Recent financial crisis in Malaysia: response, results, challenges

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RECENT FINANCIAL CRISIS IN MALAYSIA: RESPONSE, RESULTS, CHALLENGES[*]

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1. Introduction

The paper is divided into six sections including the present one. The following section discusses broadly the data used for purposes of analysis, and the position of Malaysian economy during the crisis. Section 3 deals with controls as a tool for managing financial turmoil. Section 4 argues, on the basis of results, that for Malaysia the imposition of controls was a better course of action than seeking help from the IMF. Section 5 makes brief reference to some challenges including the issue of dollar-ringgit peg. Section 6 contains a few concluding remarks.

2. Malaysia and the Crisis

Malaysian economy has largely been on a sound footing since independence. In recent years it has enjoyed full employment, considerable stability in the price level, and high growth, the average rate being 8.7 % during 1990-97.[1] Malaysia, though small, occupied in the world a high rank at 35 in 1997 with reference to the size of both the aggregate and per capita GNP. Again, it essentially is a trading country. Exports and imports play a major role in the progress of the economy: their sum was, for example, 1.85 times of her GDP in 1997.[2] Thus, the economy is highly open, and is much susceptible to external disturbances. More so because foreign capital continually supplements domestic savings to sustain high investment rates for pushing up growth.[3] Retaining the advantage is by no means easy, especially because international economic policy is increasingly assuming political overtones. The high performance of the Malaysian economy maintained over the decades, without markets or technology or even the core capital being local, cannot be slighted. Policy and performance appraisals during and after the melt down have not always been conscious of this fact. Furthermore, most of the studies dealing with the crisis have relied for analyzing the situation on the yearly or at best the quarterly data for the pertinent variables that was available from various sources. Sometimes, it was perhaps the nature and periodicity of the data one could lay hands on that dictated the model form, or the issues one selected for discussion. However, the crisis essentially being a *short*-term phenomenon, even monthly data concealed more than it could reveal. The periodicity of the data used could rarely capture the *abruptness of* the event the authors sought to deal with. In the case of Malaysia, the crisis could hardly be seen coming and pre-empted (Woo et al p.130). This paper, therefore, takes a different course. It relies on weekly data pertaining to the variables it uses: foreign exchange rates, interest rates, and stock market indices. The primary source of these figures has been the business section of the *New Strait Times* and relate to the closing quotations of each Tuesday [4]. If the Tuesday quotation was not available for any reason, the closing quotation available for the nearest day has been used.

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In Malaysia the financial meltdown started towards the close of July 1997, the major fall in the stock prices occurring sometime in the first week of the following month. The stock market fell by 68.58 % and the dollar-ringgit rate plunged by over 37 % during the worst patch of about a year [5]. The following figure depicts the position during the first sixty-three weeks of the crisis: the period from July 1, 1997 to September 8, 1998. Clearly the fall in the stock prices was sharper and larger 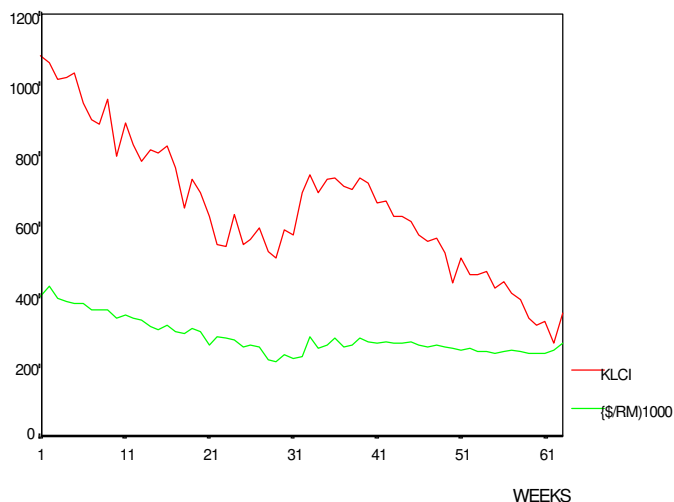compared to the dollar value of the ringgit. For, the exchange rate essentially was affected by the flight of foreign funds while the stock market had an additional factor: the local speculators unnerved by the external unloading too rushed for liquidating their positions. Soon any drop in either of the markets seemed feeding the one that followed. Figure 2 depicts the relationship between the KLCI and the dollar price of the ringgit. The correlation was high, the value of r equaled 0.875. But the result was found vitiated by the presence of serial correlation; the Durbin-Watson statistic for the estimate at 0.359 was much smaller than even the lower bound requirement of 1.562. To investigate if there were a genuine casual relationship between the KLCI and the dollar-ringgit rate, we tried transformation of the data to first differences. The regression based on differences has no intercept, and R square measures the proportion of variability in the dependent variable about the origin explained by regression[6]. However, the above results do indicate that the fluctuations in the KLCI had been closely related to the variations in the $-RM rate during the crisis. In fact, there is evidence to show that the relationship was characterized by feed back interactions in which the change in exchange rate could take the lead and vice versa (Granger, Huang, and Yang p.346), the flight of foreign capital pulling down both the markets. Though we could not get capital flows data for the relevant weeks, there is some evidence supporting the contention: the short term capital account of the country recorded a substantial net outflow of funds - RM 11.3b in 1997 and 21.7b in 1998 [7]. Possibly, bulk of this amount moved out during the first sixty-three weeks of the crisis. The trend continued in the following year the figure crossing the RM 36 b mark. It is well to indicate that these figures include as well some flows not forming part of portfolio investment[8].

