

Part III

Exchange Rate Policies in Developing Countries

Exchange Rate Policy in Latin America: The Costs of the Conventional Wisdom

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1 Introduction

Perhaps the most authoritative expression of the conventional wisdom on exchange rate policy is Stan Fischer's Distinguished Lecture on Economics in Government delivered to the Annual Meetings of the American Economic Association in January 2001 (Fischer, 2001). He asks, "Is the Bipolar View [on exchange rate regimes] Correct?" and qualifies his sympathy for an affirmative answer quite heavily. He acknowledges, for example, that the full gamut of exchange rate arrangements is available to countries not open to international capital flows; but this applies to a pretty limited number of countries, certainly in Latin America. More interestingly, he argues that countries open to capital movements have available "a variety of crawling bands with wide ranges", and also less formal arrangements (than currency boards) that have been demonstrated to be very hard, e.g. the pre-euro DM pegs of Austria and the Netherlands. What are excluded are "systems for countries open to international capital flows, in which the government is viewed as being committed to defending a particular value of the exchange rate, or a narrow range of rates, but has not made the institutional commitments that both constrain and enable monetary policy to be devoted to the sole goal of defending the parity. In essence, the excluded arrangements are fixed, adjustable peg, and narrow band exchange rate systems."¹

Despite these qualifications, when it comes to presenting empirical results he groups all intermediate regimes together, the adjustable peg that he has condemned as crisis-prone along with the BBC (basket, band, and

¹ He argues that the reason these regimes have to be excluded is that "soft peg systems have not proved viable over any lengthy period" (p. 7). This is exactly the same argument that I made in Williamson (2000), so I was surprised to find that he cites my piece to accuse me of asserting that abandonment of these regimes is all because of pressure from the IMF and the US Treasury. It is true that I complained that those institutions have pressed countries to adopt one or other of the polar solutions, but I was complaining that they did not give a fair hearing to "crawling bands with wide ranges", a regime that on p. 3 Fischer explicitly includes among those that are available to countries with high capital mobility.

crawl) regimes that he appeared to be excluding from this critique. This is troubling: if these regimes are indeed regarded as different, then data should be presented in a way that allows their differences to be identified. I take particular exception to this intellectual sloppiness because I long ago argued that the adjustable peg ought to be abandoned as it was rapidly ceasing to be viable (Williamson, 1965); indeed, it was precisely the attempt to develop a substitute that would be viable in an era of capital mobility that led me ultimately to the BBC regime.

This paper starts by describing the BBC regime and defending the proposition that, unlike the adjustable peg, it will be viable if it is managed competently in all circumstances except strong contagion. It then discusses how the BBC regime might be modified in order to make it less vulnerable to speculative pressures resulting, say, from contagion. This is followed by a consideration of the advantages and disadvantages of this regime in comparison to floating. The final issue that arises in this context is the problem imposed by having exchange rate regimes that differ across Latin American countries with intense mutual intra-trade, and discusses how this problem could be resolved.

2 The BBC Rules

The first of the BBC rules says that countries with diversified trade would do better to peg to a **basket** that would roughly stabilise their effective exchange rate², rather than to a single currency. At a 1996 conference (Williamson, 1999), I argued that there would be advantages to the East Asian currencies³ in using a *common* basket of the three major world currencies (dollar, yen, and now euro) to define their parities and thus the bands that would specify or orient their intervention policies.⁴ Use of a currency basket in place of a peg to a single currency, the dollar, would tend to stabilise their effective exchange rates against capricious variations as a result of movements in third currency exchange rates, notably the

² An “effective exchange rate” is the weighted average exchange rate against all currencies, where the weights are generally chosen to reflect the pattern of trade. (An alternative weighting system, based on trade elasticities, recognises that countries are also important competitors, rather than just trade partners.) A “real effective exchange rate” corrects by changes in relative inflation, so that the index does not change if prices increase as much at home as the weighted average of the country’s trading partners.

³ To be specific, I was thinking of the currencies of China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand.

⁴ Other advocates of the use of a common basket peg by the East Asian countries include Reisen and van Trotsenburg (1988) and Ogawa and Ito (1999). Mussa *et al* (2000, p. 59) also show some sympathy for a currency basket approach in East Asia.

gyrations between the yen and the dollar. I suggested that they use a common basket based on the direction of extra-regional trade of the region as a whole. The paper showed that the economies in question would lose little in terms of stabilising their effective exchange rates by all using this basket rather than adopting different baskets based on their individual trade patterns.⁵ However, this common peg would offer the important benefit of ensuring that their exchange rates vis-à-vis one another were not destabilised by shocks to the dollar-yen-euro rates. This would avoid the possibility of inadvertent competitive devaluation, or the suspicion of deliberate competitive devaluation, as a result of different pegging policies. I argued that there was no reason why individual economies could not continue to pursue different policies as regards changes relative to their parity: some could have a hard fix, like Hong Kong with its currency board; others might crawl against the basket, as Indonesia had been doing against the dollar; and others could use it simply as a guide to how they intervene in the foreign exchange market.

Perhaps the strongest argument in favour of the proposition that the East Asian countries would have gained by moving to a basket peg has been made by Kwan (1998). He showed that the yen-dollar exchange rate had a statistically significant impact on output growth in the 9 Asian economies included in my hypothetical basket. A strengthening of the yen depreciated their real effective exchange rates, given their de facto dollar pegs, and thus accelerated their growth, while a weakening of the yen had the opposite effects. Even Ronald McKinnon (2000), in his paean to the East Asian dollar standard, admits that “the dollar zone was... buffeted by fluctuations in the yen-dollar exchange rate”, and that the effect of Thailand’s de facto dollar peg “was to cause Thailand’s real effective exchange rate to drift upward before the currency attacks began in mid-1997”. Oddly enough, McKinnon is in no way inhibited in his enthusiasm for the dollar standard by these considerations, even though the reasons he gives for advocating the dollar link – that this provided a non-inflationary nominal anchor, and that it stabilised exchange rates among the East Asian currencies – would have been equally well-served by a common basket peg. Some of us will conclude instead that we would prefer to have the advantages of the dollar peg without its disadvantages, which is what a basket peg would offer.⁶

⁵ Indonesia would have found the common basket most out of line with its individual needs, but even in this case the problem that would have been created did not seem to be serious. De Brouwer (forthcoming 2001) shows, however, that the new members of ASEAN (Cambodia, Laos, Myanmar, and Vietnam) would not be served nearly as well by this common basket.

⁶ To be fair, McKinnon advocates stabilising the yen/dollar rate, which would also resolve the problem. But since that is unlikely to happen, the basket peg is a more relevant option.

That is not to argue that every country would be well-advised to adopt a basket peg. In my study of the operation of crawling bands in Chile, Colombia, and Israel (Williamson, 1996), I noted that Chile and Israel had both chosen to peg to a basket, while Colombia pegged to the dollar. I also argued that this was perfectly rational given the differences in their pattern of trade. Colombia's trade is dominated by the United States and other countries that peg to the dollar (like Venezuela), while the trade of Chile and Israel is far more diversified. The dollar seems to me a natural peg for all those Latin American countries that border the Caribbean, and to get increasingly unnatural the further south one goes. Those who know their geography will understand that I might question the wisdom of dollarisation in Ecuador and regard the Argentinean intention to stick permanently with a currency board based on the dollar as lunacy.

The second element of the BBC formula was a **wide band** (interpreted as a range of plus and minus 10 percent from the centre of the band, or even 15 percent). One purpose of this was to make sure that the authorities did not get into the no-win situation of trying to defend a disequilibrium exchange rate, given that no one imagined it would be possible to estimate equilibrium at all precisely. A second purpose was to permit the parity (the centre of the band) to be adjusted, to keep it in line with the fundamentals, without provoking expectations of discrete exchange rate changes that might destabilise the markets. A third purpose was to give some scope for an independent monetary policy, to be used for anti-cyclical purposes when a country found its cycle out of sync with the world norm. A fourth purpose was to help a country cope with strong but temporary capital inflows. As long as a band is (even partially) credible, arbitrageurs will allow for the expected reversion of the exchange rate toward its parity, and deduct an appropriate discount from (or add an appropriate premium to) the local currency yield when they compare their expected return from moving funds in with foreign yields to decide whether to place funds in the country. Moreover, investors in the tradable goods industries may tend to look at the parity rather than the market rate when assessing whether to go ahead with potential investment projects, implying that a given deviation from equilibrium will have less effect in distorting investment decisions.

The final element of the BBC formula is the **crawl**. This is most often used with a view to neutralising differential inflation. It can also be used to steer inflation down over time, as was done in Israel, though this can run the risk of undermining competitiveness if pursued too dogmatically (as happened in Russia). A crawl can also be adjusted in a fast-modernising economy in order to reflect an expectation of Balassa-Samuelson productivity bias⁷ and accomplish the real appreciation that such an economy requires over time in order to maintain equilibrium. Finally, the rate of

crawl can be changed, or occasional small parity adjustments can be superimposed on the regular crawl, in order to facilitate needed real adjustment.

3 The Question of Viability

Why would one expect this regime to be viable in almost all circumstances, when the adjustable peg is not? The problem with an adjustable peg is that it contains neither a mechanism to ensure that the equilibrium rate remains close to the parity (as a currency board system is supposed to) nor one for adjusting the parity when the equilibrium rate changes. This means that misalignments are virtually bound to arise from time to time. A currency peg that is seen to be misaligned sooner or later loses credibility with the market, and becomes a standing invitation to speculators to mount a raid. A government that pegs its currency is therefore bound to assure investors that any change in the peg is unthinkable, even, or perhaps especially, when it begins to wonder whether such a change can be resisted. This inevitably means that, if and when it is forced to devalue, its own credibility will suffer. It also makes it likely that, if its assurances are believed, many of those who borrow from abroad will not bother to hedge their foreign exchange exposure. For a country with a large volume of foreign-exchange denominated debt, this means that any substantial devaluation that may ultimately occur will pose problems of solvency to the financial and/or corporate sectors, leading to the sort of financial distress that was witnessed in East Asia in 1997 following the forced currency devaluations in the region.

The fundamental reason for expecting the BBC regime to be immune to these problems is that it avoids the need that arises under the adjustable peg to defend a disequilibrium exchange rate. The basket prevents the parity becoming misaligned as a result of extraneous changes in third-currency exchange rates. The parity can also crawl, so that it can be kept close to its equilibrium value despite shocks like domestic inflation or changes in oil prices or Balassa-Samuelson productivity bias that are prone to produce misalignments in an adjustable peg system. The band gives plenty of room for the exchange rate to move before the authorities are called on to defend it, which makes it unlikely that they will have to counter selling pressures when the currency is truly overvalued (or to counter buying pressures when it is truly undervalued).

Defending a currency against an attack when it is not misaligned is

⁷ See Balassa (1964) and Samuelson (1964). Chile built a 2 percent per annum real appreciation to reflect this factor into the formula for its crawl from 1995 to 1999.

altogether less hopeless than when it is. This is not because the market can be relied on to abstain from attacking currencies that are not misaligned. On the contrary, we now know from the work of the Market Dynamics Study Group (2000) that strong speculative attacks against the Australian and Hong Kong dollars, the Malaysian ringgit, and the South African rand (two of which were floating, incidentally) were under way in September 1998. Fortunately the effective demise of LTCM ended these financial shenanigans and, with a little help from interest rate reductions by the Fed, the world economic crisis quickly subsided. But the mystery is how those who were speculating against currencies that were already undervalued (as the Australian dollar and South African rand, the two floating currencies, certainly were) thought they were going to make money out of it. Presumably they were relying on the theory of the Greater Fool: that they would succeed in spreading panic to a point where others would be so desperate to get out of the currencies even at bargain basement prices that the speculators would be able to buy them back to cover their short sales at a profit. The point is that a speculative raid against currencies that are not misaligned requires the speculators to take that kind of risk, which places the defending government in a much stronger position than one that is trying to stave off a devaluation that is justified by the fundamentals. That is the situation that a government employing a BBC regime could normally expect to be in.

It should also be noted that the wide band means that the BBC regime, like floating, gives those who borrow abroad in foreign currency an incentive to cover their exposure in the forward market.

How could matters nonetheless go wrong? We have seen three instances in recent years where a BBC regime ran into serious problems, in Chile, Russia, and Indonesia. Let us examine each of these instances.

In Chile, the problem was that the underlying capital inflow implied a more appreciated (lower, in Latin American parlance) real exchange rate than the government judged it was prudent to allow. This resulted in periodic speculative pressures when market operators concluded that they might be able to force an appreciation beyond the edge of the band. The government sought to limit the appreciation by a series of measures, including the choice of exchange rate regime and the institution of controls on capital inflows (the *encaje* on debt and the minimum holding period of a year on inflows of equity capital). There is a literature on the effectiveness of the *encaje* (although, curiously, not on the effectiveness of the minimum holding period for equity), which I have examined elsewhere (Williamson, 2000, pp. 37-45). My conclusions were that it certainly affected the composition of capital inflows in the desired direction (i.e. reducing the proportion of short-term debt), and that the charges that it

was useless in reducing the level of inflows are based on inconsistent reasoning.

There is no parallel literature that examines whether the BBC regime helped to restrain the appreciation to less than would have resulted under a floating regime. The theoretical reason for expecting such an effect has already been sketched. If the band has any credibility at all, then it will lead market participants to anticipate a rebound toward the centre of the band as the rate approaches the lower margin, which will reduce the expected return from holding pesos, which will discourage inflows. There is empirical evidence that this effect operated in the context of the European Monetary System (EMS). Svensson (1992, pp. 132-33) showed that, when a rate moved within the band, the forward rate normally moved by less than the spot rate, indicating that the market expected that the spot rate would revert toward the centre of the band. This is in contrast to the situation under a floating exchange rate, where a change in the spot rate is normally associated with an almost identical change in the forward rate. We have no comparable empirical evidence about the impact of bands in emerging market countries. Establishing whether bands generally help to nurture mean-reverting expectations seems to me the most important empirical issue outstanding in exchange rate economics.

Chile abandoned its band for reasons that I have still not been able to fathom, except that it was the intellectual fashion of the day. In contrast, Russia abandoned its band (or “corridor”, as the Russians called it) under force majeure, in the crisis of August 1998. The cause of the crisis was failure to control the fiscal deficit, which had been financed by short-term debt (GKO) with high and increasing interest rates. It became increasingly clear that fiscal policy was unsustainable, and the crisis broke when the Duma rejected the proposals to tackle the fiscal deficit that had been agreed with the IMF. But it soon became clear that the devaluation that followed the crisis was just what the Russian economy needed. While Russian exports consist largely of energy and mineral resources that are not very sensitive to the real exchange rate, there is a large import-competing manufacturing sector that is highly sensitive to the exchange rate, which had been sacrificed on the altar of rapid inflation stabilisation in the preceding years. The real devaluation revived this sector, with the result that Russia has subsequently enjoyed positive growth for the first time since the collapse of communism.

I would ascribe the collapse of the Russian corridor to errors in policy. The Russian authorities placed an excessive emphasis on rapid inflation stabilisation, and looked to the exchange rate anchor (in the form of a slow rate of depreciation of the band) to accomplish it. Such a strategy has typically led to overvaluation of the currency and pressures on the real

economy. Russia was particularly susceptible to this danger for two reasons. One is the great strength of its energy and mineral export sectors, which makes it very vulnerable to Dutch disease. The other was the fiscal deficit, which needed high interest rates to finance it by capital inflows, which were forthcoming because many Western investors were convinced that Russia was too nuclear to fail.⁸ The main conclusion I draw is that the IMF should have sent the Chilean policymakers of the early 1990s to Russia to teach them of the dangers of succumbing to Dutch disease, the virtues of being content with a gradual disinflation as the price of keeping a healthy real economy, the importance of fiscal discipline, and the need to keep a sufficiently rapid depreciation of the nominal exchange rate as long as inflation remains high.

The third case where a BBC regime failed is Indonesia, which had been operating a de facto crawl for some years and was gradually widening its band prior to 1997. It responded to the Thai devaluation that initiated the East Asian crisis in July 1997 by widening its band from 8 to 12 percent. The rupiah depreciated by 8 percent, toward the weak edge of the band, in the next 10 days, and then remained within the band for another month until contagion suddenly hit, whereupon the band was abandoned with hardly a fight. The subsequent depreciation of the rupiah was the immediate cause of the financial distress that Indonesia suffered, since many corporations had borrowed in dollars, failed to hedge, and found themselves unable to maintain debt service when their rupiah obligations exploded. Note that Indonesia's macro policies, including its exchange rate policy⁹, were given good marks by most economists right up to the crisis, even after Thailand had succumbed. One might even wonder whether Indonesia should not have attempted to defend its band instead of abandoning it without a fight, because once the band went there was a scramble to cover exposed foreign exchange positions that simply intensified the depreciation and ensured total collapse. I have to admit, however, that most of those who were closely in touch with events in Indonesia are convinced that any such attempt would have been doomed to failure, and I have no way of proving them wrong. If that is so, it implies that even good exchange rate

⁸ Purchases of GKO's were often referred to as a "moral hazard play".

⁹ My one criticism was that it used the dollar rather than a basket as a peg. This had led it, along with the rest of East Asia, to an unwanted appreciation of the effective exchange rate as a by-product of the yen's depreciation against the dollar after the middle of 1995. But I see little evidence that the rupiah was overvalued. Exports were still growing rapidly, at a rate of 9.0 percent in 1996 and 7.9 percent in 1997. The current account deficit peaked at 3.6 percent of GDP in 1995 and 3.4 percent of GDP in 1996, which is about the maximum that can be considered prudent but was not grossly excessive in the way that Thailand's deficit was. Growth remained strong. Goldstein, Kaminsky, and Reinhart (2000) find few of their crisis indicators to have been signaling an Indonesian crisis prior to the Thai crisis.

management using the BBC rules is not proof against strong contagion effects, which Goldstein, Kaminsky, and Reinhart (2000) show to have been the origin of the Indonesian crisis.

