

**FINANCIAL CRISIS, CAPITAL OUTFLOWS  
AND POLICY RESPONSES:  
SIMPLE ANALYTICS AND EXAMPLES FROM EAST ASIA**

**by**

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January 2005 (Slightly revised version forthcoming in *Journal of Economic Education*).

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*This paper was completed while the author was a Visiting Freeman Foundation Scholar at the Department of Economics, Claremont McKenna College (CMC). The author is grateful for the generous support provided by the Freeman Foundation as well as for the first-rate research facilities made available to him at the Lowe Institute of Political Economy. Useful comments by three anonymous referees of the journal as well as the Journal's Associate Editor, Hirschel Kasper, is gratefully acknowledged. The usual disclaimer applies.*

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**Abstract**

Financial crises seem to have become the norm rather than the exception since 1992. This paper examines the impact of a crisis of confidence and resultant capital outflows from a small and open economy, and the possible policy options in response to such outflows using simple tools and definitions that will be familiar to any Money and Banking/Intermediate Macroeconomics student. To facilitate the discussion, examples are drawn from the East Asian crisis of 1997-98 (Indonesia, Korea, Malaysia and Thailand), though the analysis remains pertinent to emerging economies in general.

*Key words: Capital Flows, East Asia, Financial Crisis, Monetary Base, Money Supply, Money Multiplier*

## 1. Introduction

Financial crises seem to have become the norm rather than the exception since 1992.<sup>1</sup> Specifically, in 1992-93, Europe was faced with the very real possibility of a complete collapse of the European Exchange Rate Mechanism (ERM). The Italian lira and British pound withdrew from the ERM, three other currencies (viz. the Spanish peseta, Irish pound and Danish krona) were devalued, and there was a substantial widening of the bands within which the currencies could fluctuate. In 1994-95, there was the Mexican currency crisis which saw a steep devaluation of the peso and brought Mexico to the brink of default. There were also spillover effects on Argentina and Brazil. Between July 1997 and mid-1998, the world experienced the effects of the East Asian crisis, which started somewhat innocuously with a run on the Thai baht, but spread swiftly to a number of other regional currencies, most notably the Indonesian rupiah, Malaysian ringgit and Korean won (so-called "Tom-Yam effect"). Other large emerging economies such as Russia and Brazil also experienced periods of significant market weakness and required the assistance of the IMF. The Russian ruble was devalued in August 1998 -- during a period of exceptional financial market turbulence (BIS 1999) -- while the Brazilian real's peg was eventually broken in January 1999. A number of other smaller emerging economies such as Turkey and Ecuador also experienced currency crises in the 1990s, with Argentina and Venezuela being the most recent victims.

In recognition of this fact, most popular undergraduate textbooks in Money and Banking nowadays tend to include a section on financial crisis in emerging economies (for instance, see Chapter 24, pp.494-7 in Mishkin and Chapter 22, pp.595-8 in Hubbard). While these texts offer useful and up-to-date discussions of concepts such as financial crises and sterilization of capital flows, the discussions generally

seem to be “stand alones”. No attempt is made to link the discussion of these important contemporary issues to the age-old analytics of the money market and money multiplier (Chapters 15, 16 and 21 in Mishkin and Chapters 17, 18 and 23 in Hubbard).

This paper examines the impact of a crisis of confidence and resultant capital outflows from a small and open economy and the possible policy options in response to such outflows using simple tools and definitions that will be familiar to any student who has successfully completed a Money and Banking course or even one in Intermediate Macroeconomics. To facilitate the discussion, examples are drawn from the East Asian crisis of 1997-98 (Indonesia, Korea, Malaysia and Thailand), though the analysis remains pertinent to emerging economies in general.<sup>2</sup>

## 2. Analytical Framework

### 2.1 Preliminaries

Consider a semi-open economy (“foreign country”) in the sense that the risk adjusted interest parity holds (eq. 1):

$$i_t = i_t^* + \Delta e_{t+1}^e + rp_t \quad (1)$$

where  $e$  = foreign currency per US\$;  $i$  = Thai/emerging economy interest rates;  $i^*$  = LIBOR rate;  $rp$  = currency or country risk premium of the emerging economy.

Consider the domestic money market equilibrium:

$$M_t^s / P_t = M_t^d = f(y_t, i_t, V_t) \quad (2)$$

where:  $M_t^s$  = nominal money stock,  $M_t^d$  = real money demand,  $P_t$  = price level,  $y_t$  = real income and  $V_t$  = vector of other factors impacting money demand (financial innovations, inflation, etc.). Assume, for simplicity, that  $P^t$  is normalized to one to begin with.

## 2.2 Crisis of Confidence: Causes and Consequences

Assume the economy is originally in equilibrium at point 0 (Figure 1). Assume the country's equilibrium is disturbed because of a "crisis of confidence", such that  $(\Delta e_{t+1}^e + r_p t)$  jumps up. This leads to a rise in the horizontal parity line from  $aa$  to  $bb$ . The rise in local interest rates implies a reduction in money demand. Thus, at 1,  $M^s > M^d$ . This excess liquidity in the economy is translated into a capital outflow. This is usually the beginning of a crisis.

The trigger for this crisis can be for any number of reasons. Broadly, the triggers can be divided into domestic and external factors. Domestic factors might include: (a) concerns about trade and export growth prospects (possibly because of sudden appreciation of the real exchange rate as happened in Southeast Asia in 1996-97);<sup>3</sup> (b) bust in domestic asset markets (such as real estate) and the negative repercussions of that on the rest of the economy; (c) socio-political uncertainty or concerns about commitment of the policy makers to the reform program; or (d) revelation of new information – "bad news" – such as the extent of bad loans of the domestic financial system, the extent of implicit liabilities of the financial system or government; or the extent of forward commitments reserve commitments of the central bank (which effectively reduces the available reserves to be used).

External factors triggering a crisis of confidence could also be manifold. Indeed, as noted, an important characteristic of the East Asian crisis has been the

rapid pace at which it spread from Thailand to many other East Asian economies – so-called “contagion”. This term broadly refers to the simultaneous occurrence of currency crises in two or more economies. It may be more formally defined as a situation where a currency crisis in one economy leads to a jump to a “bad” equilibrium in a neighboring economy (Masson, 1998). What are the channels which cause the contagious spread of crises?<sup>4</sup>

The first, and most direct, is the need to remain “cost competitive” vis-à-vis other economies with similar areas of comparative advantage, as a real devaluation in one economy enhances its export competitiveness at the expense of a trading partner (regional competitor).

Second, in contrast to contagion due to the “competition” noted above, there might be extensive and growing trade, investment and other intraregional interdependencies, leading to contagion due to economic “complementarities” (including price and income effects due to a currency devaluation and recession in a neighboring, importing economy).

Third, losses in one economy may lead open-end mutual funds or banks to liquidate positions in other regional economies in which they have exposures. This so-called “forced portfolio adjustment/rebalance” behaviour may occur for a number of reasons. These include, an anticipation of increased redemptions; the need to cover losses in other crisis-hit markets (“cash-in” effects), and in order to reduce portfolio risks and improve the liquidity position (“flight to safety” effects). Of particular significance is the contagious transmission of crises through the interbank lending channel.<sup>5</sup>

Fourth, many extra-regional investors, such as mutual funds and even foreign banks, tend to lump economies in the non-industrialized world into sub-regions, rather

than make country-specific evaluations and investments<sup>6</sup>. Insofar as the entire geographical region is looked upon as a single investment class (i.e. “risk clusters”) rather than as individual markets, a weakness or attack on one currency could lead to a reassessment of the region’s “fundamentals” and the probability of a similar fate befalling regional economies with broadly similar macroeconomic stances (whether *actual* or *perceived*). This is popularly termed the “wake-up call” effect. This phenomenon could also refer to the sudden realization of how little market participants truly understood about the regional economies, leading to a region-wide downgrading/sell-off.

