Lessons from East Asia's Crisis and Recovery

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Abstract

This paper provides an empirical analysis of the currency crisis and recovery in three East Asian countries, Malaysia, Thailand and South Korea. Using macro economic data for the three countries over a 13 year period, 1990 – 2002, the paper examines the factors leading to the crisis, the policy response to the crisis, an evaluation of their recovery and the lessons that can be learnt. During the seven year period prior to the crisis, all three countries experienced very rapid GDP growth. Collectively, average annual GDP growth was 11.5%. This growth however was fueled by rapid monetary growth, current account deficits, negative S-I gaps and short term capital inflows. As a result, serious structural weaknesses were built. Overvalued exchange rates enhanced the vulnerabilities. The two year period of crisis, saw sharply negative GDP growth in all three countries. These were accentuated by the contractionary policies. While Thailand and South Korea had to turn to the IMF and adopt the IMF package, Malaysia took the 'unorthodox' route of capital controls and currency peg. The paper argues that despite different policy stance the underlying responses were the same. All three countries experienced a V-shaped recovery. Malaysia's controversial policies appears to have provided no additional advantage. The paper concludes with an outline of key lessons for policy makers from the experience of the three countries.

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East Asia's currency crisis of 1997/98 was probably the most contagious of recent economic crises. Several countries, Malaysia, Thailand, Indonesia, South Korea and the Philippines were hit directly while others such as Taiwan, Singapore and especially Hong Kong were badly affected[1]. What began as a speculative attack on the Thai Baht in July 1997, quickly spread as 'contagion' to the other countries. Over the 3 month period from July to October 1997, the Baht had fallen close to 40%, the Malaysian Ringgit and Philippine Peso by about 27%, the Indonesian Rupiah by about 40% and the Korean Won approximately 35% against the US dollar. For countries that had been dubbed "miracle economies" this was a serious blow.

The currency crisis quickly metamorphosed into what economists call a "twin crisis". In essence, slumping currencies and the policy response to defending them, set off in turn, a domestic banking crisis. This happened in particular to four countries, S. Korea, Thailand, Indonesia and Malaysia. Indonesia, faced with both economic and political crises went into a tailspin. Singapore and Taiwan largely escaped unscathed while HK had to take "innovative" steps to continue defending its currency peg and its property and stock markets. Clearly, the impact was differential, some countries were affected much more than others, in obvious relation to the extent of vulnerability that had been built. If most observers had been surprised at how quickly these countries had succumbed to crisis, their sharp and rapid recovery would have been equally surprising. Especially since, the policy response, at least where publicly announced government stance was concerned, was indeed different.

[1] *In differentiating between crisis and affected counties we use the standard definition of a 25% depreciation of the currency to denote a crisis.*

OBJECTIVE & MOTIVATION

The objective of this paper is to undertake an empirical analysis of the factors leading to the crisis, the policy response of the sample countries, an evaluation of their recovery and the lessons that can be learnt. In line with this, the paper is designed to address the following four research questions; i) How had these countries performed in the years leading to the crisis? ii) What was the policy response to the currency crisis and what similarities/differences were there in policy response across countries? iii) How have the sample countries performed post crisis and iv) what lessons can we learn?

We address these questions by analyzing the macro economic data of three countries, Malaysia, Thailand and Korea over a 13 year period, 1990 to 2002[2]. The 13 year period is divided into 3 time segments. The period 1990-96 the pre crisis period, 1997 and 98 which is considered the period of the crisis and 1999 – 2003 the period of recovery. The other well known crisis country, Indonesia has been left out since its current problems are heavily confounded by political rather than economic ones. Except where otherwise stated, all data is sourced from the Asia Recovery Information Center (ARIC) of the Asian Development Bank. The paper is divided into 5 sections. Section 2 below, provides an overview of relevant literature and evaluates the economic performance of the sample countries in the 7 years prior to crisis, 1990 – 96. Section 3, examines the crisis period 1997 and 98 and the policy response. Section 4 outlines the recovery, while the final section, evaluates the recovery and analyses the lessons learnt.

[2] *Where available data for the first two quarters of 2003 is also used.*

SECTION 2

2.1: Overview of Literature

The need to understand currency crises has received much attention. This, has largely been due to the increased frequency of such crashes. Several alternative explanations have been put forth to explain currency induced crises. Broadly speaking, we could categorize these into four broad categories[3]; (i) The existence of structural weaknesses and/or policy distortions. (ii) Moral hazard (iii) Self fulfilling panics and (iv) Temporary illiquidity.

Structural Weaknesses and/or Policy Distortions

This is probably the most often cited explanation for currency induced crises. Krugman (1979), views currency crises as speculative attacks resulting from deteriorating fundamentals. Budget deficits, excessive monetary growth, current account deficits and reserve losses are typical pre-conditions. When underlying fundamentals are inconsistent with the existing pegged exchange rate, a speculative attack results. More recently Frankel & Kose (1996), using data for 100 countries over a 20 year period, find that there were several common features of crash countries. Among these were (i) very high levels of debt financed by commercial banks on variable interest rates, sharp reductions in FDI inflows and overvalued exchange rates. Goldfajn and Valdes (1997) also find that exchange rate overvaluation are good predictors of impending crises. Since an exchange rate regime is government determined, overvaluations are nothing but purely policy induced distortions.

[3] *See IMF Working Paper WP/01/154*

Moral Hazard

Moral hazard arising from the existence of either actual or implicit guarantees have been put forth as yet another explanation. Most of the work have been within the asymmetric information framework. Frankel (1999) and Hahn & Mishkin (2000)[4], argue that the combination of informational asymmetries, implicit guarantees and lack of transparency accentuate adverse selection problems making the underlying economies vulnerable. These vulnerabilities remain masked until just before the crisis.

Illiquidities

Feldstein (1998, 1999)[5] and Calvo & Mendoza (1996) point to temporary illiquidities arising from rapid build up in short term external debt. A crisis can be touched off when a country's ability to service outstanding short-term debt appears questionable. Calvo & Mendoza, argue that when large gaps exist in the stock of liquid financial assets and gross reserves in the presence of a pegged exchange rate, vulnerability builds. Given these imbalances, a sudden shock can quickly drain reserves, making the fixed exchange rate unsustainable.

Herding & Self Fulfilling Panics

Herding leads to self fulfilling panics because rational investors would want to pull out their money if they believe other investors would do the same. When all investors hit the exits at the same time, a self fulfilling crisis begins. When they decide to pull out of other markets, contagion is the result. Radelet & Sachs (2001) and Sachs, Tornell and Velasco (1996) propose herding and self fulfilling panics as causes of crises. The latter authors, analyzing data for 20 emerging markets, argue however

[4] *In IMF Working Paper WP/01/154*
[5] *In IMF Working Paper WP/01/154*

that for contagion and crisis to happen, there must have been some "degree of previous misbehavior".

Depending on how one looks at it, the Asian Currency Crisis could be explained by all 4 of the above propositions. While factors like a self fulfilling panic or temporary illiquidity could have touched off the crisis, this paper will argue that prior to the crisis, there existed serious structural weaknesses and policy distortions in all three sample countries.