One would certainly be entitled to draw the conclusion that crawling bands are not a panacea from the experiences of Chile, Russia, and Indonesia; but then, most of us do not expect to find panaceas. Chile shows us that there are circumstances when a band may not suffice to keep an exchange rate at the level that the authorities are seeking, but it does not show that the band was not helpful in that endeavour. Russia shows us that a band can collapse if policy is not managed skilfully. It is probably true that the demands on policymakers from a BBC regime are more onerous than those imposed by either floating or a strongly fixed rate, both of which make relatively straightforward demands on monetary policy (direct it respectively to an inflation target or to maintaining the exchange rate). That is a fact that should be acknowledged by advocates of this regime. Indonesia shows us that a band can be overwhelmed by contagion.

4 Modifying the BBC Proposals

The last eventuality is one that might be addressed by a modification of the BBC regime. The problem is that, if speculative pressures prove sufficiently strong to overwhelm the defenses, confidence is likely to collapse and the exchange rate get carried away to badly misaligned levels as panic sets in. A potential solution is to weaken the rules so as to abandon the concept of a fixed line that has to be defended (a Maginot line) without abandoning the attempt to provide guidance to the market as to what range of rates are appropriate and to put the market on notice that policy will push in that direction. There are at least three potential ways of doing this (Williamson, 2000, pp. 26-29).

A first is to have the authorities announce a reference rate, equivalent to a parity or centre of the band, but not to announce any margins. The market would then know in what direction policy would push if the authorities did intervene or adopt other policies to influence the exchange rate, and market participants would presumably take account of this possibility in deciding on their strategy. A second possibility is to have “soft margins”, meaning that there would not be an absolute government commitment to defend the edges of the zones. Rather, in the event of strong speculative pressures, the government could announce that it would let the rate go outside the band, while warning the market that it planned to direct policy to bring the rate back within the band if and when that might prove possible. The third possibility is a monitoring band, which would be a band

around the announced parity within which the government would be committed *not* to intervene. Once the rate went outside that range, on either side, the authorities would be allowed to intervene, and indeed there might be a presumption that intervention would be normal. In all three cases there would be no Maginot line but there would be official guidance to the market as to what rates were believed to be consistent with a satisfactory macro position, with implications for likely intervention policy.

Stanley Fischer (2001) has questioned the usefulness of such a framework:

Recognising the difficulty for an emerging market country of defending a narrow range of exchange rates, John Williamson (2000) proposes alternative regimes. He calls these BBC arrangements: basket, band, and crawl. He also recommends that countries if necessary allow the exchange rate to move temporarily outside the band, so that they do not provide speculators with one-way bets that lead to excessive reserve losses. In these circumstances, the band is serving as a weak nominal anchor for the exchange rate, but it is not at all clear why such a system is preferable to an inflation-targeting framework. Possibly the band could be thought of as a supplement to an inflation targeting framework, but it would need to be demonstrated what if any benefit that brings. One possibility – which is not however very plausible – is that by committing weakly to some range of exchange rates, the authorities make it more likely that fiscal policy will be brought into play if the real exchange rate moves too far from equilibrium.

The “not very plausible” possibility that Fischer discusses at the end was in fact one of the purposes of the “blueprint for policy coordination” that Marcus Miller and I developed in the 1980s (Williamson and Miller, 1987). In my normative dreams I still hope that the world may one day be seized by the rationality of this approach, but I have long since stopped basing policy recommendations on the hope that it will be implemented any time soon. Neither do I think of the band as an alternative to an inflation targeting framework; I think of inflation targeting as the modern version of internal balance, and the BBC rules are intended to help combine internal balance with external balance. Hence the band should indeed be seen as a supplement to an inflation-targeting framework, and Fischer’s question is what benefits it may bring over and above what can be expected with a floating exchange rate. I see three such potential benefits: transparency, Krugman’s “honeymoon effect”, and the provision of a basis for cooperative exchange rate policies between neighbouring countries.

5 Transparency

One of the characteristics of managed floating is a lack of transparency. One cannot rely on informed public discussion of policy to illuminate its failings or suggest improvements, because the public is not provided with information on which it can judge whether the authorities' aims are sensible, or whether they are succeeding in implementing those aims.

Or is the lack of transparency a disadvantage? Naturally think-tankers think it is, but government officials tend to take a very different view. They find it attractive to be able to act without the threat of informed criticism. They surely find life easier when there are no public benchmarks that can indicate their failure. They run much less risk of political censure when misalignments can be blamed on the anonymous market than when the headlines are prone to scream that their policies have failed. So it is not very difficult to understand the charm of managed floating to an insider.

What seems much stranger is that many academics are so tolerant of the lack of transparency of managed floating in an age when transparency has emerged as a litmus test of public institutions. A possible explanation is that not all have yet caught up with the reality reflected in the Calvo-Reinhart (2000) analysis of "fear of floating", namely, that most countries that describe their policies as floating do not in fact resign themselves to allowing the market to work its will unimpeded. One might conjecture that these academics support free floating because they assume that the exchange markets work like the textbooks say they do, with ubiquitous rational expectations pinning down exchange rates to levels determined by "the fundamentals". This is often regarded as desirable not just because "the market knows best", but also because (like a currency board) free floating eliminates any role for discretionary policy. And then managed floating is accepted as a mildly degraded version of the real thing, that shares the virtue of being relatively immune to speculative crises – which is, after all, the major factor that has driven many to advocate the bipolar position.

Let us instead be realistic enough to accept the fact that few countries feel comfortable abandoning their exchange rate to either the workings of the free market or permanent fixity. Most governments and central banks believe that they can bring to bear something that the markets lack, namely, a focus on longer-term issues. My own view is that this is entirely reasonable. But then one needs to ask whether exchange rate policy should be subject to public scrutiny. If one regards that as desirable, that rules out managed floating.

6 Stabilising Speculation

In addition to providing transparency, a reference rate or any form of reasonably wide band has the potential to strengthen the incentive for stabilising speculation, and thus ease the problem posed by high capital mobility. This is essentially because of Krugman's "honeymoon effect" (Krugman, 1991), which showed in a formal model how a credible promise of intervention at the margin would cause the market rate to avoid hitting the margin when it otherwise would have done even without intervention actually occurring. The expectation would cause rational profit-seeking speculators to speculate in a way that would be more stabilising (in the sense of more prone to hold the rate closer to equilibrium) than would otherwise be the case. A disadvantage of the various proposals for weakening the band discussed earlier is that they would all tend to weaken the stabilising impact of a credible band. The counter benefit that is being sought is to limit the loss of credibility that occurs every time that a government fails to deliver on a promise to maintain a band. How these two considerations would balance out is not a priori obvious, but there is no reason to dismiss the possibility that a credible promise to implement (say) the reference rate proposal should deliver less than a non-credible promise to defend a hard band.

But the more relevant question is whether a modified version of the BBC regime (meaning a reference rate, soft band, or monitoring band) should be expected to have an impact on the exchange rate if monetary policy is devoted to domestic purposes (inflation targeting). The models taught in economics textbooks say that exchange rates are driven by ubiquitous rational expectations of cumulative interest differentials between now and the long run determining the premium or discount from purchasing power parity (with possible qualifications about dependence of long-run equilibrium on factors like current account balance and the impact of portfolio composition). Those who believe those models are basically right will see no more scope for soft bands to make an impact than they do for sterilised intervention. But suppose instead that one is impressed (and depressed!) by the evidence that financial markets are often driven by fads; that one has abandoned hope of finding a rational explanation for last year's weakness of the euro; and that one is convinced by the evidence that sterilised intervention sometimes has an effect (see Sarno and Taylor, forthcoming). In such a world it seems entirely possible that a soft band that informs the market of official estimates of the equilibrium rate, and promises actions (even short of monetary actions) to push the rate toward equilibrium, can serve to guide market expectations.

7 Policy Cooperation

Latin America is the prize exhibit of those who subscribe to the bipolar view. The intermediate regimes that used to be the norm have all but vanished. In their place one has Argentina with a currency board, Ecuador and El Salvador that have gone even further by unilaterally dollarising, and a number of floaters that include Brazil, Chile, Colombia, Peru, and Mexico. Most of the floaters have also adopted inflation targeting. Among the larger countries, only Venezuela retains an intermediate regime, and most of us do not think of contemporary Venezuela as a model of enlightened economic policy.

One of the disadvantages of this situation is that neighbouring countries with intense mutual trade relations can experience strong swings in their bilateral exchange rates. This can happen when two countries are both independently floating. European experience suggests that this will be perceived as an increasingly unacceptable situation as trade ties deepen. The problem can also arise, and may indeed be even more acute, when one country has pegged firmly to the dollar and the other floats: Argentina and Brazil provide the classic example. There is at least some presumption that a floating rate will move in response to a shock of relevance to the domestic economy, but the movements in the dollar are governed entirely by shocks extraneous to a country that pegs to it. This problem tends to be obscured from view in Latin America because the dollar is regarded as a fixed numeraire, but in fact its gyrations can have very uncomfortable effects on countries that peg to it, as the Asians discovered in 1996 and Argentina began to realise last year.

If two or more countries with independently floating currencies decide that disruptions to their intra-trade are sufficiently serious to warrant action, they can follow the precedent of Europe when it created the EMS in the late 1970s. Or they could look at the contemporary debate in East Asia about concerting exchange rate policies by pegging to a common basket. If the authorities are unhappy about the bilateral exchange rate implied by their floating currencies, they can delay the start of the system until their currencies have floated to levels that produce a mutually satisfactory bilateral (or multilateral) relationship, and a little activism can help them float there.

Matters would be more difficult if Argentina were to decide that its monetary future lay in seeking a Mercosur monetary union. That strikes me as a reasonable objective. Argentina does more than twice as much trade with the rest of Mercosur as it does with the United States, some 35 percent compared to 14 percent (1998 figures). Its shocks are presumably much more similar to those experienced by Brazil than to those

experienced by the United States. And both countries seem as thoroughly inoculated against a revival of hyperinflation as post-Weimar Germany proved to be. However, there seems little doubt that the devaluation of the Brazilian real in 1999 left the peso overvalued in terms of the real. Argentina would be ill-advised to allow such an overvaluation to be built into a monetary union. And it certainly will not want to start discussing a devaluation of the peso in terms of the dollar, a discussion that could easily unravel the confidence that has been so painfully built up over the past decade. That means that it would have to rely on some combination of downward pressure on the price level in Argentina, real appreciation of the real, and a downward float of the US dollar in order to allow it to achieve a tolerable starting point for the bilateral relationship. Fortunately the fact that the dollar is so overvalued as a result of the “strong dollar” policy (or at least rhetoric) leaves plenty of scope for a dollar depreciation in the coming years.

It would be a shame if Argentina got locked into a refusal to discuss the advantages (and doubtless disadvantages) of a Mercosur monetary union on the ground that this might undermine confidence in Argentina’s perpetual fidelity to the dollar. Such a debate should take place, however, with a common assumption that the necessary real depreciation of the peso in terms of the real will be accomplished without a devaluation of the peso against the dollar. When the peso-real relationship in real terms achieves some target level (a target that can be discussed and agreed in advance), the peso would be unhitched from the dollar and tied instead to the real, e.g. in the way that the European currencies were linked in the EMS. That way there will be no incentive to switch in or out of the peso in anticipation of the delinking of the peso from the dollar, for there will be no discontinuity in market values on the day the transition is made. If a dollar depreciation is an important component of the reason for hitting the target and if market opinion is carried away with pessimism about the prospects for the dollar in the customary faddish way, it will look attractive to switch from dollars into pesos at the time of transition. There is no harm in that.

8 Concluding Remarks

This paper has challenged the conventional view that the mass migration of exchange rate regimes in Latin America toward the two approved poles of floats or hard fixes is a welcome development. While the “fear of floating” diagnosed by Calvo and Reinhart may prevent countries floating as freely as the Washington establishment might wish, and thus limit the potential damage to competitiveness when the next capital surge

materialises, the likely costs are still significant. Policy will be undesirably non-transparent. The regime will forego the opportunity of building up credibility that could ultimately result in making speculation more stabilising. And there will be problems of intra-region competitiveness changing arbitrarily that are likely to impede the process of regional integration. I have argued that one can conceive of solutions to this problem other than all countries adopting hard pegs to the dollar, a solution that would not seem attractive to countries much south of the Caribbean.

References

- Balassa, Bela (1964), "The Purchasing Power Parity Doctrine: A Reappraisal", In: *Journal of Political Economy*, 72.
- Calvo, Guillermo A., and Carmen M. Reinhart (2000), "Fear of Floating", mimeo, University of Maryland.
- De Brouwer, Gordon (2001 forthcoming), "Does a Formal Common-Basket Peg in East Asia Make Economic Sense?", In: *Financial Markets and Policies in East Asia*, Routledge, London.
- Fischer, Stanley (2001), "Exchange Rate Regimes: Is the Bipolar View Correct?", Distinguished Lecture on Economics in Government delivered at the meetings of the American Economic Association, New Orleans, 6 January.
- Goldstein, Morris, Graciela Kaminsky, and Carmen Reinhart (2000), *Assessing Financial Vulnerability: An Early Warning System for Emerging Markets*, Institute for International Economics.
- Krugman, Paul (1991), "Target Zones and Exchange Rate Dynamics", In: *Quarterly Journal of Economics*, 106(3), August.
- Kwan, C. H. (1998), *The Yen, the Yuan, and the Asian Currency Crisis: Changing Fortune between Japan and China*, Nomura Research Institute, October.
- Market Dynamics Study Group (2000), *Report* (Annex E in the Report of the Working Group on Highly Leveraged Institutions of the Financial Stability Forum), 5 April.
- McKinnon, Ronald I. (2000), "The East Asian Dollar Standard: Life After Death?", In: *Economic Notes*, 29(1), pp. 31-82.
- Mussa, Michael, Paul Masson, Alexander Swoboda, Esteban Jadresic, Paolo Mauro, and Andy Berg (2000), *Exchange Rate Regimes in an Increasingly Integrated World Economy*, International Monetary Fund, Washington D.C.
- Ogawa, Eiji, and Takatoshi Ito (1999), "On the Desirability of a Regional Basket Currency Arrangement", paper presented at the CEPPII-KIEP-

- ADBI conference in Seoul, December 15-17.
- Reisen, Helmut, and Axel van Trotsenburg (1988), "Should the Asian NICs Peg to the Yen?", In: *Intereconomics*, July/August, pp. 172-77.
- Samuelson, Paul A. (1964), "Theoretical Notes on Trade Problems", In: *Review of Economics and Statistics*, 46(2), May, pp. 145-54.
- Sarno, Lucio, and Mark P. Taylor (forthcoming 2001), "Official Intervention in the Foreign Exchange Market: Is It Effective and, if so, How Does It Work?", In: *Journal of Economic Literature*.
- Svensson, Lars E.O. (1992), "An Interpretation of Recent Research on Exchange Rate Target Zones", In: *Journal of Economic Perspectives*, 6(4), Fall.
- Williamson, John (1965), *The Crawling Peg*, Princeton Essays in International Finance No. 50, Princeton.
- (1996), *The Crawling Band as an Exchange Rate Regime: Lessons from Chile, Colombia, and Israel*, Institute for International Economics, Washington D.C.
- (1999), "The Case for a Common Basket Peg for East Asian Currencies", In: S. Collignon, J. Pisani-Ferry, and Y.C. Park (eds), *Exchange Rate Policies in Emerging Asian Countries*, Routledge, London and New York.
- (2000), *Exchange Rate Regimes for Emerging Markets: Reviving the Intermediate Option*, Institute for International Economics, Washington D.C.
- Williamson, John, and Marcus Miller (1987), *Targets and Indicators: A Blueprint for the International Coordination of Economic Policy* Institute for International Economics, Washington D.C.

Comment on “Exchange Rate Policy in Latin America: The Costs of the Conventional Wisdom,” by John Williamson

Carlos Massad

As usual, John Williamson provides us with a most interesting and thought provoking paper. It is, in essence, a summary of the evolution of John’s thinking on exchange rates, moving from a very specific crawl (1965) towards a sort of floating *cum* signals with soft or inexistent limits for the band.

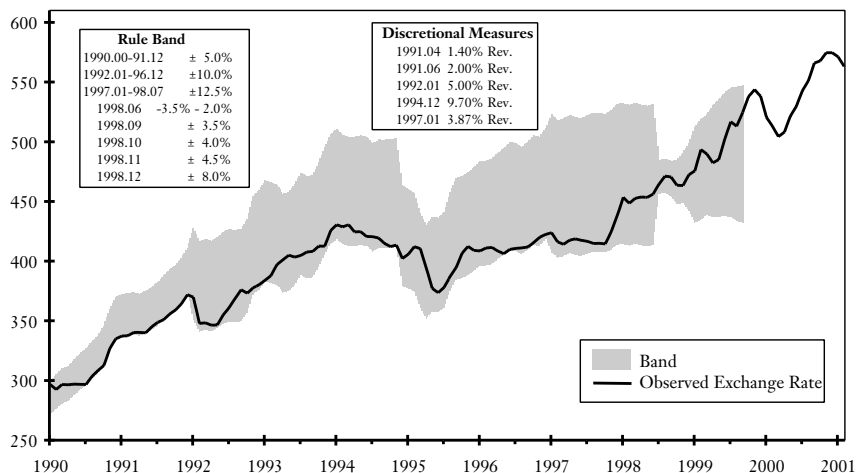
In John’s view the basket of currencies as centre of the band should reflect the relevance of the international trade relationship; the band reflects the uncertainty regarding the “equilibrium” or “fundamental” value of the real exchange rate; and the sliding of the basket reflects the need to adjust according to inflation differentials and productivity, or to support disinflation. As John Williamson’s thinking progresses through the paper, the BBC (band, basket, crawl) is somewhat magically transformed into a CBS (crawling basket signal) as he progressively relaxes the restrictiveness of the limits of the band. This makes the paper very difficult to criticise as the degree of precision of the band definition is left to the reader.