The important point to be taken away from the foregoing discussion is that there could be any number of reasons that trigger a crisis of confidence, leading to sharp capital reversals (i.e. booms turn to bust) and panic withdrawals. What are the available policy options available to the monetary authorities faced with such a scenario?

### **2.3 The “Do Nothing” Option**

If the authorities do nothing and want to defend the pegged exchange rate, the drain in liquidity in the economy implies a reduction in real money stock. Eventually,  $M^s$  declines from  $M^s_0$  to  $M^s_1$  such that the domestic money market is back in equilibrium at point 2 in the near term (Figure 2)<sup>7</sup>. This is fully consistent with the so-called policy trilemma which maintains that a country cannot simultaneously maintain an open capital account, fixed exchange rate and monetary policy autonomy. Thus, in the above case, since the authorities wanted to defend the peg, they had to forsake monetary policy autonomy. (The consequences of forsaking the peg will be discussed

in Section 2.5). But let us examine in more depth the impact of capital outflows on money supply.

#### 2.4 Impact of Capital Outflows on Domestic Money Supply

Consider the following set of equations:

$$M^s = mm * MB \quad (3)$$

$$MB = NDA + NFA \quad (4)$$

$$NFA = e * R \quad (5)$$

where:  $mm$  = money multiplier,  $MB$  = monetary base,  $NDA$  = net domestic assets,  $NFA$  = net foreign assets,  $R$  = foreign exchange (forex) reserves and  $e$  = nominal exchange rate. Eq. 3 states that the aggregate money supply equals the money base multiplied by the money multiplier. Eq. 4 states that the monetary base consists of two components, net domestic assets and net foreign assets. Eq. 5 states that the stock of net foreign assets equals the stock of forex reserves multiplied by the nominal exchange rate (foreign currency per US\$).

Assume the country initially maintained a fixed exchange rate. With appropriate substitutions and taking the first derivative of  $M^s$  with respect to  $K$  (which denotes capital inflows) derives:

$$\begin{aligned} dM^s/dK &= MB(dmm/dK) + mm(dMB/dK) \\ &= MB(dmm/dK) + mm[(dNDA/dK) + e(dR/dK)] \quad (6) \end{aligned}$$

$dNDA/dK$ : During a financial crisis this term is usually negative as capital outflows ( $dK < 0$ ) are sterilized by the monetary authorities ( $dNDA > 0$ ) from the

domestic financial system, especially deposit taking ones. What might motivate this bailout (i.e. lender of last resort)? Capital flows tend to be largely intermediated via the banking system, and bank lending is the dominant form of funding in most developing countries. Consequently, a sustained drop in bank lending following sharp capital outflows and declines in net worth will be severely detrimental to real economic activity. Figure 3 offers some indication of the increase in claims by the domestic monetary authority in Thailand on the domestic financial institutions during the period of massive capital outflows in 1997 and early 1998.<sup>8</sup>

dmm/dK: During a financial crisis this term is usually positive (see Mishkin Chapter 16, pp.428-9 and Hubbard, Chapter 17, p.459). The reason for this is clear once we consider the definition of the M2 multiplier. To be sure, let the narrow money (M1) = currency in circulation (C) plus demand/checking deposits (D). Let M2 = M1 + Savings deposits and small denomination time deposits (generically referred to as S). Let BR denote reserve holdings by banks which in turn are made up of required reserves and excess reserves. Thus, the M2 multiplier =  $mm = [c + d + s]/[c + br]$ , where all italicized variables in small letters are denoted as a proportion of demand/checking deposits. During a financial crisis, individuals will prefer to ensure their financial savings are as liquid as possible, leading to a shift of funds from  $s$  to  $d$ . In addition, if there are concerns about the viability of the banking system, there may be a sharp increase in  $c$  at the expense of all types of deposits. In addition, during the period of capital outflows, banks on their part may prefer to maintain a degree of liquidity, resulting in an increase in  $br$ .

dR/dK: This term refers to the impact of capital flows on forex reserves. Even in the case of a fixed exchange rate regime, this effect is generally ambiguous. Why? Consider eq. (7) below which is the usual balance of payments accounting identity.

$$dR = CAB + dK \quad (7)$$

If there is no change in the current account balance (CAB),  $dR/dK > 0$ . This is straightforward, i.e. capital outflows ( $dK < 0$ ) lead to a drain on forex reserves ( $dR < 0$ ) while capital inflows ( $dK > 0$ ) lead to forex reserve accumulation ( $dR > 0$ )<sup>9</sup>. However, with capital outflows, governments may restrict imports such that the CAB rises. If the rise in CAB outweighs the capital outflows, forex reserves could actually grow.<sup>10</sup> A likely scenario is that initially the direct impact of the capital outflows exceeds the indirect effects via the current account such that forex reserves decline (i.e.  $dR/dK > 0$ ). Over time, however, as capital flows stabilize, the decline in the current account balance continues to improve (due to curbs on imports and a resurgence in exports following a real exchange rate devaluation – see Section 2.5). This is apparent from Figures 4 and 5 which reveals an initial decline or stagnation in gross forex reserves in East Asia between mid 1997 and mid 1998 before they began to be replenished as the region's current account balances improved.<sup>11</sup>

Putting this all together, the net impact of capital flows on money supply is an empirical issue. An empirical regularity appears to be that the monetary base (MB) is more or less constant as the increase in domestic credit (NDA) to accommodate a run on the financial institutions offsets the fall in reserves (NFA), but the money multiplier ( $m$ ) declines sharply such that overall money supply ( $M^s$ ) falls. There are always exceptions to this stylization. For instance, during the East Asian crisis of 1997-98, Korea's and Thailand's monetary bases remained more or less constant between 1996 and 1998, that of Indonesia saw a sustained rapid expansion, and Malaysia experienced sharp jumps between Q2: 1996 and Q4: 1997 before falling sharply (Figure 6).

## 2.5 Devaluing the Currency

Let us consider the case where the monetary authority continues to sterilize capital outflows in order to resist the fall in the MB, as in Thailand, for instance. The persistent monetary disequilibrium in turn implies capital outflows continue unabated. MacIntyre (1999) succinctly summarizes the course of events in Thailand during the period of capital outflows in 1997:

A side effect of injecting large scale emergency funding into the...failing finance companies was blowing out the money supply...This served to sharpen the fundamental contradiction in the government's overall macroeconomic position. At the same time as it was pumping money into insolvent finance companies to keep them afloat, the central bank was also spending down...(forex)..reserves to prop up the exchange rate...(T)his was not a sustainable strategy (p.14).

Indeed, at some stage, the country's stock of forex reserves declines to some "minimum level" (assume zero or simplicity), necessitating a break in the currency peg (i.e. currency devaluation). This occurred in Thailand in July 1997, followed by Indonesia in August 1997 and other regional currencies soon after. What might happen following this expenditure switching policy? Two possibilities need to be considered.

One, in the "conventional" case, (a) devaluation is expansionary such that output rises, so money demand increases from  $M^d_0$  to  $M^d_1$  and (b) since the expected devaluation has materialized,  $\Delta e^e_{t+1} \rightarrow 0$ , such that there is a consequent shift down of the parity line from  $bb$  to  $cc$  (Figure 7). Eventually a new equilibrium (point 3) is attained corresponding to stability of the capital account, improvement in the CAB and rise in output. In other words, *devaluation is the end of the crisis*.<sup>12</sup> Indeed, it is trivial to note that depending on the magnitude of the movements of the interest parity line and the money demand curve, the economy could be faced with capital inflows

and resulting increase in domestic money supply/expected exchange rate appreciation. This is consistent with the boom-bust-boom scenario that seems to plague emerging economies (Bird and Rajan 2001).