2.2: Pre-Crisis (1990 – 96)

If there is one feature that can characterize economic performance in the three sample countries prior to the crisis, it must be the stellar growth record. Over the seven year period, 1990 – 96, all three countries experienced very rapid GDP growth. Table 1 below shows the compounded annual growth rate and the cumulative growth for the period.

Table 1

1990 –96 Nominal GDP Growth %

	Compounded Annual Growth	*Cumulative Compounded Growth*
Malaysia	11.63%	116%
Thailand	11.22%	110.6%
S. Korea	11.7%	117.4%
Average	11.52%	114.67%

The three countries had an average annual growth of 11.52% over the seven year period. This is indeed impressive performance by any measure. With cumulative growth above 100%, all three countries had more than doubled their GDP in the seven year period. It is not surprising therefore that these economies were referred to in

glowing terms as “miracle economies”. Yet in the subsequent two years, 1997 and 98, all three countries we reeling in trouble. So what went wrong?

The key to understanding what went wrong lies in examining how these GDP growth rates were financed. The growth pump was being primed by three broad means; a) rapid monetary growth, (b) large current account deficits and (c) capital inflows.

a) Rapid Domestic Monetary Growth

Rapid domestic monetary growth appears to be a common feature of all three countries in the pre-crisis period. Table 2 below shows how much the monetary lever had been used to fuel growth.

Table 2
1990 – 96, Growth in Real GDP, M2 and Domestic Credit

	Real GDP	***M2***	***Domestic Credit***
Malaysia	7.33	15.5	20.1
Thailand	6.86	13.6	21.3
Korea	6.31	14.6	17.8
Average	6.8	14.6	19.7
United States	*1.75*	*2.14*	*NA*

Two things are evident from the above table. First, money supply as measured by M2, has grown more than twice the rate of growth in real GDP. Second, Domestic Credit had grown approximately three times real GDP. Such deviations between real and monetary growth can be harmful when sustained over a period of time. As we will see later, this led to serious distortions/vulnerabilities.

b) Current Account Deficits; Negative Savings – Investment Gap.

Table A17 in Appendix shows the Current Account Balance as a percent of GDP. Current Account deficits have been pointed out as one of the key reasons for the

currency crisis. Notice that all three countries had current account deficits for every one of the seven years before the crisis. In many instances the percentage was larger than the 5% thresold which economist consider a risk level. There are a number of reasons for this consistent deficit. The first reason is the obvious push in all these countries for growth. Rapid GDP growth requires heavy investment growth. Thus, the import of capital goods increased and import growth outpaced that of exports in several years. (Tables A4, A5 in Appendix).

There is yet another way by which a high growth policy can lead to current account deficits. From a theoretical viewpoint, a country is likely to run current account deficits if it has a savings – investment gap. Essentially, the savings – investment gap reflects the net imports needed to finance the gap. Though East Asia is legendary for its high savings rate (approximately 35% of GDP) the very high investment rates needed to sustain the high growth objective has meant that the S-I gap was negative for all three countries in the seven years pre-crisis. Malaysia and Thailand had a negative S-I gap averaging 6.2% of GDP. Korea's was much lower at 1.7% (see Table A6 in Appendix).

c) Capital Inflows : - Reliance on Short-Term Inflows

The flip side of a current account deficit is a capital account surplus. Holding reserves constant, a current account deficit must be matched by a capital account surplus. What this implies is that; the net imports of the current account will have to be financed by foreign capital inflows. As such, all our crisis countries have had capital account surpluses; meaning strong capital inflows. Large capital inflows in itself is not a problem. It is the form and composition of the inflows that really matters. Inflows in the form of Foreign Direct Investment (FDI) are long term in nature and add to productive capacity. However, inflows in the form of Portfolio Investments or short term

deposits/borrowing can be destabilizing. With the opening of China and other countries like Vietnam and Cambodia, the traditional recipients such as our sample countries saw declining FDI inflows. Their high growth strategies however meant that capital inflows were needed to continually fuel the growth.

Though FDI inflows still constituted a major portion, short term inflows in the form of portfolio investments and borrowing were increasing. Tables A7, A8 and A9 of Appendix show the increased reliance on loans and the composition of these loans. In each case we see a gradual increase in total Foreign Loans both in absolute terms and as percent of GDP. Total foreign loans as a percentage of GDP approaches 40% for Thailand and exceeds 25% for Korea. Malaysia's foreign loans stand at 22% of GDP as at December 1996. Table A9 shows the composition of these loans. Short term loans constitute more than two thirds of total loans for Korea. Thailand's exceeds 65% while Malaysia's is at 56%. Clearly, in all three cases, there has been a heavy reliance on short term inflows.

From Structural Weaknesses to Vulnerabilities

If the above factors show the structural weaknesses that were being built, a number of other policy induced distortions aggravated these weaknesses. Two such factors are worth noting. The first had to do with the exchange rate regime while the second financial liberalization.

All three sample countries were on quasi peg systems with their currency being managed within narrow bands. While such a system reduces currency volatility, it requires that domestic monetary policies be in conformity with that of the currency to which it is pegged. Since in all three cases the "peg" exchange rate policy had been to

keep the domestic currency within a narrow band against the US$, monetary policy deviations were putting stress on the exchange rate. We saw in Table 2 above, how monetary growth in the sample countries was several fold that of the US for the 1990 – 96 period. Additionally, annual inflation rates for the 3 countries averaged 5% for the same seven year period, while that of the US was 2.6%. Thus, by all parity measures, their currencies should have depreciated against the US$. However, since the exchange rate regime was to keep the currency within narrow bands, the currencies were becoming overvalued in real terms even though they were about the same in nominal terms. Going by Purchasing Power Parity (PPP), based on annual CPI numbers, the Ringgit, Baht and Won had a percentage overvaluation as at end December 1996 of 12.5%, 31.3% and 35.4 respectively. Coupled with the fact that all three countries had low levels of international reserves, with the lowest levels recorded in 1997[6], meant that these currencies were ripe for a speculative attack. (Table A12).

When the exchange rate regime is seen with the financial liberalization that had been taking place, the build up in vulnerability seems to have been inevitable. Critics have pointed to the sequencing of liberalization as having been the problem. Instead of first strengthening the domestic banking sector before enabling them to source funds overseas, the opposite appears to have been the case – at least in Thailand and South Korea. In 1993 for example, the Korean government removed controls on short-term foreign borrowing by Korean banks[7]. Since this was done while controls on direct access to foreign capital markets by Korean firms remained, the proportion of short term debt exploded and created a serious maturity mismatch. A similar situation was played out in Thailand. There, as part of Capital account liberalization, the Thai government established "The Bangkok International Banking Facility" (BIBF). Thai Banks used the

[6] *The low 1997 amount may also be due to reserves lost in defending the currency.*
[7] *See- IMF Working Paper (WP/01/154)*

facility to raise foreign currency loans which were then recycled domestically as Baht loans. The rationale was the large interest spread that they were earning. That this was extremely risky from a currency exposure viewpoint was ignored. Thus in both countries the banking system had built up huge foreign currency loans and exposure[8].

On the eve of the crisis in mid 1997, all three economies had also built serious financial sector fragility. The main contributor to this was the huge build up in leverage – both domestic and foreign. The build up in leverage being caused by the earlier monetary policy looseness and capital inflows. Asset bubbles, particularly, in the sectors most malleable to speculative activity, properties and stocks (shares) were a feature in all three countries.