In fact BBC, and even CBS, represent the exchange management in Chile during most of the 1990s when we had a band, basket and crawl until September 1999. On that date, the Central Bank of Chile suspended the commitment to support the limits of the band, but kept publishing, without commitment, the centre of the band.

John wonders why Chile abandoned the formal band scheme in September of 1999, implying that such a move was a mistake. Floating in Chile is too recent to grant a formal systematic evaluation, but there is some evidence already available in favour of the present system in Chile.

Figure 1 shows that the Chilean BBC was far from being a strict one, as the band was widened, narrowed, twisted and tortured frequently during its decade of existence. The figure also shows that, up to 1998, the market rate kept at the most appreciated side of the band, moving towards the depreciated side later on.

Figure 1 Nominal Exchange Rates of the Chilean Peso, 1990-2001
(Chilean peso/dollar)



Chile's experience shows that financial variables play a very important role in the determination of the "equilibrium" or "fundamental" value of the real exchange rate for periods that are relevant to policy making, and that it is silly to ignore such effects under present circumstances of foreign exchange and capital markets. In fact, the rather large width of the band did not avoid the need for strong defense during 1998. The BBC scheme in use at the time did undergo speculative attack, which put the Central Bank between Scylla and Charybdis: either to strongly defend the band or to lose credibility completely. In practice the BBC became a crawling peg when the need to defend the band predominated. A BBC scheme is likely to be attacked just as a crawling peg.

By the way, we never know whether the real exchange rate is in line with fundamentals: one can expect expert opinion to diverge, even substantially, among governmental authorities. Even standard models of fundamentals for the real exchange rate have high standard errors (around 5 percent), which make that a band of plus and minus 10 percent may be perceived as a narrow one.

As fundamentals ought to include the situation of financial markets and calculations of the long-term "equilibrium" rate do not, a scheme that is perceived as a relatively rigid one may be easily attacked after a change of sentiment of investors. When the attack occurs, there is no sterilised intervention capable of defeating it. Sterilised intervention implies that the Central Bank provides the necessary liquidity to continue the attack.

Unavoidably, non-sterilised intervention must be used, what implies that sharp changes in real interest rates occur, transmitting volatility from the financial markets to real output and employment. In the case of Chile it is quite clear that the volatility of the interest rate was much larger during the BBC period than what it has been during the floating period, up to now.

In the Chilean case, exchange rate volatility has not been larger with floating. As a matter of fact, if one makes calculations of a virtual band from September 1998 to date, using the rules applicable then, the market exchange rate never crossed the limits of the band. It did approach those limits but, contrary to what happened during the BBC period, there have been no speculative attacks. Prior to floating, every time the market exchange rate approached the limits of the band speculative attacks developed and the authorities were forced to intervene directly or indirectly through changing the band or adjusting restrictions.

The Chilean peso volatility after floating is lower than that of the euro, the yen, the Mexican peso, the Brazilian real, the New Zealand dollar and the Australian dollar. Perhaps this is at least in part a consequence of the way in which we implemented the transition from BBC to floating. The process took almost two years: the accounting system of the Central Bank was modified to mark to market; currency mismatch regulations were introduced and strengthened in the financial system; banks were instructed to take into account currency mismatches of their borrowers when evaluating risk; instruments for exchange rate risk coverage were introduced and actively promoted by the Central Bank; possibilities for international operations of the banking system were widened; regulations for the placement of private paper abroad were reduced and authorisation was given to issue paper in pesos or UF's.¹

All these measures were taken in the framework of a very strong financial system, which exceeded the Basel capital requirements by over 50 percent, while non-performing loans comprised less than 2 percent of the banking system's total loan portfolio and provisions exceeded that figure. Only after these measures were put in place the peso was floated, at a time of our own choosing, with relative calm in the market.

We are quite satisfied with our floating experience up to now. Floating introduces the right incentives to minimise exchange risks. We feel that floating has provided us with additional degrees of freedom in monetary policy, which we have been exploiting in the last 18 months: while the Federal Reserve increased the Federal Funds rate (FFR) by over 100 basis

¹ The UF (Unidades de Fomento) is an inflation-indexed Chilean monetary unit that is adjusted daily to reflect changes in the previous month's consumer price index.

point, we could keep our own rate stable and even falling. We reduced real rates by 50 basis points while the Federal Reserve FFR was still moving upwards.

It is true that the lack of synchronisation of interest rate movements pushed, at times, the exchange rate close to the limits of the old band, but the fact that there were no rigid points of attack avoided speculation and pre-empted sharp responses with interest rate.

In his paper John Williamson compares the abandonment of the bands in Russia, Indonesia and Chile. This is a curious comparison, but it is illustrative of the variety of countries that have used this system, and the number of *ex post* explanations to justify its abandonment. Nevertheless, it is our opinion that it is better to have a system that *ex ante* does not introduce potential risks of credibility in such a volatile relative price as the exchange rate. Hence, the floating in Chile.

I think we have learned through hard experience that schemes where the authorities have to make explicit their preference for a given exchange rate lead only to a loss of credibility. John is quite aware of this and he rejects any rigid interpretation of the BBC scheme including a Maginot line, adding shades of grey to an already grey area: flexibility, *ma non tanto*; sometimes, but not always. In the present world this is hardly feasible unless one goes the road of insulating against capital movements instead of covering against exchange rate risks.

A very attractive banner that John hoists is that of the focus in the medium term, arguing, “governments and central banks may contribute a vision that the market lacks”. The question here is whether a scheme of exchange rate bands, discretionally adjusted, with little transparency, is the way to have this focus. Wouldn't it be better to have a floating scheme, transparent, where fiscal and monetary policies play according to established rules of the game, and where interest rate policy is framed with a strong focus on the medium term (e.g. a two-year inflation target)? Why should the exchange rate be the medium-term target? If one believes in the long-term neutrality of money, it is hardly useful to have medium-term targets for the real economy assigned to monetary policy. More than that, it is extremely dangerous, as it would imply assigning responsibilities without enough tools, what leads to discredit and failure.

The reading John makes of the Krugman model on stabilising speculation results from the fact that, in that model, the band has full credibility, so the exchange rate never gets far away from the centre of the band (an inverted U-shape distribution). But the empirical evidence, and Krugman also states so, is that the contrary happens! (U-shaped distribution). This happens precisely because, in practice, the bands have had little credibility.

In any case, it is important to notice that, in principle, a floating

exchange rate does not preclude interventions to limit the degree of volatility, even though one can doubt the efficacy of such intervention. The cases of Mexico and Australia are illustrative: they have introduced automatic mechanisms to intervene so as to smooth the path of the exchange rate, but volatility is still substantially larger than in Chile, where there has been no intervention at all. Certainly, the Chilean Central Bank may also intervene in a much more massive way if it is facing situations of serious liquidity shortage, for instance due to regional financial crises. Therefore, there is no need to fix boundaries to the exchange rate in order to limit speculation. On the contrary, it is possible that going that way (i.e. by adopting a BBC) one may encourage speculation, as the Central Bank credibility is put at stake through the setting of a fixed, or crawling, numeric value for the exchange rate.

Hence, going from BBC to CBS may not be enough. But we do need additional time to pass a more strict judgement in the Chilean case.

East Asia's Experiences with the Free Floating Exchange Rate System

Yung Chul Park and Chi-Young Song

1 Introduction

Many studies have shown that an exchange rate fixed at an untenable level was invariably one of the major causes of financial crises as in the cases of Mexico, East Asia, and Russia. In particular, adjustable peg exchange rate systems have proved to be unworkable over any length of time for those emerging market economies integrated or integrating into the international capital markets and should not be expected to be viable (Fischer, 2001). The major part of the argument against intermediate regimes is the impossible trinity; that is, fixed exchange regimes lose monetary independence when the capital account is fully liberalised.

Echoing this view, Blinder (1999) argues that floating rates should be the accepted norm in the new financial architecture. Dornbusch (1999) claims that countries in East Asia have no option but to move to a flexible exchange rate system. Williamson, who has long been an advocate of intermediate regimes for emerging market economies, concedes in his recent book (2000) that “no country that had been allowing its currency to float reasonably freely has suffered a crisis anywhere near as acute as those experienced by the East Asian victims of the 1997 crisis”, although this evidence does not mean that crises are impossible in flexible exchange rate regimes. While there has been growing support for the free floating exchange rate system in emerging market economies, intermediate regimes have by no means been hollowed out. Frankel (1999), Williamson (2000), and many others still believe that a variety of adjustable peg systems are more likely to be appropriate in emerging market economies than corner solutions. Nevertheless, proponents of intermediate solutions constitute a minority of the economic profession.

Despite the overwhelming support for the free floating system in emerging market economies that are open to capital flows, many countries in East Asia have been reluctant to let their exchange rates fluctuate. Malaysia decided to adopt a fixed exchange rate system in the midst of a crisis, China continues to adhere to what they call a managed floating system, and other East Asian countries with a free floating system intervene extensively to stabilise their nominal exchange rates.

An important question is why these emerging market economies in East Asia have so little confidence in the free floating exchange rate system. Proponents of the floating exchange rate system argue that the system is decidedly less vulnerable to speculative attacks in a world of mobile capital because it could play the role of absorbing both foreign and domestic shocks. Following this line of argument, the IMF and many experts have recommended variants of the Mundell-Fleming model with a Phillips curve and inflation targeting to emerging market economies open to international capital flows as a macroeconomic policy framework.¹ East Asian policymakers do not appear convinced that such a framework would be operable and effective in ensuring price stability while sustaining robust growth and avoiding large current account imbalances. This lack of confidence in the new macroeconomic system has raised the question of whether alternative frameworks such as floating with capital control or an intermediate regime with capital mobility may be more appropriate to many East Asian emerging market economies.

The purpose of this study is to analyse the behaviour of the nominal and real exchange rates and exchange rate policy of the three crisis-hit economies in East Asia – Indonesia, Thailand, and Korea – which shifted to the free floating system in 1997 as part of the conditionality for the IMF rescue financing. Section 2 discusses some of the reasons that make these economies reluctant floaters. One of the problems of free floating are the large swings in the nominal exchange rate. They make business harder and more costly to firms engaged in foreign trade and also complicate short-run management of macroeconomic policy and long-term development strategy.

In Section 3, we examine whether the intermediate exchange rate regime could be an alternative system appropriate to East Asian economies. Section 4 investigates the extent to which volatility of the nominal exchange rate in the three countries has increased since lifting foreign exchange controls. A number of recent studies suggest that the authorities of all three countries have intervened systematically and rather frequently in the foreign exchange market. Section 5 attempts to identify some of the objectives of their intervention. One of the advantages of a free floating exchange rate system compared to intermediate or fixed exchange rate regimes is that it frees monetary policy from stabilising the nominal exchange rate to be used to achieve domestic policy targets – price stability and low unemployment. Section 6 analyses the issue of whether the three countries have gained monetary autonomy since adopting the free floating system. Concluding remarks are found in the final section.

¹ See Svensson (1997 and 2000) and McCallum (1999).

2 Fear of Floating: East Asian Experience

Perhaps the most common argument against a free floating system is that under flexible rates, exchange rates often move too much, in particular in small economies with open capital markets, and that these movements are unrelated to fundamentals, causing undesirable movements in real exchange rates.² As shown in Figure 1, the indices of real exchange rates of Indonesia, Korea, and Taiwan display considerable instability in the 1970s and 1980s. After a relatively stable period thereafter, the real exchange rates collapsed when the crisis broke out in 1997. Since then they have been fluctuating widely again, largely because of the increase in volatility of the nominal exchange rates, which in turn may be caused by the increased volatility of capital flows.

When foreign exchange markets are deregulated after a long period of control in emerging market economies, they tend to be shallow, brittle and lack the market-supporting infrastructure. As a result, even a small change in capital flows or market expectations could trigger a large change in the nominal exchange rate. At times, the high degree of volatility in exchange rate movements is costly and may become unbearably high, in particular to those small and medium-sized enterprises (SMEs) engaged in foreign trade which have limited access to or have to pay high costs of hedging.

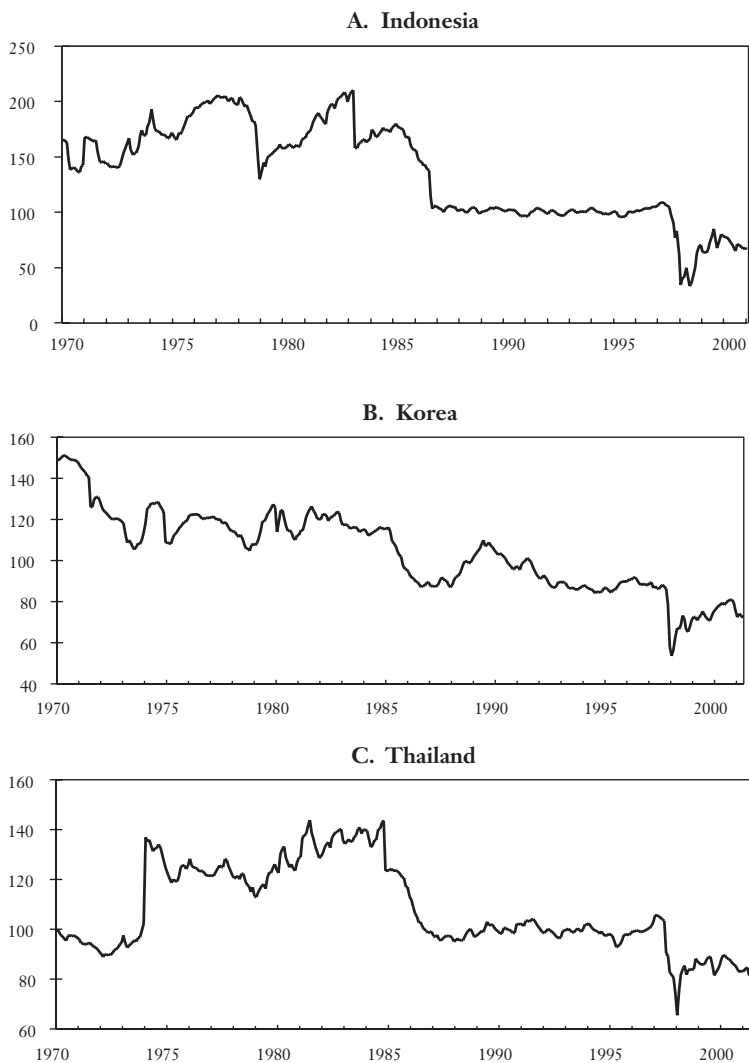
In the foreign exchange markets of many emerging market economies, market participants are limited. Branches of foreign banks operating in these economies often play the role of market makers, but they are small both in size and number. Many domestic banks are inexperienced in managing the risks involved in forward transactions. They are also constrained in their forward market operations, because they cannot obtain lines of credit from foreign banks that they need to serve as market makers. Since their credit ratings are often below the investment grade, the foreign banks tend to be conservative in their lending to the domestic banks. Furthermore, paucity of short-term financial instruments with different maturities available in domestic financial market limits the menu of forward contracts. For these reasons, domestic banks often have to square their foreign exchange positions and hence are reluctant to offer forward contracts to domestic firms.

In Korea, for example, only large industrial groups have been able to hedge their foreign exchange exposures through the forward exchange

² See Mussa *et al.* (2000) for a higher degree of volatility of the exchange rate in the flexible exchange rate system.

Figure 1 Real Exchange Rate Movement in the East Asian Crisis Countries, 1970-2000

(average 1990 = 100)



Note:

The real effective exchange rate of each country against the currencies of 19 industrial countries.

Source: JP Morgan website.

market. SMEs are required to provide collateral for forward cover, making the cost of hedging much higher than that of large firms. Most of the SMEs do not have a skilled staff capable of managing complex arrangements that forward market transactions require. Currency futures and options are available in some emerging market economies, but cannot be used as a means of hedging, because the markets for these instruments are small and illiquid. It takes time to develop the market infrastructure necessary to help stabilise the exchange rate. However, neither the public nor policymakers are prepared to wait until a more deeper and wider market develops. In the end, the policymakers are pressured or find justification to intervene.

The second reason is that large swings in the nominal exchange rate could cause misalignment of the real exchange rate. The misalignment may make it difficult to maintain export competitiveness at an appropriate level and therefore to support rapid growth of those economies oriented toward an export-led development strategy. As we discuss below, it will also complicate management of the current account.

With the deregulation of capital account transactions, capital flows have increasingly dominated changes in the nominal exchange rate in many emerging market economies: mobile capital in and out of these economies has largely determined the direction and scope of fluctuations and often resulted in an overshooting of nominal exchange rates. Under these circumstances, assuming that the parity condition holds in real term, there is no reason to believe that an equilibrium real exchange rate that satisfies the arbitrage relation for a given domestic real interest rate and expected real exchange rate will also be the rate that could maintain export competitiveness. Nor would it necessarily be the rate that will balance the current account.