Two, it is possible that the exchange rate devaluation leads to a hike in the risk premium such that the r.h.s. of eq. 1 remains unchanged or even rises post-devaluation, thus intensifying capital outflows (from *bb* to *dd* in Figure 8). This in turn may occur for a number of reasons: loss of credibility of monetary authorities; concerns about the impact of the currency devaluation of the financial and real sectors (elaborated upon below); loss of exchange rate anchor or shock of revelation of the dramatic decline in forex reserves and general weak state of the economy (as in the case of Thailand in June-July 1997), etc. In other words, where devaluation is part of a credible macroeconomic strategy, is combined with appropriate counter-inflationary fiscal and monetary policy, and leads to a new exchange rate that is perceived by private capital markets to be close to the equilibrium real rate or below it, it will have a positive effect on creditworthiness and capital flows. Where, on the other hand, it is perceived as a panic measure, is combined with excessively expansionary fiscal and monetary policy and leads to a new rate that is still seen as involving currency overvaluation, it will be associated with further capital outflows.

For instance, in the case of Thailand, in the period leading up to the devaluation (i.e. first quarter of 1997) only the non-bank sector experienced capital outflows (Table 1). More precisely it was the non-resident baht accounts (NRBAs) in particular, but also the “other loans” component that recorded net outflows. NRBAs are essentially nostro accounts held in domestic banks that serve various transactions, including baht clearing for foreign currency-related transactions and stock market transactions by foreigners. Net FDI inflows remained positive throughout 1997 and

portfolio flows too only changed direction in November and December 1997. Private bank capital flows turned around sharply by over \$10 billion between the first half and second halves of 1997. This reversal intensified in 1998, with outflows reaching almost \$14 billion. Of significance here is the fact that funds were still flowing into the country during the first half of 1997 right up to the devaluation. It was only *after* the devaluation that there was a massive exodus of these banking sector flows. Capital outflows from NRBAAs were \$3.5 billion in the first half of 1997, over \$2 billion in the second half of the year and slowed to about \$2.7 billion for the 1998 as a whole. According to some reports, Thailand was pulled back from the brink of national bankruptcy at the end of 1997 only because creditors agreed to roll over their foreign loans to local firms (*Bangkok Post* December 22, 1997).

It is possible that a pre-emptive devaluation in the early stages of the crisis may reduce this “shock impact”, thus precluding as large a rise in the risk premium term. Thus, maximum effort needs to be exerted into avoiding the appearance of devaluation as being a panic measure. Governments in liaison with the IMF need to address the risk that devaluation may spook private capital markets. Devaluation must be presented as part of a credible economic strategy, and foreign capital needs to be bailed in to support it. In this regard there is a need for authorities to carefully manage financial market expectations so as to ensure that expected future devaluations and risk premia come down and interest rates can be reduced. Apart from committing unequivocally to necessary structural adjustment programs (which is important in its own right but also because it signals availability of “sufficient” liquidity from the IMF), country experiences (e.g. Brazil in 1999 and Korea in 1998) suggest that market confidence can best be regained if the monetary authority swiftly moves to a transparent and credible monetary framework post devaluation such as open economy

inflation targeting. Fraga et al. (2003) stress that the weak credibility of monetary policy institutions in emerging economies necessitates greater transparency and formality in the inflation-targeting regime compared to advanced economies.<sup>13</sup>

Apart from the shock impact noted above, devaluation may also be contractionary in and of itself such that output ( $y_t$ ) declines (Figure 9). The recessions ranged from 7 percent in Korea to 17 percent in Indonesia in 1998. The BOT (1998) report on the Thai crisis outlined the “official” reasons behind why a devaluation of the baht was perceived as doing more harm than good: high import content of Thai exports implying limited competitiveness benefit from a weakened currency; inflationary effects of devaluation leading to wage-price spiral; and unhedged foreign currency debts of corporates leading to bankruptcies and unemployment and deterioration in asset quality of financial institutions due to a weakened corporate. The balance sheet effects due to large unhedged exposure to short-term foreign currency denominated debt were particularly important in the East Asian crisis. According to Dornbusch (2001):

*A new-style crisis involves doubt about credit worthiness of the balance sheet of a significant part of the economy – private or public – and the exchange rate...when there is a question about one, the implied capital flight makes it immediately a question about both...the central part of the new-style crisis is the focus on balance sheets and capital flight...Because new-style crises involve the national balance sheet they involve a far more dramatic impact on economic activity than mere current account disturbances; this far larger impact arises both in terms of magnitude of the financial shock as well as *disorganization effects* stemming from illiquidity or bankruptcy (pp.2-3).*

There is also a large body of literature that developed in the 1960s and 1970s which explains why devaluation in emerging economies may be contractionary. It is, however, unlikely that the “conventional” contractionary effects of devaluation via the current account can explain the magnitude and ferocity of some economic

contractions following devaluation (see Bird and Rajan 2003a and references cited within).

Whatever the exact reasons, if devaluation proves to be contractionary, money demand contracts further from  $M^d_0$  to  $M^d_2$ , such that domestic disequilibrium is further exacerbated (Figure 8). In other words, in this case, devaluation exacerbates the crisis, leading possibly to outright economic collapse<sup>14</sup>. This seems to have been the experience of a number of emerging economies in recent times, including those in East Asia.

## 2.6 Interest Rate Policy

Another common policy response to currency bearishness is to raise interest rates sharply which effectively involves a leftward shift of the money supply ( $M^s$ ) curve. Note that if the authorities are keen on building forex reserves via capital inflows, there is a need for a sufficiently contractionary monetary policy such that domestic money market equilibrium exceeds interest rates given by the interest parity condition (point 5 in Figure 10).

Once again, however, the impact of this policy response is not unambiguous. This expenditure reducing policy may in fact have severe contractionary effects, thus reducing  $M^d$ . Apart from the conventional transmission channels via which tight interest rate policy may affect output (see Chapter 25 in Mishkin and Chapter 27 in Hubbard), in highly leveraged economies, high interest rates may make it impossible for a country to service its debt (the so-called “Laffer curve” effects of monetary policy *a la* Furman, and Stiglitz 1998), further swelling the share of non-performing loans (NPLs) held by financial institutions. Decapitalized banks may in turn curtail their lending, intensifying the recession (supply side effect). In addition, the collapse

in asset prices that tend to accompany - in fact precede - devaluation could deepen the “credit crunch” caused initially by loss of access to international capital markets (BOT 1998).

Thus, where tight monetary policy leads to increased concerns regarding “riskiness and destruction of collateral associated with the balance sheet effects of the crisis itself” (Boorman, et al. 2000), it will prove to be counterproductive. Rather than domestic monetary policy neutralizing the recessionary effects of devaluation, it may lead to additional capital outflows that enhance them. On the other hand, if the authorities relax domestic monetary policy in order to at least partially offset the effects of capital outflows on domestic liquidity, they will neutralize the recessionary effects and may avoid a potential collapse in output. However, the current account effect will then be moderated and it will take longer to replenish depleted forex reserves. Moreover, since the rise in the interest rate will be less pronounced, this could delay the return of foreign capital.

In circumstances where governments are anxious to avoid severe recession in the aftermath of devaluation immediately following a crisis, it is easy to see how they may be persuaded to combine currency devaluation with some degree of domestic monetary relaxation (for instance, see Aghion et al. 2000). The problem then is that monetary relaxation may be interpreted by markets as representing exactly the kind of macroeconomic laxity that they fear. Yet there remain Lucas-type dangers with this strategy since capital markets may respond negatively if they perceive monetary policy as being insufficiently tight.

What did the East Asian countries actually do during the crisis period?