Not only were the banks that financed this leveraging over extended, their situation was worsened by skewness in their direction of lending. In Malaysia for example, more than half of all loans were directed at the Broad Property Sector and financing of shares. Among the three countries, it was in Thailand that the property market bubble was worst. In Korea the lending was mostly to the Chaebols (conglomerates), resulting in debt/equity ratios of 4 or 5 times for these firms.

The result was that the domestic corporate sector was both highly leveraged and had unhedged foreign currency exposures. The domestic banking sector on the other hand, in having done the lending, was overextended and in Korea and Thailand had financed the lending with large amounts of foreign currency borrowing.

[8] *The Malaysian banking system did not have the same extent of foreign currency exposure because of the Central bank's enforcement of "The Exchange Control Act".*

SECTION 3: The Crisis Period – 1997 & 1998

The catalyst that led from vulnerability to full blown crisis was the speculative attack on the Thai Baht in July 1997. The initial attack worsened and spread as contagion to the other East Asian countries when it was revealed that the Thai central bank's level of usable reserves was much less than what was originally reported.

The speculative attack itself was not new. These same currencies had come under a similar attack in early 1995 following the Mexican Peso crisis. Whereas they had successfully defended their currencies in 1995, this time it was different. What was different this time was the massive capital outflow. With hindsight, it now appears that more than the speculative attack, it was indeed the capital outflow that led to full blown crisis. In Thailand for example, the estimated capital outflow as percent of GDP was 26% within the first six months of the crisis. This supercedes the largest ever previous record reversal of 20% of GDP for Argentina in the 1980s. The massive capital flight was probably the reaction to the vulnerabilities that had been building up and now laid bare by depreciating currencies.

Three things worked against the Central banks in their efforts to stabilize their currencies. Capital flight, low reserves and interest rates. Faced with capital outflows that were pressuring their currencies and low reserves with which to defend, the central banks had little choice but to float their currencies and raise interest rates to prevent a free fall. Given the highly leveraged nature of their domestic economies, raising interest rates was extremely painful and counter productive in some ways. Clearly, pre crisis events had provided speculators with the classic one-way option.

With depreciating currencies, rising interest rates became the mechanism by which the currency crisis was transmitted into a domestic banking sector crisis. By early 1998, all three countries showed signs of what in the literature is known as the "twin-crisis". The banking sector in all three countries took a hit. As the corporate/real sector began to reel under sharply increased interest rates, Non Performing Loans (NPLs) spiked. The banking was faced with near collapse. Table 3 below, provides a summary of key economic variables for the two year crisis period.

Table 3
Crisis & Macro Variables

Real Sector	**1997**		**1998**	
Real GDP Growth				
Malaysia	7.3		-7.4	
S. Korea	5.0		-6.7	
Thailand	-1.4		-10.5	
Consumption Expenditure Growth				
	Private	Public	Private	Public
Malaysia	9.3	-10.2	8.9	-8.9
S. Korea	9.1	-11.7	40.6	-0.4
Thailand	4.4	-11.5	1.6	3.9
Gross Domestic Investment Growth				
Malaysia	12		-44	
S. Korea	-8		-38	
Thailand	-22		-51	
Monetary Sector - M2 Growth %				
Malaysia	23		2	
S. Korea	14		24	
Thailand	16		10	
3 Month Interbank Rate				
Malaysia	___		___	
S. Korea	14.1		14.6	
Thailand	17		16.8	
Domestic Credit Growth				
Malaysia	29.3		-2.7	
S. Korea	23.3		11.6	
Thailand	34.3		-1.3	
Capital Acct. Balance % of GDP				
Malaysia	-6.0		-7.2	
S. Korea	-4.4		-4.8	
Thailand	-6.0		-4.9	
Unemployment Rate (%)				
Malaysia	2.6		3.2	
S. Korea	2.6		6.8	
Thailand	0.9		4.4	

The severity of the crisis is evident from the GDP growth numbers. All three countries experienced sharp contraction in growth over both years – particularly in 1998. Average GDP growth for the 3 countries approximates negative (-) 8% for 1998, a sharp contrast to the 11.5% average for the seven years crisis. The sharp fall in GDP growth was due to significant reduction in consumption expenditure (especially in public consumption) and in Gross Domestic Investment (GDI). GDI fell an average 40% in 1998.

The Monetary Sector saw an equally drastic contraction. M2 growth reduced sharply in both Malaysia and Thailand. Korea however, recorded an increase in M2 growth. Monetary contraction was most evident where interest rates and credit growth were concerned. 3 month interbank rates, already high as part of currency defense in 1997 remained at approximately 15% the subsequent year. With banks already convulsing from rising NPLs, they simply cut back on new loans. Domestic credit growth turned negative in 1998. Again Korea was the exception, credit growth continued, albeit at half 1997 rates.

The sharply contractionary policies, both fiscal and monetary were sensible. They were aimed at currency stabilization and restoring confidence. The earlier mentioned capital outflows are evident when the Capital Account Balance as percent of GDP is examined. All three countries show negative balances for both years, implying net capital outflows. Interestly, Malaysia has the highest negative balance as percent of GDP. Table A 11, shows the portfolio investment flows in US$ billions. Once again it is Malaysia that appears to have had the highest outflows. In fact Malaysia continues with negative portfolio flows in every subsequent year. The unemployment rate, an indicator of the pain and social cost to the economy shows a rise in all three countries. The

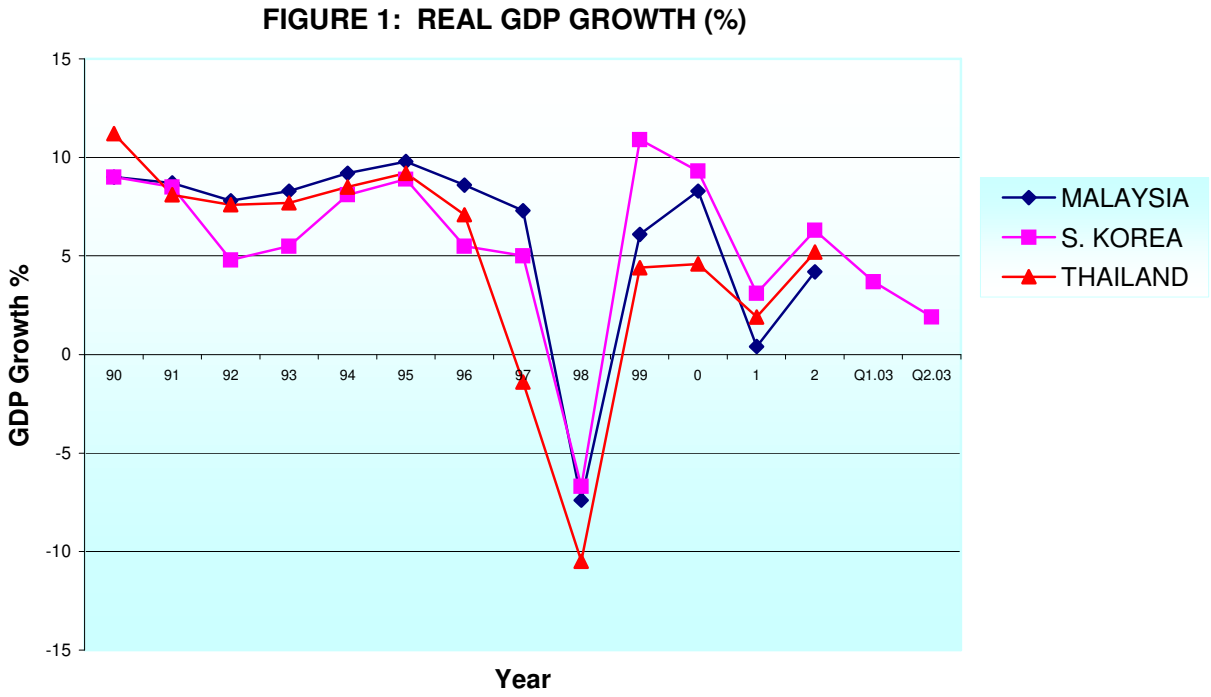
steepest increase being for South Korea. Still, given the extent of the crisis, these unemployment numbers are surprisingly tame. With a 6.8% unemployment rate at the depth of the crisis (Table A13), and a low inflation environment, the social cost would not have been substantial. This is especially so, when considering the fact that most countries have higher unemployment even in normal times. Overall, as Figure 1 below shows, the period of the crisis, effectively about 4 quarters, was sharp but short.