In models of free floating and capital mobility with inflation targeting, such as the one developed by Svensson (2000), the current account is immaterial and does not raise any policy problems because current account imbalances are adjusted through lending to or borrowing from the international financial markets. This assumption may be incorrect and unrealistic. It may be incorrect, because the current account is also driven by exports and an import demand. Hence, the current account is not only affected by exchange rate changes resulting from capital movements, but also by the level of income. It may be unrealistic, because most emerging market economies integrating into the international financial markets cannot go on borrowing indefinitely: most of them are in reality subject to borrowing constraints.

To elaborate further on the current account issue, consider an exogenous increase in the foreign interest rate. In the Mundell-Fleming model

with a Phillips curve that assumes free floating and capital mobility and introduces inflation targeting, this change induces an increase in capital outflow. This outflow subsequently causes, other things being equal, a depreciation of the currency, which in turn builds up inflationary pressure, a gain of export competitiveness and an incipient surplus on the current account that was initially balanced. The expansionary effects of the depreciation results in an increase in output and domestic interest rate. Depending on the strength of the inflationary pressure, monetary authorities may move to tighten money market conditions to raise further the interest rate to meet a predetermined inflation target. These changes are likely to prevent any further weakening of the currency, but to have ambiguous effects on the current account. If the initial capital outflow and the subsequent changes in output and interest rate create expectations of further depreciation of the currency, then the current account may remain in surplus at a new equilibrium.

Conversely, an increase in capital inflows triggered by a fall in the foreign interest rate may cause an appreciation of the currency with a subsequent deterioration in the current account. The increase in capital inflows would therefore exert downward pressure on the interest rate and the level of output. The inflation targeting may then require an easing of monetary policy. As in the case of the increase in the foreign interest rate, however, these changes may not dissipate the pressure for appreciation and hence may not restore balance in the current account. As we discuss below in this section, if the deficit is large and expected to grow, foreign investors and lenders may view the imbalance as a sign of serious structural weaknesses and pull out their investments. When the withdrawal is combined with the herd behaviour in the international financial markets, it precipitates a major crisis. To the extent that maintaining a current account imbalance at a manageable level is an important policy objective, as it is in many emerging market and developing economies, policymakers of these economies are likely to intervene to stabilise the exchange rate.

Fischer (2001) proposes to use fiscal policy as an instrument for managing the current account when it is in a large deficit as a result of an appreciation of the real exchange rate. When monetary policy is locked in for inflation targeting, this means that fiscal policy is reserved for achieving either the current account or employment objectives. However, it is rather obvious that such a target-instrument approach could destabilise the Mundell-Fleming model with inflation targeting in the short run.³

³ In the long run, it is reasonable to assume that the capitalised value of present and future current account imbalances approaches to a constant level, if not zero. However, at this stage of debate, it is not clear how and whether the international financial markets could ensure such a long-run equilibrium in the absence of policy intervention.

Consider an increase in the foreign interest rate. Other things being equal, this will induce an outflow of capital, thereby depreciating the currency. The weaker currency generates a surplus on the current account while it builds up inflationary pressure through the increase in both the prices of imports and net exports. Monetary policy will be tightened up to reduce the inflationary pressure. On the other hand, fiscal policy will have to be expansionary to reduce the incipient current account surplus. Therefore, policymakers may find themselves in an unsustainable situation where they pursue contractionary monetary policy and expansionary fiscal policy at the same time.

A third reason for the reluctance of deregulating the foreign exchange market is the concern that in the free floating system changes in the exchange rates of the three major currencies – the US dollar, the euro, and the yen – could and in fact do augment the instability of both the nominal and real effective exchange rates of the East Asian currencies much more than otherwise. Most East Asian countries trade heavily with Japan and increasingly compete against Japanese exporters in the third markets. As a result, the yen-dollar exchange rate is an important variable in determining their real effective exchange rates. The large swings in the yen-dollar exchange rate are then translated into a high degree of instability of the real effective exchange rates of these economies.

For example, when the yen depreciates against the dollar, the other East Asian currencies appreciate in real effective terms even when their fundamentals do not change so long as their dollar exchange rates remain unchanged. In the absence of market intervention that engineers a depreciation vis-à-vis the dollar, these currencies will now be too strong. The Japanese economy then expands as their exports become relatively more competitive, while other East Asian economies experience a slowdown in their growth, generating divergence in the business cycle in Japan and the rest of East Asia. Policymakers of the other export-oriented East Asian economies will then be hard pressed for restoring export competitiveness. One might argue that foreign investors, knowing the possible divergence in the business cycle, may curtail or withdraw their investments in the East Asian countries once they observe a weakening of the yen, which subsequently forces a depreciation of the East Asian currencies vis-à-vis the dollar. However, there is as yet no strong empirical evidence supporting this type of adjustment.

A fourth reason is that in a world of free capital mobility the free floating exchange rate system could exacerbate rather than temper the boom-bust cycle associated with pro-cyclical capital flows: the system may not be able to guard against speculative disturbances as effectively as it is claimed to be. For example, consider a large increase in capital inflows in

an emerging market economy attracted by the prospect of a boom (a higher expected rate of return). The increase initially creates pressure for currency appreciation. However, the initial appreciation may not deter or reverse the inflows if it does not create expectations of depreciation and more so when foreign investors' perception of economic expansion does not change.

So long as this perception of foreign investors persists, both domestic and foreign investors are likely to come to believe that prices of assets will increase continuously.⁴ This expectation will in turn attract further foreign capital inflows. In the absence of central bank intervention, the inflows will then lead to monetary expansion and subsequently increases of the prices of equities and other assets including real property. The asset price increase keeps the currency strong, but the booming asset markets and domestic demand expansion do not generate any expectation of depreciation, hence resulting in further inflows, which in turn feed on speculation in the asset market.⁵

The appreciation of the currency will undermine the competitiveness of exports and shift resources to the non-tradable sector; eventually it will slow down export earnings and bring about a deterioration in the current account. It may take some time to observe such effects of appreciation on trade account. Only when the current account begins to show signs of a large deterioration, would currency depreciation expectations set in. Once the current account deficit is perceived to be too large to be sustainable, market expectations may shift and foreign portfolio investors and lenders may pull out their investment all at once. Such an exodus of foreign investors could easily provoke a major financial crisis as it did in Thailand during the 1997 crisis.⁶

In many East Asian countries, foreign portfolio investors were dominant forces in determining the direction of asset price movements in the 1990s.⁷ Many domestic investors tend to mimic the portfolio choices of foreign investors in the belief that foreign market participants have more accurate

⁴ For the sake of simplicity, it is assumed that the domestic bond market is underdeveloped and closed to foreign investors as it is in many emerging market economies.

⁵ In a floating regime, there is a tendency that a change in the spot rate leads to an almost identical change in the forward rate (Svensson, 1992). Williamson (2000) argues that this evidence implies a lack of market expectation that the exchange rate may return to an equilibrium level "within any time horizon relevant to market participants". Given this exchange rate behavior, the expected future exchange rate may simply appreciate also as the spot rate appreciates.

⁶ For a similar argument, see Furman and Stiglitz (1998).

⁷ There is also evidence that foreign investors have tended to augment fluctuation of asset prices in East Asian financial markets. At least, one empirical study shows that foreign investors are positive feedback traders and exhibit herd behavior. See Kim and Wei (1999).

information on and better capability of analysing market developments. This imitative behaviour of domestic investors could aggravate the instability of financial markets further.

A fifth reason is that depreciation may complicate inflation management. As far as inflation management is concerned, Velasco (2000) argues that the fear of floating is exaggerated because price stability could be sustained through introduction of inflation targeting as an appropriate nominal anchor in an economy open to international capital flows. However, as we have argued earlier, the open economy models developed by Svensson (1997, 2000) and McCallum (1999) suggest that inflation targeting could aggravate instability of the nominal exchange rate as it could conflict with the current account management. An obvious case is an exogenous terms of trade deterioration which will build up inflationary pressure. Faced with the prospect of rising inflation, central bank authorities may have to raise the domestic interest rate. The increase dampens domestic demand, but at the same time induces inflows of foreign capital, which will in turn lead to an appreciation of the currency. The stronger currency could then reinforce the effect of the terms of trade deterioration to offset the contractionary effect of a higher interest rate. The current account deficit will increase further. As noted earlier in this section, such a deficit, depending on its size and sustainability, could cause an outflow of capital and a speculative attack on the currency crisis as it did in East Asia in the 1997-98 period.

A higher degree of volatility of the nominal exchange rate also weakens the effectiveness of monetary policy as the instrument of inflation targeting, because it requires a higher risk premium for foreign investors to hold domestic currency denominated assets of emerging market economies. The domestic interest rate that satisfies the parity condition will then be higher than in less flexible exchange rate regimes. The high premium will limit the flexibility of monetary policy in adjusting the interest rate consistent with inflation targeting; in particular, it may create a downward rigidity in the interest rate so that authorities may not be able to ease monetary policy even when a deflationary tendency sets in. In particular, this potential rigidity means a limited applicability of the Taylor rule in emerging market economies.

Finally, a number of recent studies on exchange rate policies have shown that policymakers in developing and emerging market economies have been reluctant to let their exchange rates fluctuate freely for fear of a large depreciation. One of the policymakers' concerns with the free floating system is the effect of the currency mismatch of a large depreciation on the balance sheets of banks and corporations with a large amount of US dollar denominated debts (Calvo and Reinhart, 2000a and 2000b; Eichengreen

and Hausmann, 1999; Goldfajn and Olivares, 2000; and Mussa *et al.*, 2000). Another is that a large depreciation could downgrade their sovereign ratings and consequently reduce their accessibility to international financial markets (Goldfajn and Werlang, 2000; Calvo and Reinhart, 2000b; and Hausmann *et al.*, 1999).

3 Intermediate Regimes for East Asia

East Asian policymakers are under constant pressure to keep both the nominal and real exchange rates stable. Although they are often fighting a losing battle, the authorities continue to use monetary policy as the main tool for stabilising both the nominal exchange rate and inflation rate despite the fact that monetary policy fundamentally affects the nominal and not the real exchange rate (Fischer 2001).

Should East Asian countries then eschew the flexible exchange rate system in favour of other arrangements with less flexibility? Whatever its merits, East Asian countries would not find it practical or politically acceptable to move to a currency board. The currency board system faces an implementation problem of choosing the currency to peg to and the system completely lacks a domestic lender of last resort.

Intermediate arrangements such as crawling pegs with wider bands or the BBC (band, basket and crawl) have their share of problems. However, as long as policymakers of emerging market economies do not have confidence in the free floating regime, it is likely that they will continue to search for an intermediate regime. According to Williamson (2000), the basic rationale for searching for an intermediate regime may be “the fear that freely floating exchange rates are badly behaved, i.e. prone to losing touch with the fundamentals, as to become misaligned.” When the nominal exchange rates fluctuate as widely as they have in many emerging market economies, Williamson (2000) points out, the real exchange rates could be misaligned, and the East Asian countries may not be able to keep the competitiveness of their exports and to sustain the rapid growth they were able to achieve for more than a quarter century prior to the East Asian crisis.

As noted earlier, there is the widespread suspicion that the authorities of the three East Asian countries under consideration have intervened in the foreign exchange market. Although it is speculated that their purpose of intervention is primarily to sustain a relatively high rate of growth through promotion of exports, there is little information as to how, and to what extent they will intervene to influence the exchange rate movement. This lack of information on the modality of intervention has created a

considerable amount of uncertainty in the foreign exchange market, which could become a cause of instability of the exchange rate.

After the 1997 crisis, all three countries have been keen on generating current account surpluses to service their foreign debts and to increase their holdings of reserves. At the same time, these countries were forced to float their exchange rates and to maintain a highly liberalised capital account. For the reasons that are analysed in the preceding section, these policy reforms and the current account objective have contradicted each other. Since the crisis erupted in 1997, the authorities of the three countries have been reluctant to allow the nominal exchange rate appreciate over and above a certain level for the fear that such an appreciation may jeopardise their efforts at generating current account surpluses. As a result, it appears the authorities have had an intervention point in mind in managing exchange rate policy, although such a point in terms of the level of the nominal exchange rate is not well defined or known, if indeed it does exist. That is, exchange rate policy in these countries has been implemented without any reference to the parity or an equilibrium exchange rate or the intervention band. This mode of intervention is often classified as managed floating, which suffers from the failure of providing the market with the focus needed for stabilising speculation.

Because of this and other weaknesses of managed floating, Williamson (2000) proposes three new intermediate regimes that are less prone to crises by relaxing the obligation of intervention when the exchange rate moves out of a predetermined band. These new intermediate regimes include: the reference rate proposal in which the authorities do not have to defend a parity on an equilibrium exchange rate but are not allowed to push their currencies away from the parity; soft margins in which authorities target a moving or geometric average of current and past market exchange rates to remain within a predetermined band rather than targeting the market exchange rate to remain within a predetermined band at all times; and monitoring bands that require hands-off policy within a pre-announced band, but allow intervention without obligation to intervene once the rate goes out of the band to bring it back within.

Admittedly, the modified versions of an intermediate exchange rate regime may be more effective than old systems in reducing the vulnerability of emerging market economies to speculative attacks. Nevertheless, they may not be free from the traditional criticism of intermediate regimes in general that a reference rate or an equilibrium exchange rate can not be easily defined or estimated for the purpose of implementing exchange rate policy insofar as some of the economic fundamentals that presumably determine the exchange rate are not easily identifiable. Even when a set of fundamentals can be classified, in reality it may not be easy to observe

changes in these variables as a whole that may dictate changes in the equilibrium exchange rate around which a soft margin is to be established. This problem has become more complicated with the deregulation of capital account transactions. In the modified intermediate regimes, the band serves as a weak nominal anchor for the exchange rate. Fischer (2001) is questioning whether such an anchor is preferable to inflation targeting. More important, all of the new proposals for an operational intermediate regime have not been tested to determine their viability and are not necessarily immune to the criticisms of the old regimes.

In so far as the effectiveness of the new intermediate regimes remains to be proved, emerging market economies, before jumping to an intermediate regime, will be better advised if they attempt to find out to what extent volatility of their nominal exchange rates has increased since shifting to free floating and what the causes of the increase are if it has. One advantage of the flexible exchange rate system is that it allows the monetary authorities a measure of independence in conducting monetary policy to attain domestic policy objectives – low inflation with a high level of employment (the Taylor rule) – which may in turn help stabilise indirectly the nominal exchange rate. In subsequent sections, we will address these issues to examine further the viability of the floating exchange rate regime in East Asian economies.

4 Volatility of the Nominal Exchange Rate

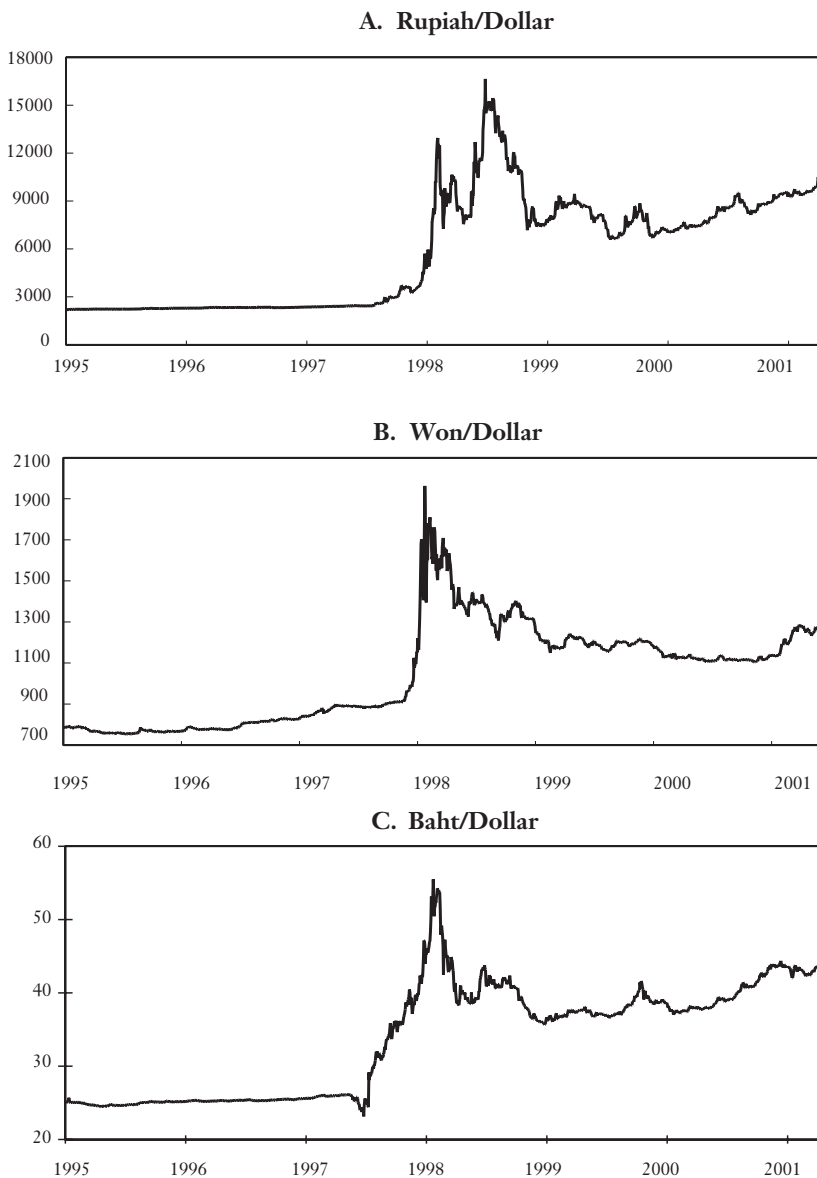
The regime shift to the free floating system led to an increase in the exchange rate volatility in Indonesia, Korea and Thailand. This can be easily found in Figure 2, which depicts the daily movement of the exchange rates of the local currency vis-à-vis the US dollar. In this section, we analyse the behaviour of the nominal exchange rates to determine to what extent volatility of the exchange rate increases in these countries since shifting to the free floating regime. For this purpose, we have estimated GARCH (generalised autoregressive conditional heteroskedasticity) variances of the daily changes in the exchange rates. Our empirical examination follows a GARCH (1,1) model that consists of the following two equations:

$$\Delta s_t = c_0 + \sum_{i=1}^m \alpha_i \Delta s_{t-i} + u_t, \quad u_t / \Omega_t - (0, b_t) \quad (1)$$

$$b_t = c_1 + \beta_1 u_{t-1}^2 + \beta_2 b_{t-1} + \varepsilon_t \quad (2)$$

where s_t is log of the exchange rate of a local currency per US dollar, and Δ is a first difference operator. u_t is an error term of the mean equation (1)

Figure 2 Daily Exchange Rate Movement in Indonesia, Korea and Thailand, 1995-2000



Source: Bloomberg.

and h_t is a conditional variance of u_t . Ω_t represents a set of information available at time t and ε_t is an error term of the variance equation. We have estimated equations (1) and (2) for the three East Asian countries which shifted to free floating in 1997 from a managed floating system (a fixed regime in the case of Thailand) and then compare the values of the conditional variances across the different exchange rate regimes.