According to IMF economists:

Monetary policy in the IMF-supported programs in the Asian countries tried to walk a narrow line, seeking to resist downward pressure on

exchange rates while avoiding a crippling effect on the real economy...The design and implementation of monetary policy had to work under significant constraints. High debt-equity ratios in the corporate sectors as well as systemic and structural problems made the financial sector more vulnerable to increases in the interest rates.. (Boorman et al. 2000, pp.31-2).

This conundrum helps explain the initial policy vacillations by the countries which initially raised but then quickly lowered interest rates, only to raise them again substantially following intensified bearish pressures between 1997 and 1998. Specifically, while Korea and Thailand did eventually raise interest rates in 1998 to curb the selling pressures, Indonesia continued with its policy of monetary laxity primarily to infuse liquidity to the financial system (Figure 11). This inevitably led to inflationary pressures and heightened expectations of an exchange rate devaluation over time<sup>15</sup>. From eq. 1, it is apparent that interest rates in Indonesia ought to spike upwards (Figure 12). Thus, Boorman et al. (2000) correctly note:

It would be highly misleading to interpret Indonesia's high nominal interest rates in late 1997 and the early months of 1998 as an indication of tight policy; rather, they signalled a loss of confidence in the currency as well as in the country's credit-worthiness. (p.32).

The large and growing disequilibrium in the domestic money market in turn predictably implied large-scale capital outflows and further exchange rate devaluations which were self-validating (Figure 12).<sup>16</sup> It is of no surprise, therefore, that Indonesia was the country most severely impacted by the crisis.<sup>17</sup>

## 2.7 Capital Controls

In the face of persistent capital outflows and concerns about the impact of currency devaluations, the monetary authorities could also attempt to curb capital outflows by breaking the link between domestic and international financial markets (eq. 1) via capital controls. Recalling the impossible trilemma noted in Section 2.2, if

the country wants to maintain a fixed exchange rate and monetary policy autonomy, it must forsake capital account openness. This was the case of Malaysia in September 1998 which imposed wide-ranging capital controls to penalize offshore currency trading and short-term portfolio flows (Bird and Rajan 2000)<sup>18</sup>.

A number of concerns were initially raised about the Malaysian controls. For instance, it had been argued in some quarters that, insofar as there has been a global trend towards economic liberalization (with many alternative investment opportunities with an increasing range of economies), adopting exchange controls may lead Malaysia to be overlooked by the international community as a viable investment destination. There was also a feeling that the unilateral introduction of such controls may have been unwise in the midst of prevailing bearishness as it may be interpreted as a sign of weak economic fundamentals or the unsustainability of prevailing economic policies, hence exacerbating the situation.<sup>19</sup> As noted by Edison and Reinhart (2001):

Malaysia's controls...represented the most extreme example of "adverse signaling". Such signals (were) reinforced by Dr. Mahathir's anti-foreigners rhetoric at the time the controls were launched, which raised widespread concerns that even more drastic measures, including expropriation, would follow (p.534).

Reluctance to specify early on whether the controls were temporary or permanent created an additional element of uncertainty.

There is surely an element of truth in these concerns. For instance, immediately following the imposition of the restraints, Malaysia was removed from a number of key investment benchmarks, including the IFC, MSCI and FT-S&P; Malaysia's risk premium in international markets appreciated; Malaysia's sovereign ratings were downgraded; and FDI levels to Malaysia fell despite being exempted from the controls (Ariyoshi et al. 2000).

However, early empirical work on the administrative controls imposed between September 1998 and end 1999 suggests that they in fact did accomplish the goal of providing greater policy autonomy. This allowed Malaysia to pursue independent (i.e. loose) monetary policy and a fixed exchange rate regime (Edison and Reinhart 2001). This in turn might possibly have contributed to the early recovery of the Malaysian economy from the crisis (Ariyoshi et al. 2000 and Kaplan and Rodrik 2001).

Many observers have drawn inspiration from this to suggest that an appropriate policy response to sharp capital outflows is some combination of restoration of confidence quickly via large-scale liquidity financing, imposing standstills on external creditors and imposing capital controls to try and prevent capital flight (Yoshitomi and Ohno 1999). But how replicable is the Malaysian experience?

Experiences with illiberal regimes (trade or finance) in emerging economies have suggested that there is inevitably much inertia in removing controls. In other words, an illiberal regime once initiated tends to become a permanent feature, rather than a temporary tool which “buys time” to undertake the necessary institutional and policy reforms. This is so, as many emerging economies may be characterized as being “soft” states *a la* Rodrik (1992), being captured by interest groups. However, Malaysia, being a relatively “hard” or “autonomous” state, was able to ensure that there was a fairly quick and smooth transition to a relatively more transparent and less onerous set of restraints (price-based). There are the well known problems relating to the potential for rent-seeking activities (bribery, corruption and so forth) that persistent controls generate, not to mention the high enforcement costs, the inevitable

creation of a black market and the general porousness of quantitative restrictions, particularly in the medium and longer terms (Bird and Rajan 2000).

This, along with the fact that much more detailed empirical work remains to be done on the Malaysian experience with restraining capital movements, suggests the need for significant caution in advocating it as a panacea to other crisis-hit economies. Indeed, Malaysian economic recovery per se cannot necessarily be interpreted as a sign of “success” of the policy. This is so, as Thailand and South Korea, which both pursued the IMF programs and maintained open capital accounts, have, like Malaysia, also been able to gradually relax nominal interest rates and have enjoyed similarly rapid economic recoveries (ADB 2000). In addition, Malaysia entered the crisis in a stronger macroeconomic position than the other two economies.

In addition to country studies, many other cross-country studies on capital account liberalization have attempted to examine the more general issue of whether there exists a tradeoff between stability and growth; or, in other words, do capital controls hinder long run growth? The potential benefits of an open capital account, assuming that the necessary pre-conditions are met, include:<sup>20</sup> a) static resource allocation gains through international specialization in the production of financial services; b) static financial gains through appropriate portfolio diversification internationally; c) dynamic or x-efficiency gains through the introduction of competition in the financial sector; d) gains from intertemporal trade through access to global financial markets; e) absence of rent-seeking and other costs of capital restraints; and f) imposition of market discipline on policy makers by ensuring that profligate policies, such as unsustainable external or fiscal imbalances and debt accumulation, trigger capital outflows and balance of payments/currency crises.

Despite the foregoing theoretical advantages regarding an open capital account, a careful examination of the available empirical literature on the subject suggests much less reason to be sanguine about the benefits of capital account liberalization. Indeed, financial openness has been associated with several episodes of severe financial turbulence in global currency markets. A general conclusion that is emerging from the empirical literature on the connections between capital account liberalization and growth is that the efficient resource allocation of resources of an open capital account dominate only in cases where the domestic financial markets are well developed and supervised and the overall macroeconomic environment is stable; else it could be counterproductive (Arteta et al. 2001, Eichengreen 2002, Eichengreen and Leblang 2003, Rajan 2002 and Rodrik 1998).

### **3. Conclusion**

Using simple tools that are taught in any typical undergraduate Money and Banking course, this paper has attempted to rationalize the impact of financial crisis and capital outflows in emerging economies, and the possible policy options and dilemmas thereof. Examples have been drawn freely from East Asia which was faced with such a crisis and series of policy conundrums in 1997-98.

From a policy perspective, an important conclusion from the preceding analysis is that while managing a conventional current account crisis involves a judicious combination of adjustment and financing, resolving a crisis involving sharp capital outflows (“capital account crisis”) predominantly involves restoring confidence by managing/anticipating expectations. It is therefore a much more imprecise and messier task. Accordingly, the emphasis is best placed on crisis *prevention* to stem the build-up of weaknesses in the first instance.