SECTION 4: Post Crisis Recovery

If policies during the crisis were contractionary, they were aimed at stabilization. This stage lasted from about the third quarter of 1997 to approximately the third quarter of 1998. With some degree of stabilization in place a second stage of pro-growth policies were put in place. Here the policies were a reversal of the earlier ones and were markedly expansionary.

If the depth and speed of the downturn was surprising, the sharp and quick recovery was equally surprising. By about the 2nd quarter of 1999, real GDP growth was positive for all three countries. Strong growth in the global economy in 1999 and 2000 helped in no small measure. With all three countries registering positive growth in every subsequent year, the recovery was real. By far the strongest recovery was that of South Korea's. The growth numbers in Table A1 and their plot in Figure 1, shows a decline and recovery pattern that appears the same for all three countries. Yet, this masks two key differences among the countries. The first was the very different government policy stance to the crisis and second, the vastly differently growth drivers fuelling the recovery.

Figure 1



4.1: Different Policy Stance

Though the macroeconomic policies undertaken to counter the crisis were similar, the policy reaction was different. Faced with large capital outflows and a potential implosion of their domestic economies, the crisis countries had to either put a stop to further outflows or seek new inflows to avoid collapse. It is here that vastly different paths were taken. Malaysia chose to impose capital controls and peg its currency, while both Thailand and Korea chose the route of IMF financing. Given the immensity of the crisis, the IMF put together large official financing packages. These amounted to a total US$58 billion for Korea, $17 billion for Thailand and $36 billion for Indonesia[9]. The IMF packages had 3 initiatives, (i) official financing, (ii) requirements for structural reform and (iii) macroeconomic policies. As we saw in the previous section,

[9] *See - Lane (1999)*

despite these different paths, the macroeconomic policies to counter the crisis were largely the same.

4.2: Different Growth Drivers

While on the surface the recovery appears largely similar for all three countries, a deeper analysis of the data points to quite different growth drivers. These differences are most obvious when comparing Malaysian and Korean data. Malaysia's recovery appears to have been fueled by Government Consumption and very strong export performance. Korea's recovery appears much more broad based with less reliance on government expenditure.

In examining real sector variables of Tables A2, A3 and A10, A14 which show Private, Public consumption, Gross Domestic Investment and Foreign Direct Investment, the differences are glaring. While Malaysia has the highest public sector consumption for 1999 and subsequent years, Korea has the highest private sector consumption numbers. Table A2 confirms this. The government budget balance has been negative since 1998 for Malaysia and continues to grow larger as a proportion of GDP. Korea's budget balance on the other hand, has been positive since 2000. The GDI and FDI numbers show both a sharp increase in 1999 and strong subsequent performance for Korea. The portfolio investment data – Table A11, shows a similar picture. While strongly positive for Korea, Malaysia (and Thailand) experienced portfolio outflows in each subsequent year.

The monetary sector data, reinforce the differences between the two countries. Despite sharply reduced interest rates (3 month interbank rate Table A20), growth in Bank Credit to Private Sector and overall Domestic Credit growth (Tables A15, A16)

remain anaemic for Malaysia but are strongly positive for Korea. Performance in the external sector as shown in the Current Account Balance, tells a different story. The Current Account which was in deficit for all three countries every year pre-crisis, turns positive (Table A17). This reversal is most prominent for Malaysia. Testimony to the very strong export performance on the back of an undervalued currency.

Unemployment, NPLs and Foreign Reserves : Korea Vs Malaysia

We examine three other variables, the unemployment rate, NPL (non performing loans) and Gross International Reserves to compare the relative recovery in our sample countries. Table A13 shows the annual percentage unemployment rate. In 1998, Korea's unemployment rate of 6.8% was the highest and more than twice Malaysia's rate. By 2002 however, both Korea and Thailand have unemployment rates lower than Malaysia's. Despite the recovery, Malaysia's unemployment appears to have grown marginally higher. NPLs, seen as barometer of banking sector recovery, is lowest for Korea[10]. At 2.2% of total commercial bank loans, Korean NPLs[11] are barely a quarter Malaysia's rate of 9.2% and Thailand's 15.9%. Korea's better relative performance however, is most evident in the build up of Gross International Reserves. Measured in US$ billions, Table A12 shows Korea's reserves to be marginally lower than Malaysia's in 1997. As at end 2002 however, Korea's reserves are almost 4 times Malaysias.

4.3: Structural Reforms

Since leverage was at the heart of the crisis, the main aim of structural reforms in all three countries was "deleveraging". This was carried out in two steps. The first, to clean up the mess from the crisis and second, to strengthen the cleaned out structure that remains. The first step involved the intervention by way of capital infusion to

[10] *See; Asia Economic Monitor 2003.*
[11] *Korea's much smaller percentage is also reflective of the much faster growth in bank credit in post crisis period.*

resuscitate viable institutions while closing down the unviable ones. These are standard IMF procedures and therefore applied in Thailand and Korea. Where Malaysia differed, it was in absorbing rather than closing down weak entities. Absorption was by means of mergers/acquisition. The second step of strengthening the system was fairly similar in all three countries.

Since there was a "twin-crisis", the structural reforms were aimed at both the corporate and banking sectors. In Malaysia for example, three key institutions were established to initiate the reforms. There were the CDRC (Corporate Debt Restructuring Corporation), Danaharta and Danamodal. While the first two had a role in both steps of the structural reform, Danamodal was intended only for the first step. It's role was to provide the capital injection needed to resuscitate the weaker banks that were on the verge of collapsing. Capital was provided in exchange for an equity stake. In Thailand and Korea this task was undertaken directly by the central banks. Malaysia's CDRC was tasked with working out the problems of the heavily indebted firms. This was done largely through rescheduling of debt, some asset sales and acquisitions. Since most of Malaysia's heavily indebted firms had little foreign currency denominated loans, relative to the other two countries, CDRC's work of having to work with the local lenders was much easier.