Our sample period for the managed floating or fixed regime runs from May 1, 1995 to April 30, 1997, while the sample period for the free floating regime is two years from January 1, 1998 to December 31, 2000. We exclude the first few months of the 1997 crisis from our sample even though the exchanges rates were allowed to freely float in all three countries during this period, because the inclusion of the earlier period of crisis in the free floating regime could overstate the exchange rate volatility and then skew the results. The length of dependent lags in equation (1) follows the Schwarz information criterion.

The results of our estimation of equations (1) and (2) are reported in Table 1. They suggest that volatility of the exchange rate under the free floating system is much greater than under the managed floating regime in all three countries. In particular, the increase in volatility has been most conspicuous in Indonesia: among the three countries, Indonesia shows the largest increase in volatility of the exchange rate under the free floating regime. According to our estimation, the volatility of the free floating

Table 1 GARCH Estimation of Exchange Rate Volatility

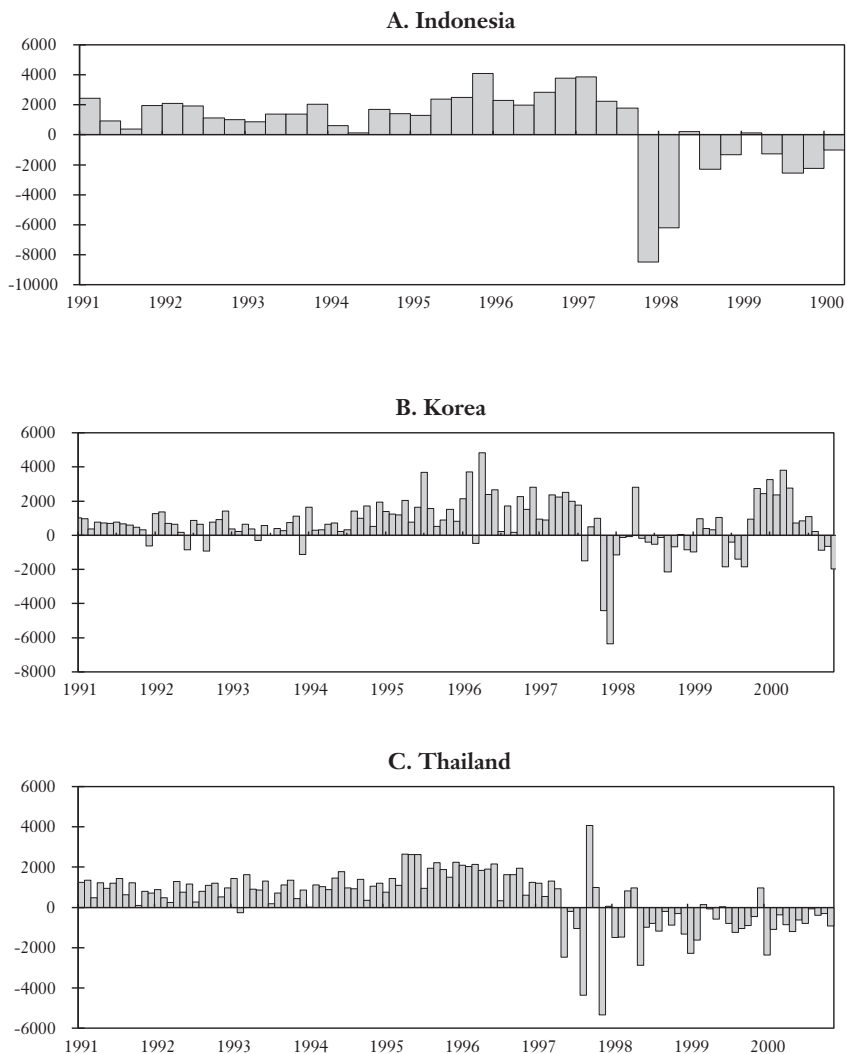
| Variables | Fixed or Managed Floating | | | Free Floating | | |
|------------------------|------------------------------------|------------------------------------|----------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| | Indonesia | Korea | Thailand | Indonesia | Korea | Thailand |
| c_0 | 1.77x10 ⁻⁴ * (3.501) | 2.25x10 ⁻⁴ (1.790) | 1.22x10 ⁻⁴ (1.350) | 0.001 (1.048) | -4.70x10 ⁻⁵ (-0.869) | 1.36x10 ⁻⁴ * (2.430) |
| Δs_{t-1} | -0.088** (-2.476) | -0.112** (-2.063) | -0.014 (-0.156) | 0.093 (1.605) | 0.124** (2.268) | -0.098* (-2.982) |
| c_1 | 4.14x10 ⁻⁷ * (4.875) | 8.82x10 ⁻⁷ * (6.242) | 3.59x10 ⁻⁷ (0.584) | 3.45x10 ⁻⁵ * (5.725) | 1.45x10 ⁻⁶ (3.905) | 4.28x10 ⁻⁷ *** (1.782) |
| u_{t-1}^2 | 0.150* (5.491) | 0.181* (4.374) | 0.150 (1.099) | 0.352* (6.024) | 0.364* (7.828) | 0.038* (7.861) |
| h_{t-1} | 0.600* (8.165) | 0.733* (16.972) | 0.600 (1.599) | 0.532* (10.344) | 0.602* (12.783) | 0.942* (208.944) |
| Average of \hat{h}_t | 2.14x10 ⁻⁶ | 9.24x10 ⁻⁶ | 1.27x10 ⁻⁶ | 2.77x10 ⁻⁴ | 2.18x10 ⁻⁵ | 2.47x10 ⁻⁵ |

Notes:

Sample period: fixed or managed floating regime, 1 May 1995 - 3 Apr 1997, free floating regime, 2 Jan 1999 - 31 Dec 2000.

*, **, *** Significant at, respectively, 1%, 5%, and 10% level.

Figure 3 Capital Inflows in East Asian Countries, 1991-2000
(millions of dollars)



Sources:
International Monetary Fund, *International Financial Statistics*, various issues.
The Bank of Korea website, and the Bank of Thailand website.

regime in Indonesia is about 115 times higher than that of the managed floating period. There has also been a marked increase in the exchange rate volatility in Thailand. Our results indicate that it increased by more than 20 times. Since the exchange rates in Indonesia and Thailand had been very stable prior to the East Asian crisis, these results are not surprising. In contrast, volatility of the nominal exchange in Korea has not increased as much as it has in the other two countries under the free floating regime, while it was the highest before the crisis among the three countries. Nevertheless, the volatility of the won-dollar exchange rate in the free floating system is still more than twice as large as it was during the managed floating system.

In addition to the exchange rate regime change, the higher volatility could in part be attributed to the increase in volatility of capital flows. Figure 3 depicts monthly net capital inflows to Korea and Thailand, and quarterly net flows to Indonesia since 1991. Prior to the financial crisis, both countries saw a sharp increase in capital inflows. After the crisis, in both Thailand and Indonesia, net capital inflows have been negative whereas in Korea they have been positive but displayed a great deal of volatility. Table 2 measures changes in volatility of net portfolio capital flows in terms of the ratios of the standard deviation of net portfolio capital flows of the managed and free floating exchange rate regimes. The ratios have risen in all three countries, notably in Thailand.

Table 2 Volatility of Portfolio Capital Flows

| Volatility Measures | Indonesia | Korea | Thailand |
|--------------------------|-----------|-------|----------|
| Absolute Rate of Changes | 2.5 | 8.6 | 14.7 |
| Absolute Changes | 3.1 | 2.2 | 0.9 |

Notes:

Figures indicate ratios of standard deviation of monthly portfolio capital flows in the fixed or managed floating regime to the corresponding statistics in the free floating regime.

Sample period: fixed or managed floating regime, May 1995 - April 1997; free floating regime, January 1999 - December 2000.

In the case of Indonesia, quarterly data are used due to the limited availability of monthly data.

One might argue that the increase in volatility of the nominal exchange rate is expected with the regime shift and is not excessive compared to that of other floating currencies. When compared with volatility of the yen, it is evident that the nominal exchange rates of the Thai baht and Korean won have been relatively more stable than the yen, although volatility of the Indonesian rupiah has been four times higher than that of the yen (see

Table 3 Relative Volatility of Exchange Rate in the Free Floating Regime

| | Indonesia | Korea | Thailand |
|---------------------|-----------|-------|----------|
| Relative Volatility | 4.41 | 0.35 | 0.45 |

Notes:

Figures indicate the ratio of local currencies' volatility to the Japanese yen's. Exchange rate volatility is measured by the GARCH model.

Sources:

International Monetary Fund, *International Financial Statistics*, various issues.
The Bank of Korea and the Bank of Thailand, websites.

Table 3). The East Asian experience therefore partly confirms the findings of Calvo and Reinhart (2000a and b) that the exchange rate variability in emerging market economies after moving to the floating regime has been much lower than that of the advanced floaters, raising the suspicion that the authorities of Thailand and Korea have heavily intervened in the foreign exchange market.

5 Foreign Exchange Market Intervention

A number of recent studies on exchange rate policies of emerging market economies suggest that Korea and, to a lesser extent, Thailand and Indonesia have continued to manage their dollar exchange rates, certainly much more actively than pure floaters would practice (Hernandez and Montiel, 2001). What are then the objectives of their interventions? There is some evidence that the monetary authorities have stepped into the market to moderate the movements of the nominal exchange rate when they display excessive volatility, although it is difficult to determine empirically whether they had a clear idea as to the appropriate level and tolerable volatility of the nominal exchange rate or whether they were trying to bring back the rate closer to the desired level.

A high degree of exchange rate volatility, which is often caused by speculative trading, in emerging market economies, creates large uncertainties as to expected exchange rate changes and hence makes business more costly, in particular when firms do not have access to hedging facilities. For this reason, many East Asian policymakers point out that they are under constant pressure by both exporters and importers to stabilise the nominal exchange rate. There are, however, other reasons for their intervention.

A *prima facie* evidence of market intervention is, of course, the massive accumulation of foreign exchange reserves through sterilisation of current

account surpluses. In Korea, the volume of foreign exchange reserves rose to 21 percent of GDP in 2000 from less than 7 percent in the mid-1990 (see Table 4). It was more than twice as large as the amount of short-term debt in the same year (see Table 5). Between 1998 and 2000, as shown in Table 4, reserve accumulation largely corresponded to increase in the current account surplus in Korea. Both Thailand and Indonesia also have witnessed a sharp increase in their foreign exchange reserves since the crisis. In 2000, reserves amounted to 26 percent of GDP in Thailand or were almost three times as high as the volume of short-term debt. In Indonesia, foreign exchange reserves rose to 15 percent of GDP in 2000, up from less than 10 percent in 1997, amounting to more than four-thirds of its short-term debt.⁸ These figures leave little doubt that reserve accumulation as a means of fending off future crises has been one of the most important reason for market intervention. Had the authorities abstained from market intervention, then the nominal exchange rate would have appreciated much more than otherwise, possibly choking off the ongoing recovery from the crisis. Therefore, the market intervention for mopping current account surpluses after the financial crisis has so far been tacitly accepted as a necessary part of the crisis management. Have the authorities also been engaged in other smoothing operations when they thought the country's export competitiveness was being eroded or price stability was threatened? The available evidence suggests that maintaining export competitiveness was an important reason for intervention.

Measures of market intervention developed by Bayoumi and Eichengreen (1998) and Glick and Wihlborg (1997) indicate that policy-makers both in Thailand and Indonesia have become more restrained in intervening in the market, whereas the Korean authorities have been as interventionist as they were before since shifting to a floating regime. It is normally expected that the regime shift would result in a substantial decrease in these indicators, and this development is not found in East Asia. As shown in Table 6, the two indices of market intervention fell slightly in both Thailand and Indonesia whereas they changed little in Korea between the two different exchange rate regimes.⁹ According to Bayoumi and Eichengreen (1998), the degree of intervention in advanced floater was on average less than 0.3 during the 1980s.

⁸ However, as can be seen in Table 5, the ratio of foreign exchange reserve to short-term debt in those three East Asian countries is still much lower than that of China and Taiwan, which successfully fended off the spillover effects of the Asian crisis in 1997-1998.

⁹ Bayoumi and Eichengreen index = $1 - \frac{SD(ds)}{SD(ds - dR)}$, Glick and Wihlborg index = $1 - \frac{SD(ds)}{SD(ds) + SD(dR)}$ where ds is the rate of change of the dollar exchange rate, dR is the ratio of changes in international reserves to a lagged monetary base, and SD denotes standard deviation.

Table 4 Foreign Exchange Reserves and Current Account Balance
(millions of dollars, percentages)

| Year* | Foreign Exchange Reserves | | Current Account Balance | |
|------------------|---------------------------|-------------------|-------------------------|-------------------|
| | amount | percentage of GDP | amount | percentage of GDP |
| <i>Indonesia</i> | | | | |
| 1996 | 24,024 | 10.6 | -8,532 | -3.8 |
| 1997 | 20,609 | 9.6 | -5,790 | -2.7 |
| 1998 | 22,713 | 23.0 | 4,102 | 4.2 |
| 1999 | 23,540 | 16.2 | 5,783 | 4.1 |
| 2000 | 22,326 | 15.0 | 7,992 | 5.3 |
| <i>Korea</i> | | | | |
| 1996 | 34,037 | 6.5 | -23,005 | -4.4 |
| 1997 | 20,368 | 4.2 | -8,167 | -1.7 |
| 1998 | 51,975 | 16.2 | 40,365 | 12.6 |
| 1999 | 73,987 | 17.8 | 24,477 | 5.9 |
| 2000 | 96,131 | 21.0 | 11,040 | 2.4 |
| <i>Thailand</i> | | | | |
| 1996 | 37,731 | 20.7 | -14,691 | -8.1 |
| 1997 | 26,179 | 17.3 | -3,021 | -2.0 |
| 1998 | 28,825 | 25.7 | 14,243 | 12.7 |
| 1999 | 34,063 | 27.5 | 12,428 | 10.0 |
| 2000 | 31,947 | 26.0 | 9,200 | 7.5 |

Note:

* End of period.

Sources:

International Monetary Fund, *International Financial Statistics*, various issues.
The Bank of Indonesia, the Bank of Korea and the Bank of Thailand, websites.

Table 5 Foreign Exchange Reserves / Short-Term Debt

| Period* | Indonesia | Korea | Thailand | China | Taiwan |
|----------|-----------|-------|----------|-------|--------|
| 1998.IV | 0.89 | 1.31 | 1.15 | 4.37 | 5.24 |
| 1999.II | 1.45 | 1.43 | 1.53 | 5.75 | 6.46 |
| 1999.IV | 1.33 | 1.69 | 2.23 | 7.75 | 6.24 |
| 2000.I | 1.38 | 2.19 | 2.21 | 7.45 | 6.53 |
| 2000.II | 1.32 | 2.06 | 2.32 | 7.28 | 7.43 |
| 2000.III | 1.35 | 2.14 | 2.72 | 7.63 | 7.33 |

Note:

* End of period.

Sources:

Bank for International Settlements, *Joint BIS-IMF-OECD-World Bank Statistics on External Debt*.

International Monetary Fund, *International Financial Statistics*, various issues.
The Central Bank of China, website.

Using high frequency data it has also been shown that the Korean authorities have been active in managing the won-dollar exchange rates (Park, Chung, and Wang, 2001). Using the intra-day data over the 10 days from September 10 to 20 in 1999, the authors show that any large change in the nominal exchange rate disappeared within a few minutes. Unlike in other free floating regimes, the intra-day exchange rate movements did not show any volatility clustering, suggesting that the Korean authorities were actively managing the nominal exchange rate.