While capital controls might be one crisis preventive measure as discussed previously, another measure suggested is that countries move towards relatively greater exchange rate flexibility. Thus, in the context of a crisis of confidence, if the country maintained a flexible exchange rate, the exchange rate could be allowed to devalue without loss of reserves. The concern however, is that devaluation could be contractionary as discussed previously. Recall that many developing countries have historically been unable or unwilling to borrow overseas in their domestic currencies, leading them to accumulate foreign currency debt liabilities that are primarily dollar denominated and unhedged (i.e. “liability dollarization”). In such countries, large depreciations magnify the domestic currency value of their external debt and hence sharply reduce the net worth of individuals, corporations and the overall domestic financial system. This “balance sheet” effect could lead to massive bankruptcies as it did in Mexico in 1994–95 and East Asia in 1997–98. This, along with concerns about the inflationary consequences of currency depreciations (due to the high import content of domestic production) is further explanation for the “fear of floating” exhibited by many developing countries.

While there may be some validity in both the above points, they do not automatically suggest that a fixed exchange rate is the best option. Indeed, the maintenance of a fixed US dollar peg may be self-fulfilling in that it blunts the incentives for agents to undertake appropriate risk management to hedge against exchange rate movements. Conversely, the introduction of some transactions costs and exchange rate risks by permitting a degree of currency variability may also help moderate the extent of capital inflows, consequently dampening the intensity of boom and bust cycles that has plagued so many developing countries in Asia and elsewhere.

While there are many reasons in favor of exchange rate flexibility, many

developing countries – particularly smaller and most open ones -- maintain a genuine aversion towards a flexible exchange rate regime. There is a belief that the exchange rate is too important to be allowed to move “too freely” because of concerns about ‘excessive’ volatility on trade and investment. Indeed, New Zealand, which has been held up as the poster-child of the feasibility of a flexible exchange rate regime for small and open economies, has recently taken steps to bolster its central bank’s capacity to intervene in the foreign exchange market to influence the level of the New Zealand dollar in certain circumstances. Thus, the issue of design of an appropriate exchange rate regime remains a highly debated topic in academic and policy arenas.

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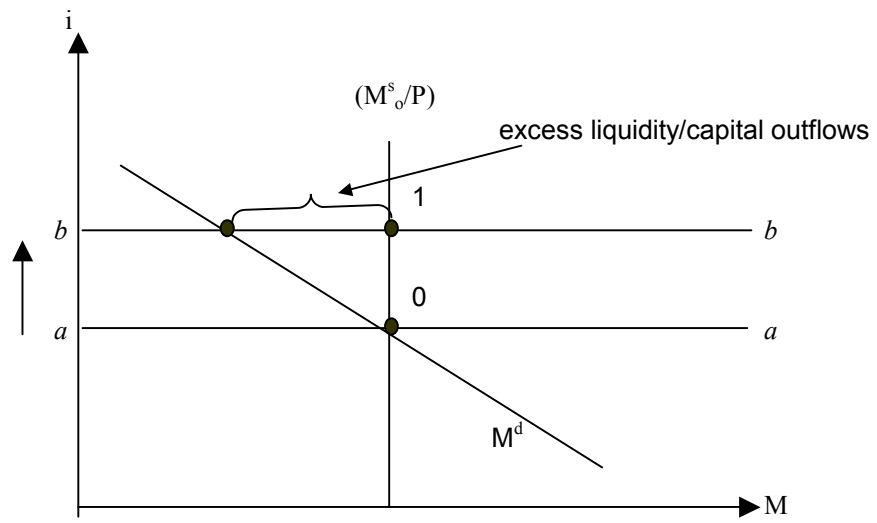
**Table 1**  
**Thailand: Composition of Net Private Capital Inflows (US\$ billions), 1997-1999**

	1997	1998	1998		1999 Q1
			Q1	Q4	
<b>Banks</b>	<b>-6,640</b>	<b>-13,944</b>	<b>1,244</b>	<b>-4,368</b>	<b>-5,497</b>
Commercial banks	-1,727	-4,310	881	-2,445	-3,375
of which Recapitalization	0	1,986	952	0	21
BIBFs	-1,913	-9,634	-2,125	-1,924	-2,123
<b>Non-banks</b>	<b>-1,912</b>	<b>-2,024</b>	<b>-2,777</b>	<b>1,248</b>	<b>-469</b>
Direct Investment	3,201	4,688	1,066	1,218	902
Foreign direct investment <sup>a</sup>	3,641	4,810	1,067	1,248	996
Thai direct investment abroad	-440	-123	-1	-30	-94
Other Loans	-3,783	-4,279	-1,981	-734	-1,239
Portfolio investment	4,494	539	437	-15	221
Equity securities	3,869	354	434	-75	230
Debt securities	625	185	3	60	-9
Nonresident baht account	-5,839	-2,714	-2,269	779	-315
Trade Credits	-242	-494	-186	-160	0
Others	256	237	156	160	-38
<b>Total</b>	<b>-8,552</b>	<b>-15,967</b>	<b>-4,021</b>	<b>-3,120</b>	<b>-5,966</b>

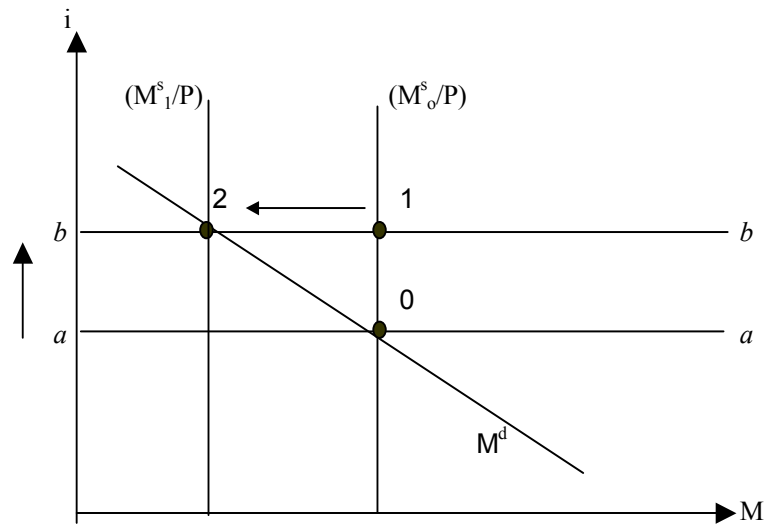
Notes: a) Excluding \$2.1 billion in bank recapitalization

Source: Bank of Thailand

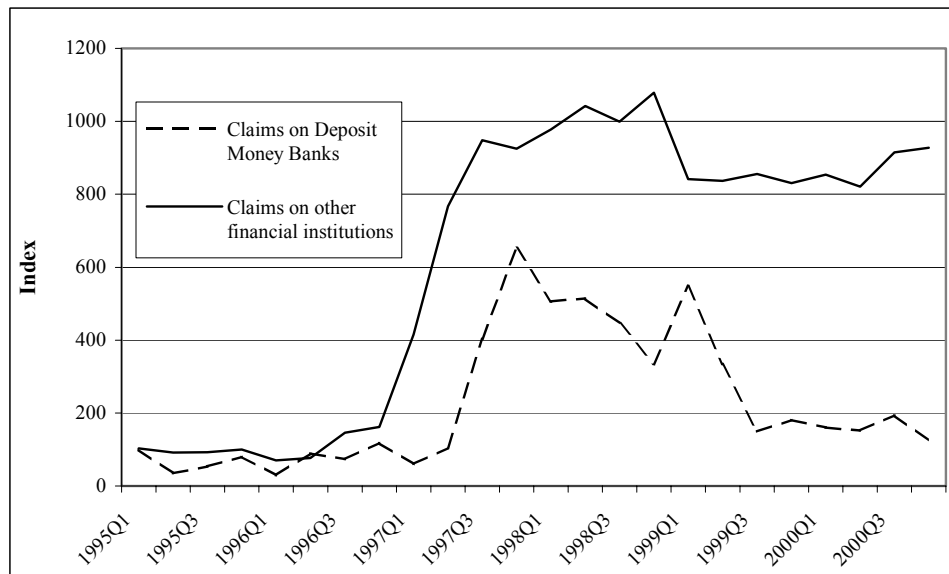
**Figure 1**  
**Impact of Crisis of Confidence**



