic asset prices fell precipitately. During the period June 1997 through August 1998, Hong Kong's stock price index and its property sector sub-index fell by 53 percent and 71 percent, respectively,

³ Hanke (2003: 214) notes that the HKMA has been the recipient of Hong Kong government surpluses for some time. The purchases of foreign exchange by HKMA, financed by the deposit of budgetary surpluses, is equivalent to sterilisation of balance of payments surpluses.

residential and retail premises values by about 40 percent, and office premises by 49 percent. The impact in the real sector was that quarterly GDP fell by 6 percent in the year to the December quarter 1998, reflecting declines of 20 percent in consumption and 19 percent in investment spending. Hong Kong's recession was considerably more severe than that in the Philippines, making Hong Kong one of the four worst hit Asian economies.

Lessons for a better understanding balance of payments crises

Readers familiar with the Indonesian, Thailand and Hong Kong crises will recognise the discussion above as a reasonably accurate qualitative description of the early months of those crises. The basic lesson is that if governments want to usurp or override the markets' function of determining relative prices, they should be careful that in doing so they do not encourage speculative activity by the private sector. This is exactly what they do if they try to prevent the economy from moving to its equilibrium position. Private sector entities will compare current relative prices with those that they think would rule in equilibrium, and begin to arbitrage the difference—that is, to speculate by buying assets and securities now in the expectation that they will be able to sell them in the future at higher prices. In the absence of capital controls, governments are most unlikely to win these speculative games against the multitude of large-scale, relatively sophisticated investors that inhabit the world financial markets.

Before ending this discussion it is worth re-emphasising that the kinds of policies suggested by A&R here are broadly consistent with those of the Washington Consensus in relation to the balance of payments: that is, that markets cannot be relied upon to set the 'right' exchange rate. Williamson (1993) also failed to address the practical policy issue of what happens next when governments engineer a set of relative prices different from the underlying market equilibrium values ('right' or 'wrong'). There is no doubt that governments can do this on a temporary basis but, as we have just seen, by doing so they create strong incentives for arbitrage/speculation, and they are very likely to transform the relatively straightforward, continuous process of structural adjustment in response to changing external circumstances into a balance of payments crisis at some time in the future when reality catches up with them. The deliberate pursuit of disequilibrium is counterproductive. Equilibrium is good.

Conclusions

This paper has taken issue with a number of aspects of the recent paper by Athukorala and Rajapatirana. It has argued that the authors are really concerned with the impact of *increases* in capital inflow, whereas much of their discussion focuses on *episodes* of capital inflow. The important distinction is that it is only increases in capital inflow that lead to appreciation of the real exchange rate, which is the problem of concern. The paper notes that the authors' characterisation of the data on capital inflow, which suggests that the Asian countries have had higher levels of inflow, with higher shares in the form of FDI, is misleading. In fact, the levels of capital inflow have been quite similar across the regions (and quite varied within them), while the share of FDI in capital inflow has been noticeably higher in Latin America. Attention has been drawn to the importance of the somewhat arbitrary decision as to how to measure the real exchange rate and, in the case of Indonesia, it has been shown that whether the real exchange rate is judged to have appreciated or depreciated prior to the 1997 crisis depends on this decision. The paper also points out that the authors have wrongly characterised changes in the nominal exchange rate as government attempts to *avoid the impact* of changes in capital flows on the real exchange rate; in fact, changing the nominal exchange rate is the most direct way of *adjusting* the real exchange rate to these changes.

The paper has also pointed out a number of problems with the authors' interpretation of their empirical results. Coefficients for the Asian group of countries have been wrongly interpreted as coefficients for the entire sample. Some numbers reported in the text differ from those that appear in the table that summarises the econometrics exercise.

Alternative explanations have been offered for various of the authors' findings. It is suggested that FDI might cause real exchange rate depreciation rather than appreciation if the capital goods involved are largely imported, and if part of the investment is debt financed. It has also been suggested that reductions in government expenditure lead to depreciation if it is accompanied by extra private sector expenditure, since the latter has a larger tradables component. (On the other hand, genuinely contractionary fiscal policy would be expected to lead to *appreciation*, contrary to the authors' assertion.) The finding that changes in the nominal exchange rate are accompanied by larger changes in the real exchange rate in Asia than in Latin America is tentatively explained by a stronger preference of governments in the former region to respond to balance of payments disequilibria by

nominal exchange rate adjustment rather than by policies that influence domestic prices.

The paper concludes by drawing attention to the pernicious effects of government policies that try to hold the economy away from balance of payments equilibrium by attempting simultaneously to control both the nominal exchange rate and the level of non-tradables prices. This policy encourages private sector entities to engage in speculation against the monetary authorities, and thus increases the likelihood of balance of payments crises. Concrete examples are given for the cases of Thailand, Indonesia and Hong Kong. Finally, it is noted that the policies that the authors appear to support in response to increases in capital inflow are consistent with those of the Washington Consensus. These policies have as their rationale the belief that the private sector cannot be relied upon to get the exchange rate right. This appears to be strongly at odds with most of the rest of the Washington Consensus, which, broadly speaking, is generally favours the operation of free markets.

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