The third agency, Danaharta was the classic asset management company (AMC). It's counter parts in Korea and Thailand were the KAMCO (Korean Asset Management Co.) and TAMC (Thai Asset Management Co.). The AMCs were tasked with relieving the banking sector of NPLs by carving out the bad-loans. This was to be done by purchasing problem loans from banks, repackaging/inventorying them until they can be sold; - usually by public tender/auction.

Relative to the other two countries, Malaysia's Danaharta has probably been the most effective. Early changes in legislation to give the agency legislative muscle went a long way in enabling Danaharta to move quickly to a resolution. At the other extreme is TAMC. Lacking legislative backing, the Thai AMC was left to negotiate with banks on voluntary terms, thereby making it much less successful. As such, inclusive of assets still held by TAMC, the NPL ratio for Thailand is 18%. For Korea and Malaysia when assets held by their AMCs are included, NPL ratio is 8% and 9.6% respectively. Korea's ratio being smaller due to the much faster growth in domestic credit in the post crisis period. If expected recovery rates are an indicator of the efficiency of an AMC, Malaysia's Danaharta has outpaced the others with a 56% recovery rate. This compares to KAMCO's 47% and TAMC's 45%.[12]

In addition to AMCs, the banking sector in all three countries underwent major restructuring. Weaker banks were merged or allowed to be acquired by stronger ones. In Thailand and Korea, foreign acquisition or foreign equity participation in domestic banks was made possible. This was in line with IMF policies to do away with weak banks. In Malaysia, a wave of central bank orchestrated mergers led from 37 commercial banks pre-crisis to ten currently.

Section 5: Conclusion – What Can We Learn

In identifying the lessons that we can learn from the crisis and recovery, we begin with a synopsis of our analysis thus far. A number of commonalities are apparent. In the period leading to the crisis, there clearly were structural weaknesses and vulnerabilities in all three countries. These structural problems were very much in line with Krugman (1979). The hypothesis that this was a self-fulfilling crisis *ala* Sachs et al (1996, 2001), implying a previous degree of misbehavior is also applicable.

[12] *See; ADB, Asia Economic Monitor, July 2003.*

The key commonality across all three countries is the similarity in growth patterns during the 13 year period of this study. All three had very impressive growth pre-crisis, were hit just as hard during the crisis and had an equally impressive recovery. The reason for this is obvious, all three countries had similar macroeconomic and structural reform policies. This, despite Malaysian government rhetoric that they were on an unorthodox path, whereas Korea and Thailand on orthodox IMF style policies. Malaysia's unorthodox package appears largely similar to the IMF package. What was dissimilar was the Capital Controls and Currency Peg announced on 1st September 1998. This begs the question, how much more did the capital controls and peg help Malaysia? Based on our analysis thus far, one would be hard pressed to show any added advantage from these policies. These policies probably had more to do with the subsequent political problems in Malaysia than with economic rationale. The reputational cost obviously did not lead to better payoff in economic terms. To be sure, Malaysia has seen less bankruptcies and the attendant increase in unemployment during the crisis. While this would have reduced the pain, it does not help with long term competitiveness.

In the event, it was classic Keynesian style fiscal expansion and export growth benefiting from undervalued currency, that led to recovery. Including fiscal 2003, Malaysia would have had its sixth consecutive year of budget deficit (Table A18), much higher than Thailand's and in sharp contrast to South Korea's budget surpluses. Neither of these two growth drivers are sustainable over the long term. Private consumption, domestic investment, credit growth and foreign capital inflows must recover if growth is to be sustainable.

While Thailand's recovery and growth resembles that of Malaysia, Korea has outpaced both. In addition to faster GDP growth, Korea which followed the orthodox IMF package has done better when we go by factors such as, unemployment rate, NPL, International Reserves, Market Capitalization[13] and overall breadth of recovery.

Lessons

So, what can we learn from the experience of these countries? A number of useful lessons can be deduced. The first and most obvious lesson is that vulnerability should be avoided. This means one has to be watchful about the build up of leverage / debt financing. Beyond a low threshold, the financing of such debt with foreign currency exposures must be avoided. Since the need for debt and external financing arises from the need to grow at any cost, governments must reorientate growth strategies. A slower but better quality growth strategy makes sense. One that has a better absorption rate of domestic resources and higher value added.

The sequencing of financial liberalization is certainly important. As we saw in the case of Thailand and Korea, inappropriate sequencing can be a major cause of vulnerability. In this regard, unless the banking system is strong and globally competitive, domestic banks should not be allowed to take on huge currency exposures. Building a strong banking system would not be possible under the current protectionist mode. Banking systems should be subject to market discipline. Capital account liberalization while simultaneously protecting the domestic banking system may lead to the worst of both situations.

[13] *In 1996, market capitalization in Malaysia and Korea was US$319 bil. and US$139 bil. respectively. In 2002 however, Malaysia's capitalization had fallen to US$127 bil. whereas Korea's risen to US$219 bil.*

Developing less bank reliant financial systems would also be helpful. In all three crisis countries the financial sector was heavily bank dependent. The problem with this is that, risks get concentrated. Risks will be dissipated if alternative financing mechanisms are enhanced. For example, attention should be paid to building better bond and money markets.

The experience of the three countries shows the importance of avoiding exchange rate misalignment. Pegged or quasi pegged systems are incompatible with independent monetary policies in the presence of free capital flows. Central banks as we saw, often ignore this incompatibility – with disastrous consequences. Quasi pegged systems also lulls the private sector into taking on unhedged foreign exchange exposures. Currency Risk management becomes the obligation of the Central bank. This again is unsustainable over the long term. There is a need to 'privatize' risk management by developing the markets and tools for hedging. Central banks should also pay close attention to the ratio of useable foreign reserves to short term obligation. A low ratio is a sure sign of vulnerability.

In addition to the above obvious ones, there are three implicit lessons to be learnt from the experience. The first is that, the old government directed industrialization models may not be workable anymore. The worst culprits in all three countries had been the state connected conglomerates that were the result of such industrialization. It is these entities that had taken on the highest debt and foreign currency exposures.

The second implicit lesson is that temporary capital controls may not be as bad as previously thought. Malaysia's capital controls, were highly selective and effectively short in duration. Today most of the controls have been relaxed. What hurt most was

the one year moratorium on capital outflows. (Except where it involved trade). While most economists have little objection to temporary capital controls – especially on capital inflows, the moratorium on outflows was highly controversial. Many of the dire predictions made about the controls have not borne out. While it is still early to asses the long term consequences of the policy, going by our post crisis data, Malaysia has not been worse off. We concluded earlier, that despite the controversial policies Malaysia's performance does not show any added advantage. Thus, one can only conclude that if Malaysia was not better off with these policies, it was no worse off either.

A final implicit lesson, perhaps even an obvious one is that IMF policies have worked. One could always argue about the harshness of the policies and its social impact. But the fact remains that both Thailand and Korea have snapped back into strong recovery. The sharp V-shaped recovery following IMF intervention is not new nor peculiar to these two countries. Mexico is a case in point. Following a similar currency crisis and capital flight, Mexico went into a tailspin in December 1994. However, by end 1996 the economy had almost fully recovered. Mexico too had been on an IMF package.