**Figure 2**  
**The “Do Nothing” Option**



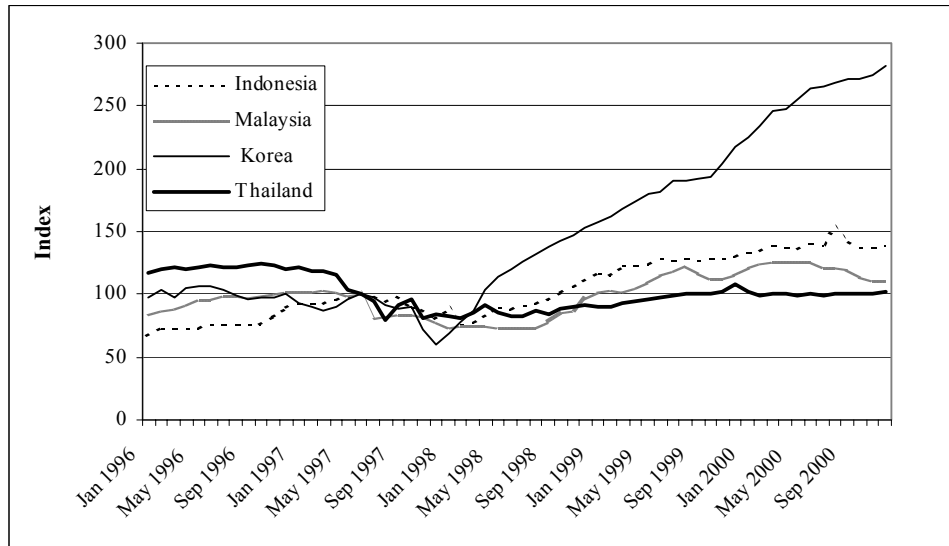
**Figure 3**  
**Liquidity Infusion into Thai Financial System**  
**Index: Q1: 1995 = 100**



Notes: Valuation in Thai Baht

Source: [International Financial Statistics](#), IMF

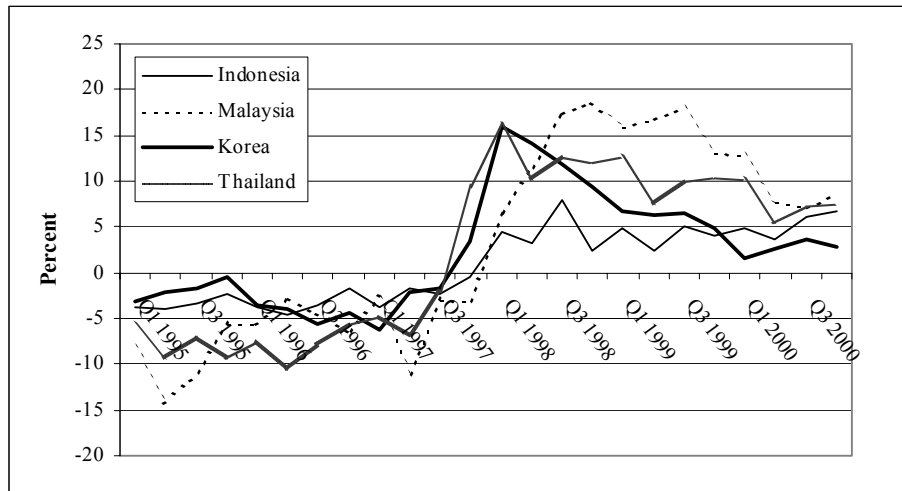
**Figure 4**  
**Foreign Exchange Reserve Holdings in East Asia**  
**Index: June 1997 = 100**



Notes: Valuation in US dollars

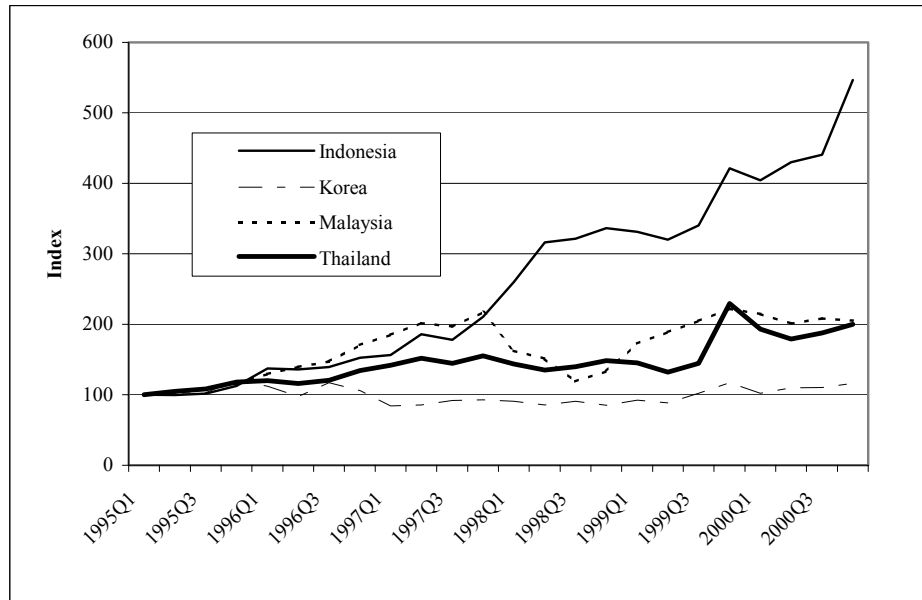
Source: Asian Development Bank-Asia Recovery Information Centre ( <http://aric.adb.org/> )

**Figure 5**  
**Current Account Balances as a Proportion of GDP in East Asia**  
 (percentage)



Source: Asian Development Bank-Asia Recovery Information Centre ( <http://aric.adb.org/> )