Table 6 Degree of Foreign Exchange Market Intervention

| Regime | Indonesia | | Korea | | Thailand | |
|---------------------------|-----------|------|-------|------|----------|------|
| | B-E | G-W | B-E | G-W | B-E | G-W |
| Fixed or Managed Floating | 0.92 | 0.91 | 0.80 | 0.77 | 0.95 | 0.94 |
| Free Floating | 0.66 | 0.75 | 0.80 | 0.81 | 0.74 | 0.76 |

Note:

B-E and G-W indicate measures suggested by Bayoumi and Eichengreen (1998) and Glick and Wihlborg (1997). See Section 5, footnote 9, for the measures.

The available pieces of evidence presented above therefore demonstrate that like many other emerging market economies, Korea, Thailand, and Indonesia have occupied the hollow middle of the exchange rate regimes by moving to an intermediate solution. One important question to be addressed is then: what have been the objectives of market intervention in these countries? The analysis of intra-day high-frequency data suggests that market intervention has been geared to stabilise high-frequency exchange rate movements in Korea. There may be other possible reasons for managing the exchange rates of local currency vis-à-vis the US dollar in the three countries.

Smoothing-out operations for high frequency exchange movements may be necessary after a crisis, when agents' expected exchange rates might become overly sensitive to the exchange rate they observe in the market. Under such a circumstance, the authorities' smoothing-out operations could help market participants establish their expectations on the future movements of both the real and nominal exchange rates by minimising the effect of noise trading (Hernandez and Montiel, 2001).

If stabilising the nominal exchange rate is the main objective, then Hernandez and Montiel (2001) argue that the exchange rate smoothing would lead to substantial fluctuations in the stock of foreign reserves around a certain level that is deemed to be appropriate for intervention and

achieving other objectives. However, they do not find any evidence that Korea and other East Asian crisis-hit countries have used their reserves to conduct smoothing-out operations; instead, the stocks of reserves have exhibited a systematic tendency to increase over time in these countries.

The three crisis countries may not have been concerned about stabilising their dollar exchange rates as much as they have been about stabilising either the nominal or real effective exchange rate. These countries may have had good reasons to peg their exchange rates to or to manage them against a basket of the currencies of the countries with which they have established extensive trade relations.¹⁰ If this is the case, it is likely that the US dollar, the Japanese yen and the euro are the major components of the baskets. The Korean authorities, for example, would manage the won-dollar exchange rate to offset fluctuations in the US dollar-yen or the US dollar-euro bilateral exchange rates. When the yen depreciates vis-à-vis the US dollar, as it has in recent periods, one would expect an intervention to engineer a depreciation of the won against the US dollar so that the nominal effective exchange rate would remain relatively stable. Hernandez and Montiel attempted to find evidence that any of the East Asian countries were managing their bilateral exchange rates vis-à-vis the US dollar to stabilise a nominal effective exchange rate, but they failed.

Since Korea and other crisis-hit countries in East Asia have followed export-led development strategies and are likely to continue to rely on exports for growth, one might conjecture that policymakers have intervened in the foreign exchange market to stabilise the real effective exchange rates. Once again, Hernandez and Montiel do not find any evidence that may support the conjecture. If the authorities were as sensitive to maintaining export competitiveness as they are often claimed to be, then one might conjecture that they would intervene more actively to reverse the exchange rate movement when the exchange rate appreciates than when it depreciates. To examine this possibility, we have estimated the volatility of the exchange rates separately for days of depreciation and appreciation. If they are more likely to step in when it appreciates, then it can be expected that the volatility of the exchange rate may be lower when it appreciates than otherwise. Our results shown in Table 7 support our hypothesis on the asymmetric pattern of intervention in the case of Korea. The volatility of the daily exchange rate of the Korean won is significantly lower during the days of appreciation compared to those of depreciation. However, we could not find a similar result for Indonesia and Thailand.

10 Hernandez and Montiel (2001) speculate that the East Asian countries may have preferred a basket pegging to fixing to the US dollar because the importance of the US as their trading partner has declined and they may want to use the exchange rate as a nominal anchor.

Table 7 Volatility of the Exchange Rate for Depreciation and Appreciation

| Classifications | Indonesia | Korea | Thailand |
|-----------------------------|-----------|-------|----------|
| Depreciation (σ_A) | 1.07 | 0.34 | 0.36 |
| Appreciation (σ_B) | 1.17 | 0.28 | 0.38 |
| σ_A / σ_B | 0.91 | 1.21* | 0.95 |

Notes:

Figure indicates standard deviation of daily changes in exchange rates.

* Reject the null hypothesis of $\sigma_A = \sigma_B$ at 5% level.

Sample period: 2 Jan 1999 - 31 Dec 2000.

While Hernandez and Montiel do not find any evidence that the authorities of the three countries were intervening to stabilise either the nominal or real effective exchange rates, we find that movements of the dollar exchange rates of the three countries have been rather sensitive to changes in the yen-dollar exchange rate. To measure this sensitivity, we have estimated the following autoregressive equation using the monthly data from January 1999 to April 2001.

$$\Delta s_t^i = c + \beta_1 \Delta s_{t-1}^i + \beta_2 \Delta yen_t + \beta_3 \Delta yen_{t-1} + \varepsilon_t^i \quad (3)$$

where s_t^i is the log of the dollar exchange rate of the country i at time t , and yen_t is the yen-dollar exchange rate at time t . If the three countries are concerned about losing their export competitiveness vis-à-vis Japan, β_2 would be positive. The results of this estimation are reported in Table 8. They show that β_2 is positive and statistically significant in Korea. Correlation coefficients between the real effective exchange rate of Japan and those of the three countries also confirm our findings in Table 8. The coefficient between Korea and Japan is very high at 0.92, whereas it is relatively low in the case of both Thailand and Indonesia (see Table 9). These results indicate that Japan is a more important export competitor in both East Asian and other markets to Korea than it is either to Thailand or Indonesia.

In summary, what were the Korean policymakers trying to achieve in intervening in the foreign exchange market? The empirical evidence provided by our analysis (Park, Chung, and Wang, 2001) and Hernandez and Montiel (2001) suggests that their objectives have been: (i) to stabilise the won-dollar exchange rate by smoothing out fluctuations caused by noise-trading; (ii) to resist appreciation of the real effective exchange rate after the crisis; and (iii) to build a reserve buffer to financial vulnerabilities the economy may have to face while undergoing financial and corporate

Table 8 Effects of Changes in Yen-Dollar Exchange Rate

| Independent Variables | Indonesia | Korea | Thailand |
|-----------------------|------------------------------------|--------------------|--------------------|
| | Dependent Variable: Δs_t^i | | |
| C | 0.012 (0.998) | 0.002 (0.737) | 0.006 (1.634) |
| Δs_{t-1}^i | 0.229 (1.031) | 0.429 (2.630)** | 0.291 (1.425) |
| Δyen_t | -0.343 (-0.693) | 0.443 (3.430)* | -0.027 (-0.189) |
| Δyen_{t-1} | 0.005 (0.010) | -0.019 (-1.280) | -0.042 (-0.301) |
| R^2 | 0.05 | 0.44 | 0.09 |
| D.W. | 1.63 | 1.74 | 1.83 |

Notes:

Figures in parenthesis indicate t-values.

*, ** Significant at, respectively, 1% and 5% level.

Sample period: Jan 1999 - Apr 2001.

Table 9 Correlation of Real Effective Exchange Rates

| | Indonesia-Japan | Korea-Japan | Thailand-Japan |
|--|-----------------|-------------|----------------|
| | 0.56 | 0.92 | 0.50 |

Note:

Figures indicate monthly correlation coefficients of real effective exchange rates between Jan 1999 - Apr 2001.

Source: JP Morgan website.

restructuring. Although Hernandez and Montiel de-emphasise the significance of the first objective, in a country like Korea where many firms in the trade sector have a limited access to hedging facilities, the authorities have been under constant pressure to moderate fluctuations in the won-dollar exchange rate (Park, Chung, and Wang, 2001).

6 Monetary Independence

The question of whether free floating has increased autonomy in the conduct of monetary policy will be examined in this section. Edwards and

Savastano (1998) examined the Mexican case and found that the Bank of Mexico systematically adjusted its monetary policy in response to changes in the exchange rate even during the free floating regime. In contrast, E. Borensztein *et al.* (2001) examined the effects of changes in the US interest rate on local interest rates, and found that the magnitude of the effects is much smaller under the free floating regime than the currency board system, indicating a higher degree of monetary autonomy with a more flexible exchange rate regime. Their analysis includes Mexico, Singapore, Australia, Canada, and New Zealand for the floating system, and Hong Kong and Argentina for the currency board system. Extending their approach to the panel data of 47 countries, Goldfajn and Olivares (2000) found a similar result.

In this section, we empirically examine whether the introduction of a free floating system has affected the degree of monetary independence in Indonesia, Korea and Thailand following an approach similar to that of Borensztein *et al.* (2001). Our empirical model is specified as:

$$\Delta r_t^i = c + \alpha \Delta f_t + \varepsilon_t^i \quad (4)$$

where r_t^i is the interest rate of country i at time t , and f_t is a foreign shock variable. The magnitude of foreign shocks is denoted by Δf_t . The foreign shocks examined in this study are changes in the US interest rate, the log of the US stock prices, and the log of the yen-dollar exchange rate.

In our examination, it will be assumed that the effects of foreign shocks are transmitted through arbitrage dictated by the uncovered interest parity (UIP). Even though the bond markets are not well developed and incompletely open to foreign investors in all three countries, the UIP could hold if borrowing from international financial markets by domestic residents is permitted.

The UIP condition is:

$$r^i = r^f + (E^e - E) / E \quad (5)$$

where r^f is the foreign interest rate (US interest rate), E is the exchange rate of domestic currency against the US dollar, and E^e is the expected exchange rate.

As for the effects of foreign shocks on domestic financial variables, one would expect:

(i) When the US interest rate rises, domestic firms and financial institutions tend to borrow more from domestic sources than from the international financial markets. They will also try to substitute domestic currency debts for dollar-denominated obligations. Consequently, the domestic interest rate rises and the currency depreciates.

(ii) In response to the rise in the US stock price, the domestic stock price is also expected to rise, and market participants are likely to speculate that the increase in the expected returns of domestic stocks will induce more capital inflows. Thus, E^e appreciates and hence the dollar-denominated borrowing will be less costly. The shift to the foreign currency borrowing leads to a fall in the domestic interest rate, and the local currency appreciates.

(iii) When the Japanese yen depreciates against the dollar, E^e depreciates because the current account is expected to deteriorate due to the loss of export competitiveness caused by the weaker yen, making the dollar denominated borrowing more costly. The domestic interest rate then rises, and the local currency depreciates.

In an economy with the flexible exchange rate system, foreign shocks are expected to be absorbed through changes in the exchange rate. Thus, the effects of the shocks on domestic interest rates would be weaker when the exchange rate floats freely than when it is either fixed or managed. That is, Δf_t would be statistically significant, in the fixed or managed floating regime, whereas its significance may disappear in the free floating regime or the absolute value of its coefficient will be smaller even though it remains significant. The statistical insignificance implies a higher degree of monetary autonomy. If the effects of foreign shocks are transmitted to the domestic financial markets, it is expected that $\alpha > 0$ for the US interest rate and the yen-dollar rate, and $\alpha < 0$ for the US stock price.

The sample period for equation (4) for the fixed or managed floating system runs from May 1, 1995 to April 30, 1997 and for the free floating regime from November 1, 1998 to October 31, 2000. The earlier period of the 1997 crisis is excluded to avoid skewness of the results.

In our empirical investigation, we have selected only those days when large foreign shocks occurred instead of using the entire set of daily observations in the sample period. Sample points chosen are the 50 largest changes in f_t in the two different exchange rate regimes: that is, our sample includes only 50 days of largest absolute changes in f_t . Accordingly, sample observations actually used in estimating equation (4) are not in a consecutive time sequence. This would mitigate the problem arising from the simplicity of equation (4). We assume that if the domestic interest rates vary in a consistent manner on the days of large foreign shocks, changes on these particular days are related to the foreign shocks rather than other factors that are not considered in equation (4).

The variables representing foreign shocks are the US Federal Funds rate, the Dow Jones Industrial Index, and the closing yen-dollar rate on the New York market. For domestic interest rates of the three East Asian countries, this study uses their call money market rates.

Table 10 Summary of Daily Change in Foreign Stocks
(percentages)

| Statistics | Fixed or Managed Floating | | Free Floating | |
|---|---------------------------|--------------------|-------------------------|--------------------|
| | 50 Largest observations | Full sample period | 50 Largest observations | Full sample period |
| <i>Absolute Changes in US Interest Rate</i> | | | | |
| Average | 0.79 | 0.17 | 0.42 | 0.1 |
| Standard Deviation | 0.50 | 0.27 | 0.22 | 0.1 |
| <i>Absolute Changes in Yen/Dollar Rate</i> | | | | |
| Average | 0.67 | 0.19 | 0.75 | 0.2 |
| Standard Deviation | 0.29 | 0.20 | 0.22 | 0.2 |
| <i>Absolute Changes in US Stock Prices</i> | | | | |
| Average | 0.72 | 0.24 | 1.06 | 0.4 |
| Standard Deviation | 0.20 | 0.21 | 0.32 | 0.3 |

Note:

Sample period: fixed or managed floating regime, 1 May 1955 - 3 Apr 1997; free floating regime, 1 Nov 1998 - 31 Oct 2000.

Source: Bloomberg.

Table 10 summarises the three sets of observations of the foreign shocks chosen for the study. It can be seen that the averages of 50 largest shocks are three or four times larger than that of the entire sample. The standard deviations of the sets observation of the three variables are also no less than those of the entire samples. This indicates that the 50 largest observations for each foreign shock variable can be separated out from the others in the sample period.

Any changes in f_t (foreign shocks) may affect the domestic interest rates with a lag. In order to account for the existence of the lag, equation (4) is modified to include lagged terms of f_t .

$$\Delta r_{t+k}^i = c + \alpha \Delta f_t + \sum_{j=1}^k \beta_j \Delta f_{t+j} + \varepsilon_t^i \quad (6)$$

Equation (6) specifies that a foreign shock observed at time t influences the domestic interest rate at $t+k$. It should be noted that large other foreign shocks that may occur between $t+1$ and $t+k$ could also affect the domestic interest rate at $t+k$. In order to estimate α properly, it is then important to

capture the effects of large foreign shocks at time $t + j$ subsequent to observation of a large foreign shock at time t . For this purpose, equation (6) introduces another variable $\Delta f'_{t+j}$, which takes a value other than zero only when a large shock occurs at time $t+j$. If there is no large foreign shock at $t + j$, then $\Delta f'_{t+j} = 0$.

Equation (6) can also be used to detect the presence of various effects of foreign shocks. For instance, when $k = 1$, β_1 captures the contemporaneous effect on the domestic interest of changes in the foreign shock variable for two consecutive days. When $k = 2$, β_1 gauges one day lagged effect of a change in f_t for two consecutive days. Similarly, β_2 measures the contemporaneous effect of a large change in f_t that follows two days later after an initial foreign shock was observed at time t . If $\Delta f'_{t+j}$'s are statistically significant in equation (6) whereas Δf_t is not in equation (4), this means that domestic interest rates respond to foreign shocks only when the shocks are sustained. The estimation results of equations (4) and (6) are reported in Table 11. Our study estimates equation (6) only for $k=1$ and 2.

In equation (6), the coefficients of Δf_t are positive as expected in both Korea and Thailand when foreign shocks are represented by changes in the US Federal Funds rate. In the free floating exchange rate system, the estimates of α are smaller than they were during the managed or fixed exchange rate period, but Δf_t is not significant in either country. None of the independent variables in equation (6) is statistically significant even at the 10 percent level, indicating that the lagged effects of any exogenous external shock measured by the US Federal Funds rate on the domestic interest rate are negligible.

When the foreign shock variable is represented by the US stock price index, it has no measurable effect on the domestic interest rate in the free floating regime in all three countries. However, a large change in the US stock price produces predictable lagged effect on the domestic interest in the managed floating system in Korea. In the case of Thailand, the estimation results show that large changes in f_t that occur every two other days exert significant negative effects on the domestic interest rate under a fixed exchange rate system as the model predicts. Lagged effects of the US stock price changes on the call rate in Indonesia are also detectable, but the signs of β_1 and β_2 are shown to be positive against the model's prediction.