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APPENDIX

TABLE A1: REAL GDP GROWTH (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA	9	8.7	7.8	8.3	9.2	9.8	8.6	7.3	-7.4	6.1	8.3	0.4	4.2		
S. KOREA	9	8.5	4.8	5.5	8.1	8.9	5.5	5	-6.7	10.9	9.3	3.1	6.3	3.7	1.9
THAILAND	11.2	8.1	7.6	7.7	8.5	9.2	7.1	-1.4	-10.5	4.4	4.6	1.9	5.2		

TABLE A2: PRIVATE CONSUMPTION EXPENDITURE GROWTH (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	11.9	14.3	7.5	9.8	13.2	11.7	9.6	9.3	-10.2	2.9	12.5	2.8	4.2
S. KOREA	9.6	21.1	14.8	14	18.7	9.6	13.2	9.1	-11.7	11	7.9	4.7	6.8
THAILAND	12.9	11.6	12.5	11.7	13.1	7.8	11.6	4.4	-11.5	4.3	4.9	3.7	4.7

TABLE A3: PUBLIC CONSUMPTION EXPENDITURE GROWTH (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	5.9	12.7	5.9	10.9	10.2	6.1	2.4	8.9	-8.9	17.1	3	17.6	13.8
S. KOREA	7.4	21.3	16.8	10.4	12.3	0.8	-11	40.6	-0.4	1.3	0.1	1.3	2.9
THAILAND	6.9	12.5	21.3	12.8	12.2	5.2	13.3	1.6	3.9	3.1	2.6	2.9	0.5

TABLE A4: GROWTH OF MERCHANDISE EXPORTS (US $ FOB, %)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA	17.4	18.7	9.7	17	27	20.2	6.5	12.1	29.7	12.2	16.1	-10	6		
S. KOREA	4.2	10.5	6.6	7.3	16.8	30.3	3.7	5	-2.8	8.6	19.9	-13	8	19.8	12
THAILAND	14.2	23	13.6	13.5	21.6	23.6	0.4	27.9	24.4	-1.4	25.2	4.3	2.2		

TABLE A5: GROWTH OF MERCHANDISE IMPORTS (US $ CIF, %)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA	30	27.4	3.6	15.7	32.8	24.6	1.5	12	3.3	8.9	25.3	-10	8.3		
S. KOREA	13.6	16.7	0.3	2.5	22.1	32	11.3	-3.8	-35.5	28.4	34	-12	7.8	19.1	8.5
THAILAND	27.4	13.6	7.8	12.9	17.4	28.8	3.9	5	-7.8	7.5	30.8	10.5	0.8		

TABLE A6: SAVINGS - INVESTMENT GAP (AS % OF GDP)

	1990	1991	1992	1993	1994	1995	1996	AVERAGE
THAILAND	(7.6)	(6.4)	(4.9)	(4.5)	(5.0)	(7.5)	(7.7)	(6.2)
S. KOREA	(1.0)	(2.5)	(1.5)	(0.8)	(1.1)	(1.5)	(3.5)	(1.7)
MALAYSIA	(3.3)	(8.0)	(4.7)	(5.3)	(7.3)	(9.5)	(5.5)	(6.2)

Source IMF: World Econ. & Fin. Survey

TABLE A7: TOTAL FOREIGN LOANS (US $ MIL.)

	Dec-94	Dec-95	Jun-96	Dec-96	Jun-96
THAILAND	43,879	62,818	69,409	70,147	69,382
S. KOREA	56,599	77,528	88,027	99,953	103,432
MALAYSIA	13,493	16,781	20,100	22,234	28,820

Source : BIS, Business Times

TABLE A8: TOTAL FOREIGN LOANS AS % OF GDP

	Dec-94	Dec-95	Dec-96
THAILAND	30.4	37.4	38.7
S. KOREA	18.6	22.1	25.7
MALAYSIA	18.6	19.2	22.4

Author's Computation

TABLE A9: FINANCIAL POSITION (AS AT DECEMBER, 1996)

	Short Term Loans(US$ Mil.)	Short Term Loans as % of Total Foreign Loans	Foreign Loans as % of Reserves	Short Term Loans as as % of Reserves
THAILAND	45,733	65.20%	181%	118%
S. KOREA	67,468	67.50%	300%	202.50%
MALAYSIA	12,451	56.00%	83.90%	46.90%

TABLE A10: FOREIGN DIRECT INVESTMENT (US $ BIL)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	2.33					6.64		5.56	2.71	2.47	1.76	0.29	1.3
S. KOREA	-0.26	-0.3	-0.43	-0.75	-1.7	-1.8	-2.3	-1.61	0.67	5.14	4.29	1.11	-0.7
THAILAND	2.4			1.57	0.88	1.18	1.41	3.3	7.36	5.74	3.37	3.65	0.96

TABLE A11: PORTFOLIO INVESTMENT (US $ BIL)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	-1.05							-4.39	-6.87	-1.2	-2.47	-0.7	-1.7
S. KOREA	0.08	3.05	5.8	10	6.12	11.6	15.2	14.3	-1.88	8.68	12	6.58	0.18
THAILAND	0.46			5	1.69	4.01	2.88	4.37	0.33	-0.1	-0.71	-1.2	-2.3

TABLE A12: GROSS INTERNATIONAL RESERVES (US $ BIL)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA	9.87	11	17.4	37.4	25.5	23.9	27.1	20.9	25.7	30.7	29.6	30.5	34.3		
S. KOREA	14.8	13.7	17.2	20.3	25.7	32.7	34.1	20.41	52	74.1	96.2	102	121		132
THAILAND	14.3	18.4	21.2	25.4	30.3	37	38.7	26.89	29.5	34.8	32.7	33	38.9		

TABLE A13: UNEMPLOYMENT RATE (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA	5.1	4.3	3.7	3	2.9	2.8	2.5	2.6	3.2	3.4	3.1	3.7	3.5	3.8	na
S. KOREA	2.5	2.3	2.4	2.8	2.4	2	2	2.6	6.8	6.3	4.1	3.7	3	3.6	3.3
THAILAND	2.2	2.7	1.4	1.5	1.3	1.1	1.1	0.9	4.4	4.2	3.6	3.3	2.4	2.9	2.5

TABLE A14: GROSS DOMESTIC INVESTMENT GROWTH (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02	Q1.03	Q2.03
MALAYSIA								12	-44	-4	28	-9	9	0.1	-2.3
S. KOREA		15	-1	3	14	11	9	-8	-38	30	11	-2	4	7	2
THAILAND					11	14	5	-22	-51	9	11	2	5	10	

TABLE A15: GROWTH IN REAL BANK CREDIT TO PRIVATE SECTOR (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA		16	6	7	10	27	22	20	-2	-1	5	3	5
S. KOREA		12	7	6	17	11	14	12	-6	17	16	13	21
THAILAND		16	17	18	24	16	9	15	-13	-5	-11	-7	6

TABLE A16: DOMESTIC CREDIT GROWTH (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	18	18.5	16.6	12.3	14.8	29.5	31.2	29.3	-2.7	0.3	9.6	-6.9	8.9
S. KOREA	25	22.4	11.5	12.8	18.5	14.6	19.5	23.3	11.6	17.4	16.3		
THAILAND	26.8	15.5	18	22.7	29.4	23	14	34.5	-1.3	-4.2	-7.5		