**Figure 6**  
**Trends in Monetary Base in East Asia**  
**Index: Q1: 1995 = 100**



Notes: Valuation in Local Currencies

Source: International Financial Statistics, IMF

**Figure 7**  
**Exchange Rate Depreciation: Conventional Expansionary Effects**

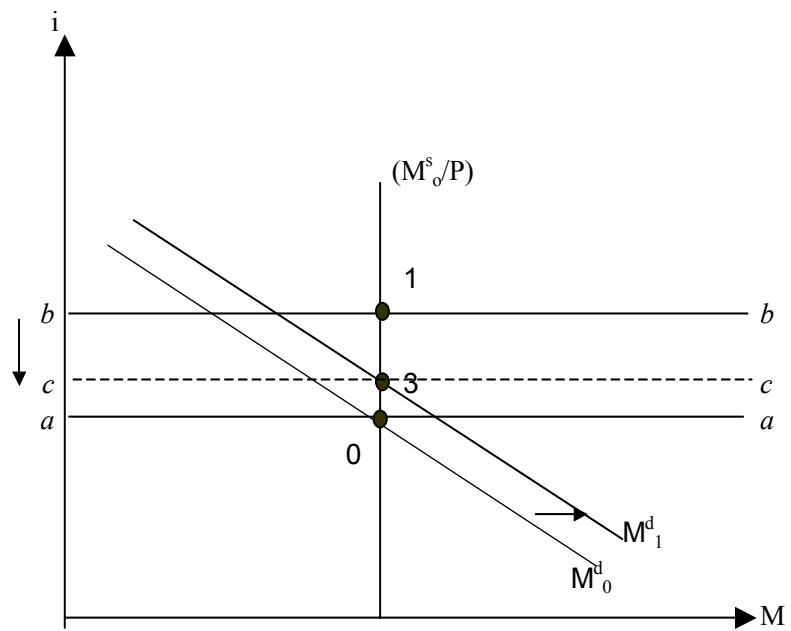
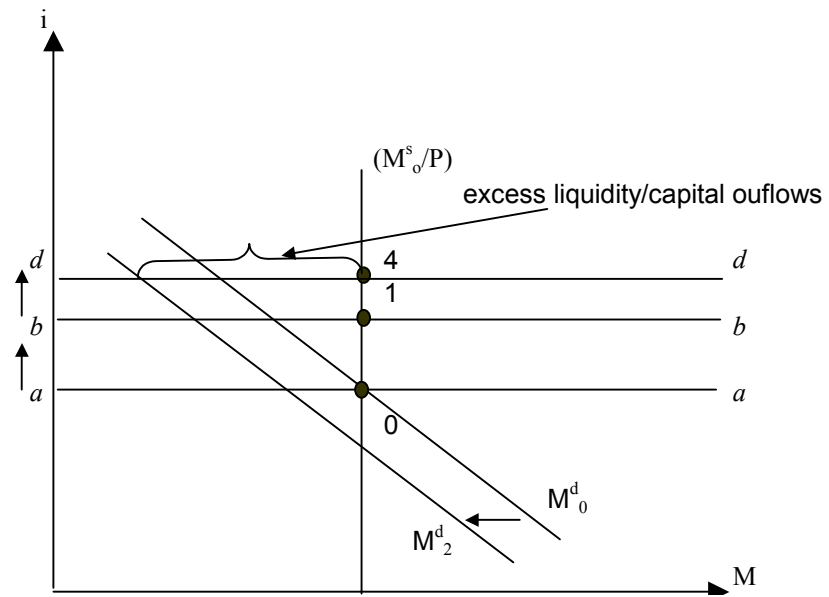
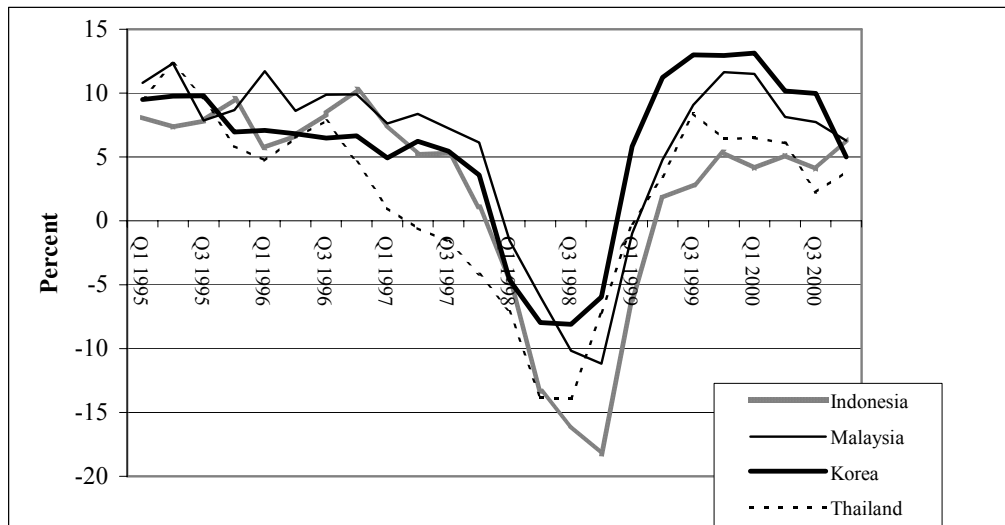


Figure 8  
Exchange Rate Depreciation: Perverse Contractionary Effects

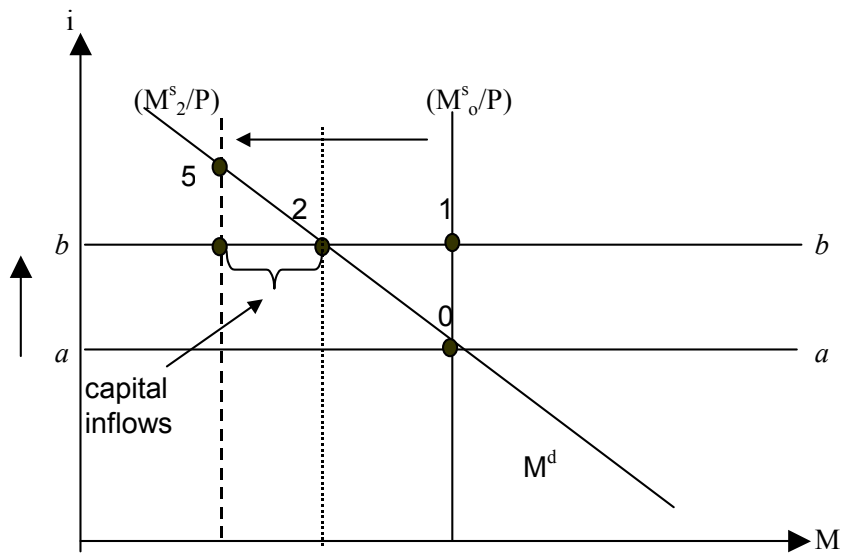


**Figure 9**  
**GDP Growth Rate**  
 (percentage)

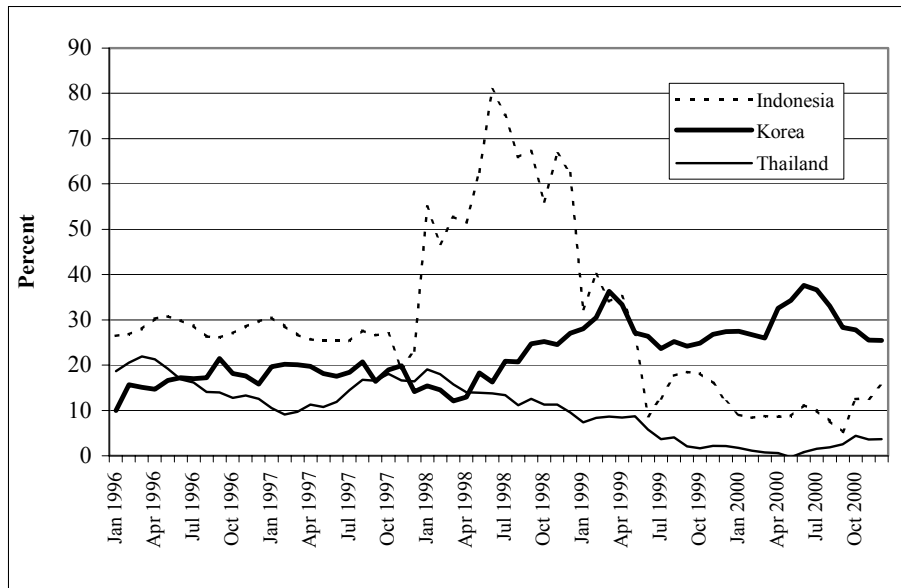


Notes: Year-on-year changes in US dollar terms  
 Source: International Financial Statistics, IMF