After the three countries moved to the free floating regime in late 1997, the results of estimation of both equations (4) and (6) suggest that changes in the US stock price index have had little effect on the domestic interest rates of these countries. None of the independent variables included in equations (4) and (6) appears to have any explanatory power. However, these results should not be taken at their face value, because stock prices of these countries do move rather quickly in response to changes in the Dow

Table 11 Effects of Foreign Shocks on Domestic Interest Rates

| Independent Variables | A. Shocks from US Interest Rates | | | | | |
|-----------------------|----------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | Fixed or Managed Floating | | | Free Floating | | |
| | Δr_t | Δr_{t+1} | Δr_{t+2} | Δr_t | Δr_{t+1} | Δr_{t+2} |
| <i>Indonesia</i> | | | | | | |
| C | -0.296 (-1.189) | 0.200 (0.834) | 0.205 (0.583) | 0.007 (0.052) | -0.147 (-1.050) | -0.152 (-0.956) |
| Δf_t^c | -0.404 (-1.517) | -0.270 (-0.973) | 0.342 (0.792) | -0.221 (-0.798) | 0.361 (1.117) | 0.222 (0.599) |
| $\Delta f'_{t+1}$ | | -0.547 (-1.191) | -0.104 (-0.152) | | -0.095 (-0.209) | 0.544 (1.055) |
| $\Delta f'_{t+2}$ | | | 0.352 (0.275) | | | 0.008 (0.007) |
| <i>Korea</i> | | | | | | |
| C | -0.221 (-2.483)* | -0.048 (-0.534) | -0.116 (-1.218) | -0.012 (-1.044) | 0.006 (0.353) | -0.011 (-0.748) |
| Δf_t^c | 0.094 (0.991) | -0.031 (-0.296) | -0.079 (-0.680) | 0.015 (0.643) | 0.003 (0.075) | -0.034 (-0.946) |
| $\Delta f'_{t+1}$ | | 0.217 (1.261) | -0.219 | | 0.020 (0.386) | 0.010 (0.197) |
| $\Delta f'_{t+2}$ | | | 0.336 (0.974) | | | 0.027 (0.272) |
| <i>Thailand</i> | | | | | | |
| C | -0.341 (-1.043) | -0.205 (-0.580) | -0.296 (-1.203) | -0.008 (-0.109) | -0.073 (-1.190) | 0.167 (-0.367) |
| Δf_t^c | 0.511 (1.460) | -0.362 (-0.887) | -0.256 (-0.852) | 0.227 (1.509) | -0.046 (-0.324) | -0.039 (-0.060) |
| $\Delta f'_{t+1}$ | | 0.508 (0.753) | -0.350 (-0.738) | | 0.059 (0.296) | -0.089 (-0.069) |
| $\Delta f'_{t+2}$ | | | 0.129 (0.145) | | | |

Table 11 (continued)

| Independent Variables | B. Shocks from US Stock Prices | | | | | |
|-----------------------|--------------------------------|---------------------|-----------------------|---------------------|--------------------|--------------------|
| | Fixed or Managed Floating | | | Free Floating | | |
| | Δr_t | Δr_{t+1} | Δr_{t+2} | Δr_t | Δr_{t+1} | Δr_{t+2} |
| <i>Indonesia</i> | | | | | | |
| C | 0.242 (0.683) | -0.051 (-0.198) | -0.276 (-1.108) | -0.006 (-0.060) | 0.010 (0.354) | -0.052 (-0.613) |
| Δf_t^c | 23.008 (0.487) | 28.888 (0.859) | -20.611 (-0.628) | -0.255 (-0.030) | 1.836 (0.717) | -6.617 (-0.866) |
| $\Delta f'_{t+1}$ | | 234.68 (2.062)** | 99.268 (0.898) | | 0.916 (0.202) | 0.558 (0.041) |
| $\Delta f'_{t+2}$ | | | 153.548 (1.929)*** | | | 1.765 (0.078) |
| <i>Korea</i> | | | | | | |
| C | -0.054 (-0.830) | 0.033 (0.053) | 0.019 (0.286) | 0.022 (1.716)*** | -0.012 (-1.182) | -0.003 (-0.288) |
| Δf_t^c | 2.548 (0.294) | 2.897 (0.414) | -17.707 (-2.042)** | -1.401 (-1.219) | -0.041 (-0.046) | 0.806 (0.821) |
| $\Delta f'_{t+1}$ | | -10.135 (-0.428) | -23.702 (-0.812) | | -0.038 (-0.024) | -0.394 (-0.225) |
| $\Delta f'_{t+2}$ | | | 12.858 (0.611) | | | -3.510 (-1.213) |
| <i>Thailand</i> | | | | | | |
| C | -0.164 (-0.530) | 0.244 (0.705) | -0.055 (-0.247) | -0.168 (-0.889) | -0.003 (-0.074) | -0.040 (-0.819) |
| Δf_t^c | -36.372 (-0.880) | 17.372 (0.381) | 40.915 (1.385) | 17.655 (-1.082) | -1.943 (-0.471) | 5.698 (1.303) |
| $\Delta f'_{t+1}$ | | 90.548 (0.587) | -83.390 (-0.839) | | 5.588 (0.771) | -4.378 (-0.562) |
| $\Delta f'_{t+2}$ | | | -175.749 (-2.453) | | | 0.823 (0.530) |

Table 11 (continued)

| C. Shocks from Yen-Dollar Exchange Rates | | | | | | |
|--|---------------------------|-----------------------|----------------------|-------------------|-----------------------|----------------------|
| Independent Variables | Fixed or Managed Floating | | | Free Floating | | |
| | Δr_t | Δr_{t+1} | Δr_{t+2} | Δr_t | Δr_{t+1} | Δr_{t+2} |
| <i>Indonesia</i> | | | | | | |
| C | 0.143 (0.622) | 0.350 (0.933) | -0.203 (-0.630) | 0.035 (0.355) | -0.159 (-1.328) | 0.031 (0.230) |
| Δf_t | -12.797 (-0.405) | -12.275 (-0.234) | 74.783 (1.689) | 8.246 (0.649) | -37.084 (-2.395)** | 17.167 (0.950) |
| $\Delta f'_{t+1}$ | | 33.840 (0.319) | -146.230 (-1.640) | | 22.691 (0.583) | -181.296 (-4.104) |
| $\Delta f'_{t+2}$ | | | -79.048 (-0.809) | | | -56.185 (-0.804) |
| <i>Korea</i> | | | | | | |
| C | -0.059 (-0.798) | 0.034 (-0.311) | 0.010 (-0.853) | 0.009 (0.660) | -0.004 (-0.288) | -0.005 (-0.437) |
| Δf_t | 1.024 (0.101) | -21.596 (-1.409) | -8.222 (-0.503) | 1.246 (0.685) | -1.792 (-0.985) | 0.488 (0.315) |
| $\Delta f'_{t+1}$ | | 20.060 (0.648) | 0.080 (0.002) | | -1.539 (-0.336) | 1.098 (0.290) |
| $\Delta f'_{t+2}$ | | | 3.225 (0.089) | | | 3.142 (0.524) |
| <i>Thailand</i> | | | | | | |
| C | -0.217 (-1.940) | 0.128 (0.514) | 0.032 (0.258) | 0.195 (0.934) | -0.161 (-0.835) | -0.009 (-0.270) |
| Δf_t | 19.361 (1.217) | -40.598 (-2.264)** | 37.032 (2.122) | 10.715 (0.401) | -13.292 (-0.532) | 3.269 (0.752) |
| $\Delta f'_{t+1}$ | | 36.247 (1.009) | -46.885 (-1.335) | | -29.806 (-0.475) | 16.350 (1.538) |
| $\Delta f'_{t+2}$ | | | 1.943 (0.050) | | | 16.328 (0.971) |

Notes:

Figures in parenthesis indicate t-values.

** , *** Significant at respectively 5% and 10% level.

Jones Industrial Index. The statistical significance under the free floating regime reported in Table 11 therefore may reflect the segmentation of the financial system between the shock and other financial markets in the countries under consideration.

Our estimation results do not change substantially when the yen-dollar exchange rate is used as an external shock variable. In the case of Korea, estimated equations (4) and (6) do not provide any evidence as to whether there has been any increase in monetary autonomy after adopting the free floating system. One could detect a one-day lagged effect in Indonesia during the free floating regime period, but β_1 in equation (6) has a wrong sign. Only the experience of Thailand partly confirms our hypothesis: the lagged effects of changes in the yen-dollar rate were substantial when the exchange rate was pegged to the dollar, but they disappeared with the deregulation of the foreign exchange market.

In summary, our empirical estimation has failed to establish whether and to what extent the effects of changes in the US interest rate are transmitted to the domestic financial markets of the three East Asian countries in either the free floating or managed floating system. Although there is evidence suggesting that the linkage between changes in the US stock prices and the domestic interest rates in East Asia has weakened since these countries moved to the free floating regime, this result must be interpreted with caution.

Fluctuations in the yen-dollar exchange rate have had weaker effects on the interest rate in Thailand since it adopted the free floating system. However, a similar shift in the exchange rate regime does not appear to have increased monetary autonomy in Korea. In Indonesia, the shift in fact has amplified the effects of changes in the yen-dollar exchange rate on the domestic economy. In view of the preceding discussion, there is no strong evidence indicating that monetary independence has increased in the three East Asian countries since they moved to the flexible exchange rate system.

7 Concluding Remarks

It appears that policymakers of Indonesia, Thailand, and Korea have legitimate concerns about the workings of the free floating exchange rate system. They adopted the system with the expectation that it would lessen their vulnerabilities to speculative attack after the crisis broke out in 1997. It is perhaps too early to assess the macroeconomic performance of East Asian floaters, in particular whether the free floating exchange rate system has speeded up recovery from the crisis or whether it has made these

emerging market economies less susceptible to currency crises. The available evidence does not necessarily suggest that the system will be more effective in preventing future crises in East Asian emerging market economies than other exchange rate regimes.

East Asian countries' experiences with the free floating exchange rate system suggest that the large swings in the nominal exchange rate have undermined viability of a macroeconomic model which relies on inflation targeting as the base of monetary policy. Such a model ignores current account imbalances on the ground that they are automatically resolved through capital account transactions. In many emerging market economies, such an automatic mechanism of adjustment does not exist. If fiscal policy is used to correct a large current account deficit, it conflicts with inflation targeting.

While our empirical study admittedly suffers many limitations, it does not suggest that the three countries have attained a higher degree of monetary independence: the free floating exchange rate system does not appear to play a shock-absorber role as it is expected. More importantly, given various market imperfections and prevalence of noise trading, the floating rate system may lead to a serious misalignment of the real exchange rate, making it difficult to maintain export competitiveness of the East Asian economies. This is the most constraining factor as far as the adoption of a free floating exchange rate system in East Asia is concerned, in particular when most of the East Asian countries have relied on export expansion as the engine of growth and they continue to do so.

Does our analysis mean that alternative macroeconomic policy frameworks such as floating with capital control or intermediate regimes with capital mobility may be more appropriate to emerging market economies? Can the inflation targeting system serve as a nominal anchor in emerging market economies? Before responding to these questions it is perhaps necessary to examine further the progress and prospects of regional economic integration in East Asia. If indeed there are economic and political forces that are integrating East Asian countries into a single regional entity *à la* the EU, then one might argue that these countries should consider moving to an intermediate regime with or without pegging to a common basket of currencies to pave the way for the eventual creation of a common currency area in East Asia.

References

Bayoumi, T. and B. Eichengreen (1998), "Exchange Rate Volatility and Intervention: Implications of the Theory of Optimum Currency Areas",

- In: *Journal of International Economics*, Vol. 45, pp. 191-209.
- Blinder, A. (1999), "Eight Steps to a New Financial Order", In: *Foreign Affairs*, Vol. 78, September/October, pp. 50-55.
- Borensztein, E., J. Zettelmeyer, and T. Philippon (2001), "Monetary Independence in Emerging Markets: Does the Exchange Rate Regime Make a Difference?", IMF Working Paper 01/1, International Monetary Fund, Washington D.C.
- Calvo, G. A. and C. Reinhart (2000a), "Fear of Floating", mimeo, University of Maryland.
- (2000b), "Fixing for Your Life", mimeo, University of Maryland.
- Dornbusch, R. (1999), "The Target Zone Controversy", mimeo, February.
- Edward, S. and M. Savastano (1998), "The Morning After: The Mexican Peso in the Aftermath of the 1994 Currency Crisis", NBER Working Paper No. 6516.
- Eichengreen, B. and R. Hausmann (1999), "Exchange Rate and Financial Fragility", NBER Working Paper No. 7418.
- Feldstein, M. (1998), "Refocusing the IMF", In: *Foreign Affairs*, Vol. 77, pp. 20-33.
- Fischer, S. (2001), "Exchange Rate Regimes: Is the Bipolar View Correct?", Distinguished Lecture on Economics in Government delivered at the meetings of the American Economic Association, New Orleans, 6 January.
- Frankel, J. (1999), "No Single Currency Regime is Right for All Countries or At All Times", NBER Working Paper No. 7338.
- Furman, J. and J. Stiglitz (1998), "Economic Crises: Evidence and Insights from East Asia", In: *Brookings Papers on Economic Activity*, 1998:2, pp. 1-136.
- Glick, R., and C. Wihlborg (1997), "Exchange Rate Regimes and International Trade", In: B. Cohen (ed.), *International Trade and Finance: New Frontiers for Research*, Cambridge University Press, Cambridge.
- Goldfajn, I. and G. Olivares (2000), *Can Flexible Exchange Rates still Work in Financially Open Economies?*, Studies on International Monetary and Financial Issues for the Group of Twenty Four.
- Goldfajn, I. and S. Werlang (2000), "The Pass-Through from Depreciation to Inflation: A Panel Study", Working Paper No. 423, Department of Economics, PUC-Rio.
- Hausmann, R., M. Gavin, C. Pages-Serra, E. Stein (1999), "Financial Turmoil and the Choice of Exchange Rate Regime", IDB Working Paper No. 400, Inter-American Development Bank, Washington D.C.
- Hernandez, L. and P. Montiel (2001), "Post-Crisis Exchange Rate Policy in Five Asian Countries: Filling Hollowing Middle", Paper presented at the IMF High Level Seminar on Exchange Rate Regimes: Hard Peg or

- Free Floating, Washington D.C., March 19-20.
- Kim, W. and S. Wei (1999), "Foreign Portfolio Investors Before and During a Crisis", NBER Working Paper No. 6968.
- McCallum, N. (1997), "Inflation Targeting in Canada, New Zealand, Sweden, the United Kingdom, and in General", In: I. Kuroda (ed.), *Towards More Effective Monetary Policy*, MacMillan, London.
- Mussa, M, P. Masson, A. Swoboda, E. Jadresic, P. Mauro and A. Berg (2000), *Exchange Rate Regime in Increasing Integrated World Economy*, IMF Occasional Paper No. 193, International Monetary Fund, Washington D.C.
- Park, Y. C., C.-S. Chung and Y. Wang (2001), "Fear of Floating: Korea's Exchange Rate Policy after the Crisis", In: *Journal of the Japanese and International Economies*, Vol. 15, pp. 225-251.
- Svensson, L. (1992), "An Interpretation of Recent Research on Exchange Rate Target Zones", In: *Journal of Economic Perspectives*, Vol. 6, pp. 119-144.
- (1997), "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets", In: *European Economic Review*, Vol. 41, pp. 1111- 1146.
- (2000), "Open-Economy Inflation Targeting", In: *Journal of International Economics*, Vol. 50, pp. 155-183.
- Velasco, A. (2000), "Exchange-Rate Policies for Developing Countries: What Have We Learned? What Do We Still Not Know?", G-24 Discussion Paper No. 5, UNCTAD and Center for International Development at Harvard University.
- Williamson, J. (2000), *Exchange Rate Regimes for East Asia: Reviving the Intermediate Option*, Policy Analysis in International Economics No. 60, Institute for International Economics, Washington D.C.

Comment on “East Asia’s Experiences with the Free Floating Exchange Rate System,” by Yung Chul Park and Chi-Young Song

Brian Kahn

The central theme of the Park and Song paper is to consider the important issue of the extent to which greater exchange rate flexibility has contributed to increased monetary policy independence. This issue has also been discussed in a recent IMF Working Paper by Borensztein, Zettelmeyer and Philippon.¹ What I would like to do (at the end of my comment) is to highlight the IMF results and compare them with those of Park and Song.

I won’t address the issues raised in the first part of the paper in any detail because I think most of these have already been discussed, particularly in the discussion about John Williamson’s paper. I want to just make a couple of points. One is the question of shallow markets and exchange rate movements. I think this is a problem that most emerging markets have faced. However, what we have seen in a number of emerging market economies, including South Africa, is that having fairly broad and relatively sophisticated financial markets as well as relatively deep foreign exchange markets, does not guarantee less volatility and it could even result in greater volatility. South Africa’s developed bond market has been a major source of exchange rate volatility as foreigners move into and out of domestic-currency denominated bonds. So it is not always the case that having these broader and more sophisticated financial markets will protect emerging market economies in any meaningful way.

Secondly, it was argued that in Korea and the other East Asian countries there is a lot of pressure to target the real and the nominal exchange rate simultaneously. Obviously this can only be successfully achieved if inflation rates are low, as is the case in East Asia. In such a case the difference between the real and the nominal exchange rate becomes less of an issue and targeting both at the same time is not a problem. However, this is not

¹ Borensztein, E.R., J. Zettelmeyer, Th. Philippon (2001), “Monetary Independence in Emerging Markets - Does the Exchange Rate Regime Make a Difference?”, Working Paper WP/01/1, International Monetary Fund, Washington D.C., January.

the case where the domestic inflation rate is significantly higher than the foreign inflation rate. For example, targeting the nominal exchange rate under such circumstances will result in an appreciation of the real exchange rate. Conversely a stable real exchange rate will require a nominal depreciation in line with the inflation differential.

Regarding the issue of volatility, the paper goes to some lengths to show that exchange rate volatility increased with the adoption of a more flexible exchange rate regime. This is not a surprising outcome, particularly given the high degree of volatility of capital flows that existed in East Asia after the crisis – as documented in the paper – and also given the volatile political situation in Indonesia. I don't find it a particularly surprising result therefore that Indonesia's volatility under flexible exchange rates is that much higher than the other countries reviewed. To me the real question here is: how would these countries have coped with these new patterns of capital flows if they had had a fixed exchange rate system or a managed float? If the exchange rate is not flexible, something else has to give.

Related to the above, the real exchange rate movements depicted in Figure 1 of the Park and Song paper do not seem to support the argument of significantly higher volatility. Eyeballing the real exchange rate graphs does not really show a highly or significantly more volatile real exchange rate in these countries *after* the initial shock of the Asian crisis. If you look at the trends, in a number of cases they don't look as if they are a major source of volatility.