TABLE A17: CURRENT ACCOUNT BALANCE AS % OF GDP

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	-2.1	-8.5	-3.7	-4.5	-6.1	-9.8	-4.8	-5.2	13.2	15.9	9.4	8.3	7.6
S. KOREA	-0.8	-2.8	-1.3	0.3	-1	-1.7	-4.4	-1.7	12.7	6	2.7	1.9	1.3
THAILAND	-8.4	-9	-8	-4.9	-5.4	-7.9	-7.9	-2	12.8	10.2	7.6	5.4	6

TABLE A18: GOVERNMENT BUDGET BALANCE AS % OF GDP

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	-2.9	-2	-0.8	0.2	2.3	0.8	0.7	2.4	-1.8	-3.2	-5.8	-5.5	-5.6
S. KOREA	-0.7	-1.6	-0.5	0.6	0.3	0.3	0.3	-1.5	-4.2	-2.7	1.3	1.3	3.8
THAILAND	4.9	4	2.6	1.9	2.7	3	0.9	-1.5	-2.8	-3.4	-2.2	-2.4	-1.4

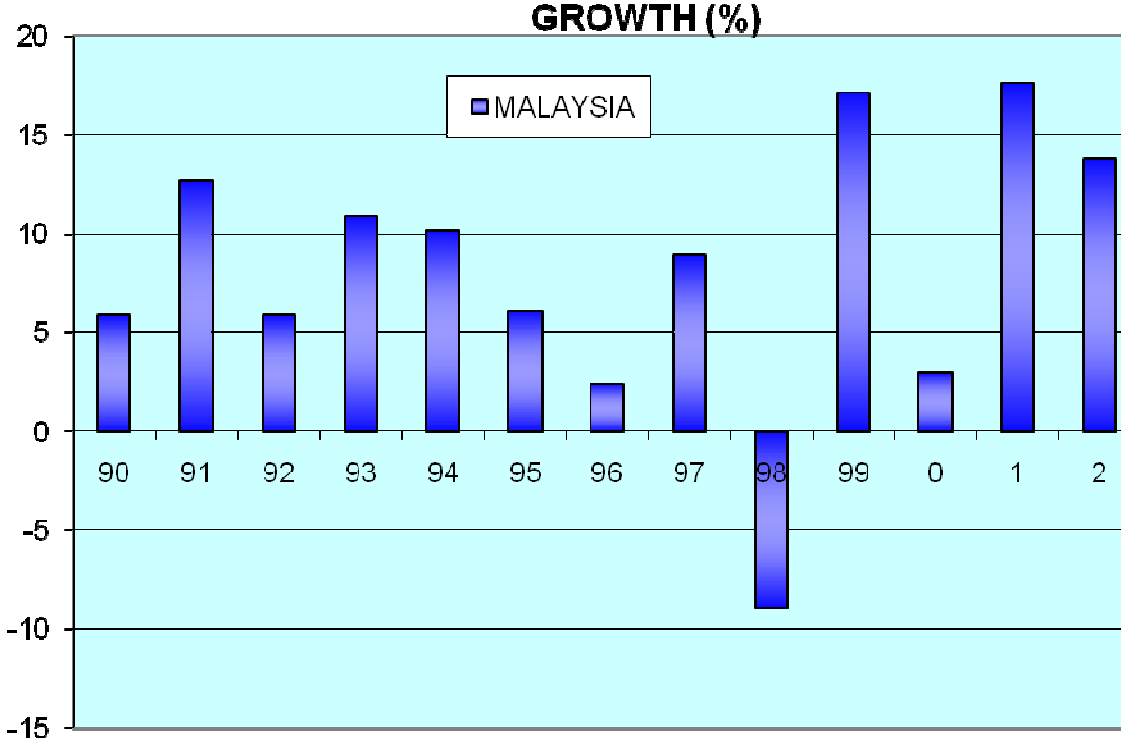
TABLE A19: BROAD MONEY GROWTH, M2 (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA	13	12	16	17	20	24	21	23	2	14	5	2	6
S. KOREA	17	20	14	15	17	23	15	14	24	5	5	8	14
THAILAND	27	18	14	17	12	17	12	16	10	2	4	4	3

TABLE A20: 3-MONTHS INTERBANK LENDING RATE (%)

	90	91	92	93	94	95	96	97	98	99	00	01	02
MALAYSIA								9.0	11.5	4	3.2	3.2	3
S. KOREA								14.1	14.6	6.8	7.1	5.2	4.8
THAILAND								17	16.8	4.9	4	3.1	2.1

TABLE A3: PUBLIC CONSUMPTION EXPENDITURE GROWTH (%)



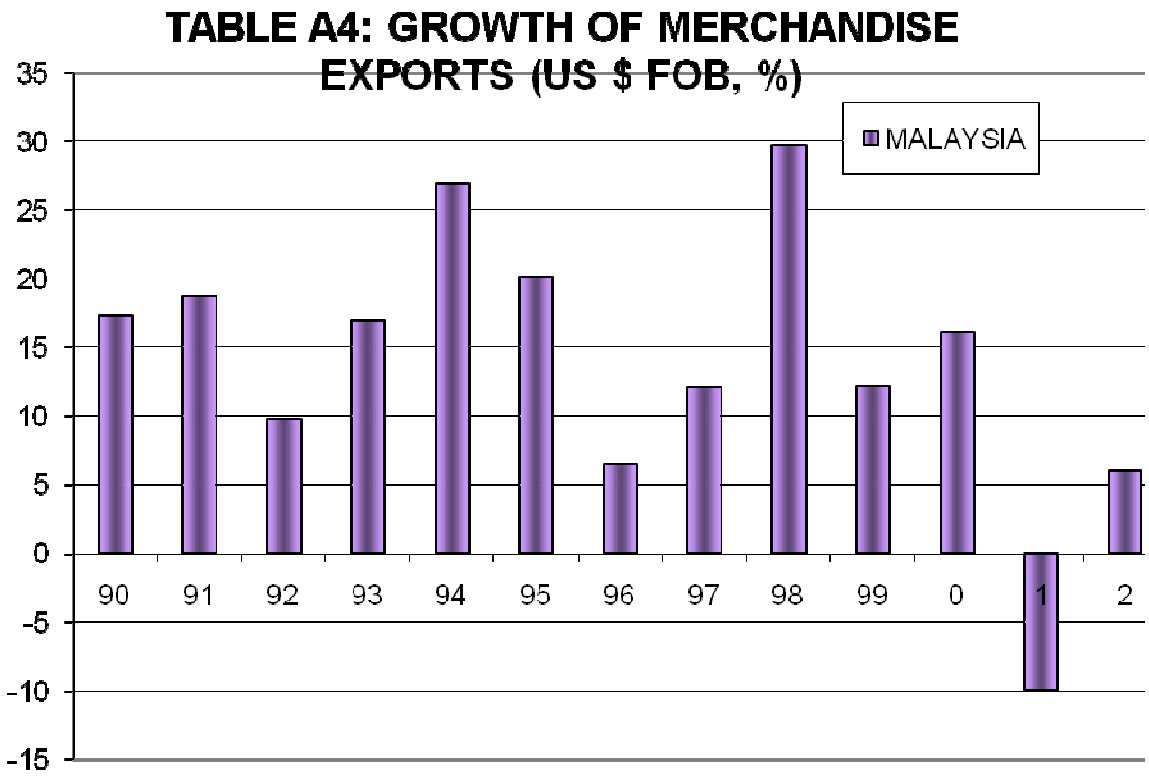


TABLE A4: GROWTH OF MERCHANDISE EXPORTS (US $ FOB, %)
MALAYSIA
35
30
25
20
15
10
5
0
-5
-10
-15
90
91
92
93
94
95
96
97
98
99
0
1
2