**Figure 10**  
**Impact of Interest Rate Hike**



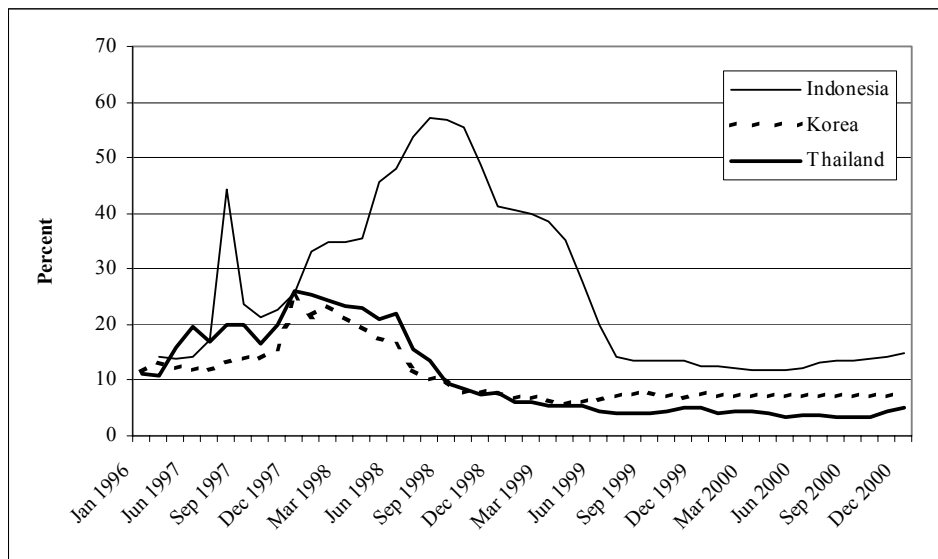
**Figure 11**  
**Growth in Broad Money Supply (M2)**  
 (percentage)



Notes: Year-on-year change in US dollars

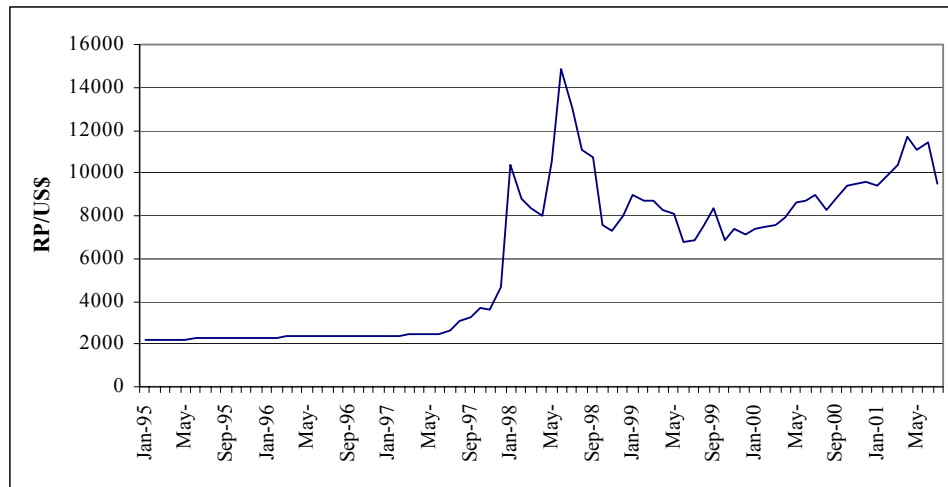
Source: Asian Development Bank-Asia Recovery Information Centre ( <http://aric.adb.org/> )

**Figure 12**  
**Three-Month Interbank Lending Rate in East Asia**  
 (percentage)



Source: Asian Development Bank-Asia Recovery Information Centre ( <http://aric.adb.org/> )

**Figure 13**  
**Bilateral Nominal Exchange Rate: Rupiah per US Dollar**



Source: International Financial Statistics, IMF

## Endnotes

<sup>1</sup> The term “financial crisis” is used here generically to imply a dual crisis of the financial system (“banking crisis”) and the balance of payments (“currency crisis”). The co-existence of banking and currency crises has been found to be the norm during the late 1980s and early 1990s. Most frequently banking crises appear to have taken the lead (Kaminsky and Reinhart 1999), and these twin crises seem to be far more pervasive in developing economies than developed ones (Glick and Hutchison 2000). Banking crises themselves seem to be more likely following financial liberalization, with sharp increases in domestic (bank) lending acting as significant predictors of currency crises. The IMF (1998) has suggested that the greater frequency of banking crises worldwide since the 1980s is “possibly related to the financial sector liberalization that occurred in many countries during this period” (p.115).

<sup>2</sup> No attempt is made here to offer a detailed discussion of the East Asian crisis. Interested readers are referred to Berg (1999), Corsetti et al. (1999) and Rajan (1999).

<sup>3</sup> If a country like Thailand had given greater weight to the yen in its currency management pre-crisis, there would not have been as large a real exchange rate overvaluation of the baht following the sharp nominal appreciation of the US dollar relative to the yen between June 1995 to April 1997 (from 85 to 125 yen/US\$). Pegging against the US dollar was, in hindsight, clearly sub-optimal, whereas pegging against a more diversified composite basket of currencies would have enabled the regional countries to better deal with the so-called “third currency phenomenon” (i.e. yen-US\$ and euro-US\$ fluctuations) which contributed in part to the crisis (Bird and Rajan, 2002).

<sup>4</sup> A distinction should be made between transmission channels that are related to investor sentiment or psychology (termed “pure contagion”) and linkages between countries that are measurable/observable *ex-ante* (referred to as “spillovers” or “inter-relatedness”). Masson (1998) shows how it is conceptually possible for “pure contagion” to make an economy relatively more susceptible to a currency crisis.

<sup>5</sup> This may also be referred to as the “credit crunch” or “liquidity” channel, as it entails a general reduction in the availability of funds.

<sup>6</sup> In other words, there are region-specific or dedicated funds such as the Asia Pacific Fund, the Asian Tigers Fund and others.

<sup>7</sup> Over time, the domestic deflationary pressures ought to lead to an anticipated currency appreciation (assuming that Purchasing Power Parity (PPP) holds), leading to a downward shift of the interest parity line. This will be followed by capital inflows and an increase in money supply until a new equilibrium is attained (the equilibrium is below point 2 but may or may not coincide with point 0).

<sup>8</sup> For details on the Thai crisis and policy response thereof, see BOT (1998) and Rajan (2001).

<sup>9</sup> This is akin to the classic first generation currency crisis models *a la* Krugman (1979) and Flood and Garber (1984).

<sup>10</sup> Though this inevitably is accompanied by sharp recessions as in the case of East Asia in 1997-98.

<sup>11</sup> See Bird and Rajan (2003b) and Rajan and Siregar (2003) for discussions of international reserve management in East Asia post-crisis. The data on reserves excludes swap liabilities.

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<sup>12</sup> Insofar as the devaluation also has some inflationary effects, it is expected that the new equilibrium (3) will be higher than the initial one (0).

<sup>13</sup> Apart from provision of timely and detailed information to the public, Fraga et al. (2003) emphasize the need for a formal process for monetary policy decisions with regular monetary policy committee meetings.

<sup>14</sup> While devaluation may have inflationary effects, we assume that the indirect deflationary effects via output exceed the direct inflationary effects via pass through. This assumption appears valid for the East Asian countries save Indonesia which was not faced by price pressures during the 1997-98 financial crisis (Boorman et al. 2000). Admittedly, this assumption may not be valid for other developing regions, especially those with a history of price instability.

<sup>15</sup> Implicit in this statement is that the PPP holds.

<sup>16</sup> Another indication of monetary policy laxity in Indonesia was the sharply negative real interest rates on offer in that country in 1997 and 1998 (Boorman et al. 2000).

<sup>17</sup> To be sure, the country was also faced with severe socio-political instabilities that undoubtedly contributed to its economic collapse.

<sup>18</sup> Indonesia and Thailand also imposed restraints on offshore trading of their currencies (Ishii et al. 2001).

<sup>19</sup> See Bartolini and Drazen (1997) for a theoretical model in which capital restraints can convey information about a policy maker's preferences to the market.

<sup>20</sup> For elaborations of these benefits, see Mathieson and Rojas-Suarez (1993). Also see Bayoumi (1998) and Obstfeld (1998) for comprehensive surveys of financial globalization and international capital mobility.