With respect to the tests on monetary policy independence, I don't have a particular problem with the actual tests that were applied. However, I am not convinced that these results are actually showing us anything about what is happening to monetary policy independence. If we look at the results for the first model that is used, none of the situations yields significant results for either the fixed or flexible periods. The conclusion in the paper is that there is no strong evidence indicating that monetary policy independence has increased in the three Asian countries since the move to flexible exchange rates. In my view, this is too strong a conclusion. I would argue that the results show there is no evidence that monetary policy independence has *not* increased. We would have expected significance under the fixed exchange rate system, but there are no significant results. The results improve slightly, but not convincingly, in the other two models that are used.

The paper by Borensztein, Zettelmeyer and Philippon also covers the question of monetary policy independence under different exchange rate regimes, but takes a slightly different approach. They do not compare single countries' overall fixed and flexible exchange rate periods. Rather, they look at two different countries in different regions that adopted a

fixed exchange rate regime and compared this to the experience of selected countries in the same regions that adopted a floating exchange rate regime. It is therefore not strictly comparable to the study by Park and Song. The IMF study looks at the impact, firstly, of international interest rates and the changes of risk premia on emerging market international bonds. They compare the extreme cases of Hong Kong and Singapore, which have a fixed and a floating regime respectively. They then look at Argentina and Mexico as the two polar cases in Latin America, and later on they also look at a few other countries by doing impulse response studies for Canada, New Zealand, Chile and Australia.

With respect to Asia, they found that the interest rate linkage between Hong Kong and US monetary policy was one for one, which is a really strong result, while the interest rate in Singapore increased by only 0.3 basis points compared to a 1.0 basis point increase in US rates. There was also significant but moderate depreciation in Singapore when US interest rates increased. So this result comes out quite strongly and provides evidence that a flexible exchange rate regime does allow for some monetary policy independence. Although they found in the case of Hong Kong a very large response of interest rates to shocks in emerging market risk premia, this was not the case for Singapore.

The results of the comparison between Argentina and Mexico, with respect to interest rate shocks, were not as strong as in the case of Hong Kong and Singapore. There does not seem to be any difference in the behaviour of interest rates with respect to changes in the international risk premium. So according to this IMF study, floating exchange rates did not seem to provide any appreciable benefits in insulating the Latin American economies, such as Mexico, from shocks in international risk premia.

Overall, the paper by Park and Song is a valuable contribution to the work in this area. Yet, I think it is still probably a bit early to draw hard and fast conclusions from the above two studies given the fact that the timeframe we are looking at is relatively short.

Floor Discussion of “Exchange Rate Policies in Developing Countries”

Choosing the Appropriate Exchange Rate Regime

Manuel Marfán, who participated as a deputy minister of finance throughout most of the 1990s in the discussions of exchange rate policy in Chile, stressed that the choice of an exchange rate regime depends, first of all, on what you would like it to achieve.

“It is an instrument that can be used for different purposes. If the exchange rate is important for resource allocation and investment decisions in the long term, for export growth and things like that, then the real exchange rate should be maintained as stable and credible as possible so that investors have some certainty. The idea is to give a long-term signal of stability, for instance by applying a band. The exchange rate can also be used as a nominal anchor if there is hyperinflation. In that case, the exchange rate should achieve stabilisation. The exchange rate is also an important price for financial decisions in a globalised world. When assets and liabilities are in different currencies, the expected changes in exchange rates are very important. Perhaps you should then let the financial market forces determine what happens to the exchange rate.

In the Chilean case, I strongly supported the band, because I thought that the resource allocation component of the exchange rate was the most important. However, a problem with the band is that there are a lot of speculative attacks on it. Moreover, the efforts of policymakers to maintain a stable exchange rate are very costly and, in general, nobody backs the decisions you need to take.

In the beginning of the 1990s, the Chilean central bank had two more or less equally important targets: inflationary targets and current account targets. As time went by, the central bank followed worldwide recommendations and started giving more weight to inflationary targets and less weight to current account targets, because a current account deficit could be addressed by fiscal policy. However, who is responsible for what happens to the current account in the end? That is not delineated and has no consensus. In my view, the central bank should be responsible for the excess of private expenditures and the fiscal policymakers should be responsible for the excess of public expenditure. For the central bank this implies that it needs to understand the stability of the currency in a broad sense that goes beyond inflation and includes the role of the exchange rate in maintaining a sustainable balance of payments.”

Stephany Griffith-Jones argued that the volatility of capital flows makes a band regime highly unstable. “That is why a lot of countries have been abandoning these regimes in times of crisis, not only Chile, Russia and Indonesia, which John mentioned. The costs are not just the loss of reserves but the very high interest rates, the negative effects on the banking systems and, above all, the costs to the real economy. Making a band regime stable would have to involve tougher control of capital flows than even many people in this room would want and would be accepted internationally. If the misalignment becomes too large, we need to have more controls on capital flows, particularly on the highly speculative flows. Otherwise the whole thing will not hold.”

Liliana Rojas-Suárez stressed that exchange rate discussions cannot be separated from the situation in which the domestic financial system finds itself. “Many countries don’t dare to float because they fear what the exchange rate consequences are going to be for the financial system. At the same time, they don’t dare to fix, because if they have to defend the exchange rate, they have to increase the interest rate, which will also affect the financial system. Basically, there is a fear to implement proper monetary and exchange rate policy because a country is not ready to face the trade-off between the exchange rate and the financial system. What Chile has done is to create a system in which the government is not protecting the private sector anymore; it is allowing them to take the risk. The governor just mentioned the support of hedge instruments in assessing the currency mismatch risks that banks are taking by making loans. The currency mismatch should be taken into account when you assess the level of capital or provisions that a banking system should have. Perhaps non-tradables should have a higher level of requirement? What makes Chile work is that it has stopped protecting the private system from taking risks, because it has considered the trade-offs. It can float too because it is in a much better situation to make the financial system compatible with the exchange rate system.”

Brian Kahn pointed at the difficulty of determining the right level of the exchange rate in his country, South Africa. “The rand is now undervalued and there have been a succession of speculative attacks on it. Every time the South African central bank has tried to intervene to protect the rand, the net result has been a loss of reserves and a continued downward path. It is not a trivial matter to sort out exactly where the appropriate and real exchange rate is. In 1996, I was among those who believed we could stabilise the exchange rate at a level that was about 30 percent higher than where it is now in real terms. Although the rand may still be undervalued, the 1996 level also caused a lot of problems because it was certainly not an appropriate level.

What variables do you have to look at with today's levels? To what extent is internal equilibrium defined in terms of full employment? Since we have 25 percent unemployment in South Africa, are we saying that, considering the rand is currently undervalued, our natural rate of unemployment is 25 percent? Those are the problems we are facing. While it is not clear how speculators can keep subjecting the rand to frequent speculative attacks, they seem to be able to do so quite consistently. There is very little that can be done. The current position of the central bank is to just let it float, which has costs to the reserves."

Zdeněk Drábek pointed at yet another aspect of exchange rate regimes: their time frame and exit strategy. "In the beginning of an exchange rate regime, people are very happy with their performance. Then after a few years, the regime collapses. For example, a year ago we were pleased with the Turkish exchange rate regime and everybody was pleased, up to certain point, with the Czech fixed exchange rate regime. John referred to cases of involuntary exits in his paper. When do policymakers face a major problem? How long should a particular regime be maintained? It may be perfectly rational to move from one regime to the next, depending on the objectives the government sets itself. In the stabilisation phase, it might be more rational to think of anchors on the exchange rates even though this may not be the best thing for your exports, and even though you may need to have a different regime later on. If that is true, it raises another question: how do you exit from a given exchange rate regime? The exit strategy for the change from one regime to the next is a major issue for all of us."

Summarising some of the points made by previous speakers, Amar Bhattacharya emphasised the importance of initial conditions for choosing the appropriate exchange rate regime. "First, on the external side, capital flows have become a much more important factor. Second, on the internal side, the link to the domestic financial system has become a much more important parameter. The trade-off that arises in this nebulous pursuit of stability is: how do you pursue stability without giving excessive insurances? That very much depends on initial conditions. What you would do today in Chile is not what you might have done a few years ago. What are the prerequisites for graduating from one regime to another? The Chilean experience may be quite in contrast to the current East Asian experience because the prerequisites are quite different. That raises another question: even if you have a floating exchange rate regime, how could you limit yourself only to inflation targeting or how could the central bank act as a centre for managing the non-public sector part of the expenditure issues?"

Referring to Marfán's distinction between inflation targeting and current account targeting, José Antonio Ocampo observed that it would be

fictitious for today's policymakers to separate these two types of targeting. "In the past, for the central banks that tended to have separate external and internal balance targets, it was a clear distinction. But nowadays, whatever you do with respect to the exchange rate will have an effect on inflation and whatever you do in terms of interest rates will have an effect on the exchange rates. You have to face the trade-offs in policymaking. By the way, I do not like inflation targeting because it is the wrong way of doing monetary policy. As Stephany said, capital account regulation must be added to almost any exchange rate system, particularly to the intermediate regimes."

Reply by John Williamson

"I do not think it is fictitious to have separate external and internal balance targets just because there is interdependence. Interdependence says that you need a general equilibrium solution to the problem, but it does not say that separating those targets is not useful. How does inflation targeting match up as a way of formulating the internal balance target? It can be problematic if it is interpreted very strictly and in terms of a price index that does not attempt to take out anything such as oil shocks and so on. If those things get fed in, no account is taken of the desirability of stabilising real output by getting a relatively slow return to one's targeted exchange rates. While inflation targeting can be problematic, it has been interpreted reasonably sensibly and has worked quite well in some countries. So I am not hostile to inflation targeting unless it is interpreted totally rigidly.

Chile's exchange rate volatility has been much smaller than many other currencies since it floated, and let us hope it stays that way. It has been the case in other countries that there is a lot of volatility over time – and not just short-run volatility, but large misalignments. It will be interesting to see how the market handles the Chilean peso. Maybe it is small enough that it will not get pushed around by these chaps who enjoy playing games with currencies. That is the sort of danger that needs to be minimised.

Carlos' comment, that volatility is less in Chile than all other floating countries except Canada raises the question of whether it has anything to do with the fact that it has a reference rate? More empirical evidence is needed before we can say.

Turkey actually built in an exit strategy. It was the first time a country said it was going to use the exchange rate to stabilise but wanted to end up with a floating exchange rate with a gradually widening band. I am afraid they got clobbered there. It was not just the fault of the exchange rate regime. No exchange rate system can survive a public row with the prime minister.

The problem of picking an equilibrium exchange rate target is not trivial at all. You cannot hope to get it more accurate than plus or minus 10 or 15 percent. One reason for advocating a wide range for the band is to accommodate that degree of uncertainty in the target. Even after accommodating that degree of uncertainty, there may still be times when the market has pushed the rate to an over- or undervalued level.

It is really paradoxical to argue that you can only make this intermediate regime work if you have capital controls. If we are going back to the 1960s, and say that we can only make an intermediate regime work if we do not have the capital mobility of today, then I would say we have failed and better think again about loosening up the exchange rate regime some more.”

East Asia’s Experiences with the Free Floating Regime

Pingfang Hong observed that volatility in exchange rates would not necessarily imply a move away from fundamental equilibrium as seems to be the assumption in the paper by Park and Song. “If there is a very high volatility at just around the equilibrium rate, that does not mean you are moving away from equilibrium, but just up or down. That is the way the market tries to locate the equilibrium. In a fixed rate regime case, the government assumes it knows what the equilibrium is, so it takes the risk. But when the regime changes to floating, the market supplies the demand force to locate the equilibrium. Both a fixed and a floating exchange rate regime can cause misalignment by either the government or the market. We know that it is difficult for both the market and the government to distinguish between the speculation bubble and the fundamental equilibrium.”

Hong found Park and Song’s test for the independence of monetary policy too limited and suggested that they should have broadened their definition of monetary independence. “It is only a test of the degree of independence of three financial shocks: interest, exchange and stocks of the US. But these are only financial shocks; there can be also other shocks such as supply side or oil price shocks. Moreover, the definition of independence of monetary policy should not be limited to external shocks. It may also mean that you increase your degree of independence to handle domestic shocks and that you have more monetary policy freedom to deal with domestic demand and supply shocks. That part was not tested at all in the paper.”

Amar Bhattacharya argued that the East Asian crisis-hit countries had not really moved to free floating but rather to managed floating. “None of the East Asian countries have a floating regime right now. The magnitudes of reserve movements suggest that they are extreme managed floating

regimes, if anything. So what kinds of regimes are we comparing? To what extent are the regimes being pursued by the East Asian countries a disguised BBC or CBS? There seems to be an almost implicit reference rate. There certainly seems to be some adjustment in the rates, such as an appreciation in Korea and depreciations in the Philippines, while stability reigns in Thailand. Is this a disguised BBC? Is there anything wrong with having a regional device for BBC? After all, central banks share information about reference rates, coordinate around it, and intervene.”

Bhattacharya stressed that Asian policymakers responded to the 1997 crisis by using both the exchange rates and interest rates. “It is interesting to compare the responses of Thailand and Indonesia with Malaysia in that context. Even after Thailand developed a fundamental problem, ran out of reserves, let the exchange rate go, and received a huge IMF rescue package, the volatility still continued for a period of time. In the case of Indonesia, the government first let the exchange rate go and then tried to defend it with very high interest rates for a while. As the financial sector reeled, there was a lot of concern about trying to bring down interest rates, but there were no instruments to do it because that really required driving a wedge in the capital account. In contrast, Malaysia let the exchange rate float but insisted on keeping the interest rate quite moderate, never more than 10 to 15 percent, despite mounting inflationary expectations. As a result, although the initial estimates of loan losses were exactly the same for Malaysia, Korea and Indonesia, Malaysia ended up having the lowest losses in the banking system. These examples show that the choice in crisis is not just one about exchange rates but also an issue of interest rates.”

Jan Kregel wondered whether East Asian countries would have been better off in facing the crisis if they had adopted in their pegging systems a basket that included both the yen and the dollar. “Because these countries had adjustable pegging and not fixed exchange rate systems, which pegging system would have been the most appropriate choice? There are some studies, one of which came out of the Asian Development Bank, which have suggested that South-East Asia probably would have been better off in facing the crisis, if it had adopted a basket that included the yen and the dollar. This links back to the discussion of John Williamson’s paper about current and capital account flows. Would it have been more sensible for Asia to balance its capital account currency, which was primarily the yen, against its current account currency, which was primarily the stabilisation of export earnings in dollars? The kicker to this came in 1996 when the very sharp increase in short-term flows denominated in dollars tended to confuse this rather simple separation between the yen, as the major capital account investment currency, and the dollar, as the major export market currency.”

Manuel Marfán said that his conversations with financial authorities of Korea, Singapore and Malaysia in the mid-1990s at APEC meetings had made clear to him that these countries had partly achieved exchange rate stability by effectively influencing the private sector's behaviour. "How did these countries achieve stable exchange rates, for instance, in Korea? We found that foreign investors, including financial investors, had to bargain a lot before they could enter the Korean economy in the mid-1990s. There was a sort of capital account control without any rules but a case-by-case decisionmaking. In Malaysia, when there was a lot of arbitrage and speculation in terms of capital inflows in 1994, they decided to implement a sort of export capital control that was very costly for speculators. They performed that for a few months until they had the reaction they wanted. This is an example of the way in which countries sometimes make crucial decisions that change the logic of the transmission mechanism of policy and private decisions."

Rogério Studart observed that countries that have gone through a period of traumatic financial crises, such as the East Asian countries, are not good cases to assess whether a change in the exchange rate regime has affected the independence of monetary policy. "Such traumas tend to create inertia in the behaviour of both the international investors and the monetary authorities. International investors tend to become very nervous and have their fingers on the trigger all the time, waiting for something to happen. Monetary policymakers, in their turn, want to show that they are more conservative than even the most conservative international investor."

Reply by Chi-Young Song

"I agree with Brian's comment that the high volatility in the free floating regime is not surprising, but the interesting question is how much the volatility has increased after shifting to a free floating system. In Korea, before the free floating regime, there was a sort of managed floating system, called a 'market averages' system, which had a daily reference rate change and some bands with a 5 or 10 percent margin. It was a kind of band or margin exchange rate system. At that time, Korea still had high levels of volatility within the margin. It is worth seeing how much the volatility has changed in Korea since the regime shift.

Brian asked how the East Asian countries cope with high volatility of the exchange rate? In general, high volatility influences the capital market, especially the stock market. In Korea, the high volatility of the exchange rate reduced foreign capital inflows into the stock market. That is why the Bank of Korea tried to intervene to reduce the high volatility of the exchange rate.

Brian also commented that the real exchange rate volatility was not very high after the regime shift but was still higher than before the crisis in the 1990s. From 1996 to 1998, Korea had a very stable real exchange rate movement. But after the crisis, the real exchange volatility increased compared to the entire 1990s. However, I agree that it is still difficult to draw a conclusion because we have had only two years of experience with a free floating system.

In response to Pingfang, our estimation at least allows us to see that the foreign factors are important in affecting the domestic interest rate. Yet, this is still a limited approach in the sense that it does not include domestic economy shocks and other factors that affect the domestic interest rate. We could not consider these factors because we are only using daily observations. In order to include these broader questions we need longer-term data.

Amar is right that, in the long term, the East Asian regime is a disguised BBC. While the Bank of Korea may have some sort of reference rate in mind for the long term, in the short term it is mostly concerned about stabilising the exchange rate.”