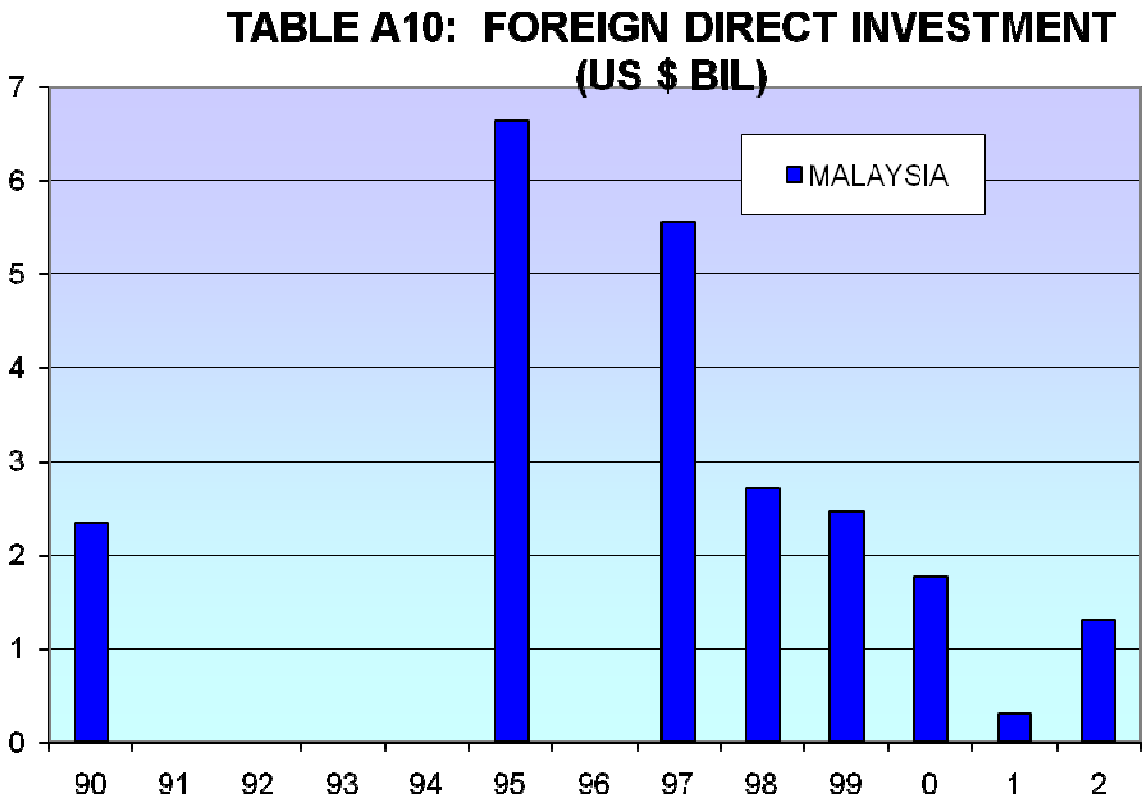


TABLE A10: FOREIGN DIRECT INVESTMENT
(US $ BIL)
MALAYSIA
7
6
5
4
3
2
1
0
90
91
92
93
94
95
96
97
98
99
0
1
2

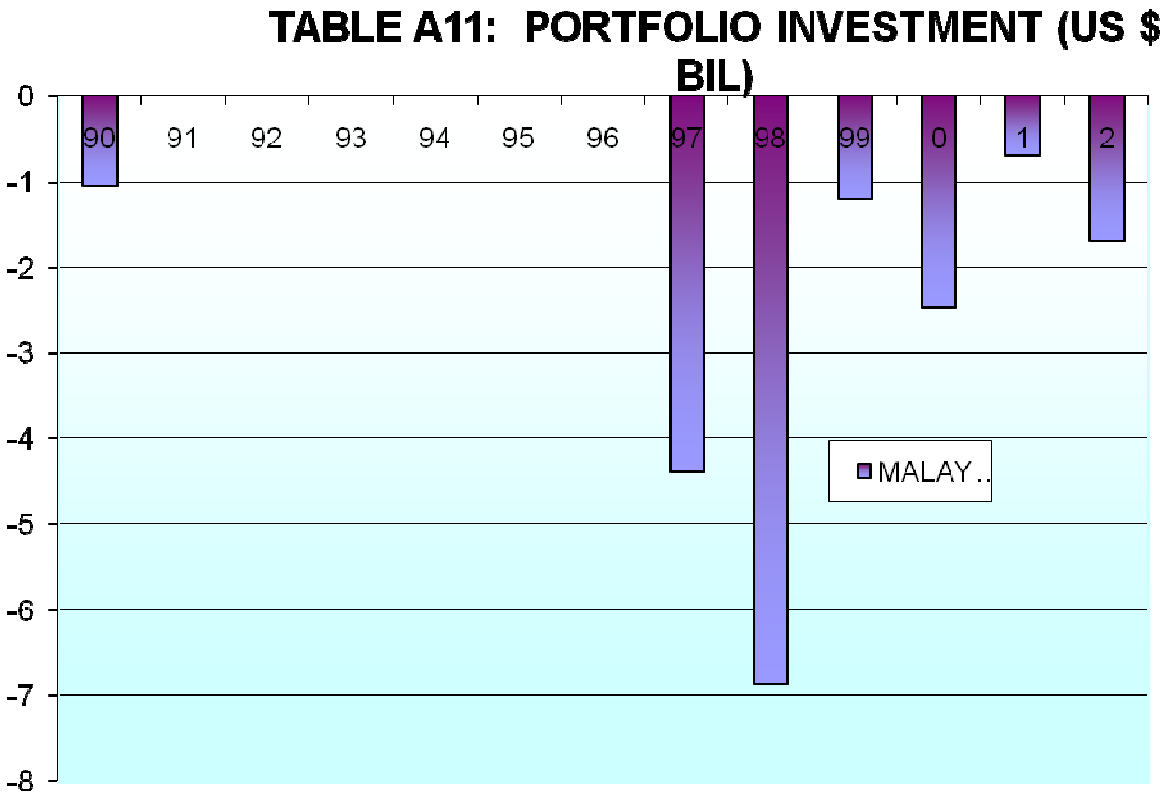


TABLE A11: PORTFOLIO INVESTMENT (US $ BIL)
0
-1
-2
-3
-4
-5
-6
-7
-8
90
91
92
93
94
95
96
97
98
99
0
1
2
MALAY..

TABLE A12: GROSS INTERNATIONAL RESERVES (US $ BIL)