Figure 1 Showing fluctuations in the KLCI and the $-RM Rate

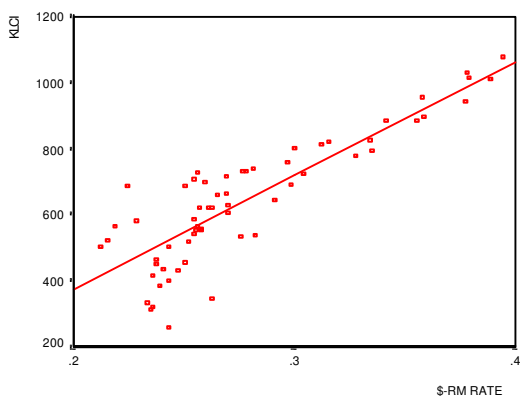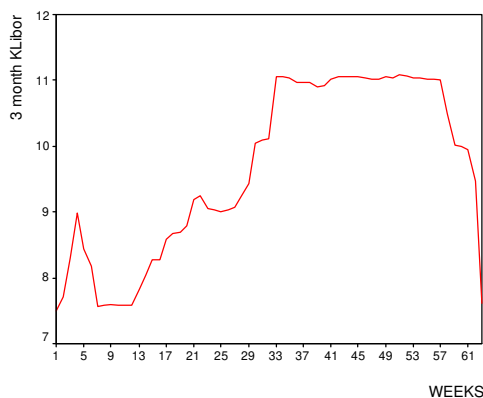| Model 1		
Δ KLCI est. = 1576.588 Δ $-RM Rate R = 0.459 Rsq. = .211 Adj. Rsq. = .198 F = 16.26		
Standard Error = 390.930 Standard Error of the estimate = 49.381		
t - value = 4.033 Runs test, Z = 2.09		
P- values (one tailed) (.000) (.018) (.000)		

Figure 2 Showing regression of KLCI on $-RM Rate

Figure 3 Showing fluctuations in the KLibor

Model 2: Correlation Coefficients (First Differences)			
	KLCI	$-RM rate	Nikkei
KLCI	1.000	0.459 (.000)	0.256 (.022)
$-RM rate		1.000	0.148 (.000)
Nikkei			1.000

The major policy instrument used during the period was the interest rate structure represented here by the Kuala Lumpur three monthly inter bank offer rates i.e. KLibor. This rate was continually pushed up during the period. Figure 3 above shows the position. However, higher interest could not prove attractive enough to slow down let alone reverse the outflow of funds. The correlation between the original values of the two variables was negative (-0.553) and significant. When first differences were used to remove serial correlation the coefficient though remained negative became negligible {-0.053} and insignificant. Thus the monetary policy pursued during the period was a total failure. Not only it failed to keep foreign money at home, it made business borrowings costlier contributing to economic slowdown. Presumably even the investment of local funds abroad tended to rise if retained earnings were taken into account.

N = 62

Summary Results

Δ KLCI est. = 0.432 Δ $-RM rate + 0.198 Δ Nikkei   R = 0.50 R^2 = 0.25 R^2 Adj.= 0.224   F = 9.94

t - values   3.827   1.753   Runs test statistic   Z = 2.661

p-values   (.000)   (.085)   (.004)   (.000)

Note: P-values shown in parentheses are one tailed

Japan and the USA have traditionally been among the leading trade partners of Malaysia, accounting for about 35% of her annual imports and exports, and sharing it in almost equal measure.[9] However, as the ringgit was informally linked to the US currency even prior to the turmoil, and the flight of funds was essentially in terms of dollars, one expected the KLCI fluctuations linked in some way to variations in the US stocks prices as measured by, say, Dow Jones index. But statistically one finds no significant relationship between the two indices during the period. On the other hand, the KLCI and the Japanese Nikkei are found interrelated. In fact the regression improves if we include Nikkei as an explanatory variable in addition to the $-RM rate in the model. We again use the first differences and the results are given in Model 2 above the regression coefficients are in their standardized version.

The addition of any other explanatory variable like interest rates, Singapore stock market index, Kuala Lumpur futures index, or the yen-dollar rate that we tried only deteriorated the results, most of the regression coefficients turning insignificant. Thus, one can safely conclude that the first sixty-three weeks of the crisis were almost completely dominated by the flight of capital from Malaysia.

3. The Response

Though this paper is not concerned with the causes of the crisis [10], a few remarks may help understand the Malaysian response to it. Many economists and international financial institutions including the IMF broadly attributed the turmoil, to the weak macro economic fundamentals of the affected economies, and the contagion crossing the borders. Both reasons missed the point. How can economies blooming for decades, doing rather 'miracles', become weak in fundamentals overnight? The argument could hardly explain the *suddenness* or the *magnitude* of the disaster. And how is it that the very same economies are now not only up on their feet again but also tending to pick up pace? The fact is that it was not the weak fundamentals of these economies, which invited the trouble; it was the trouble that threatened their fundamentals. There was need to make a distinction between the real economy and the financial system of a country [11]. In the Malaysian case, even the financial system entered the financial crisis in 1997 from a position of strength. It was the severity of the crisis that caused cracks in its structure [12].

The contagion did play a role, but not *within* the suffering economies. It was located *outside* i.e. among the foreign portfolio investors. Once they were convinced that the exchange rate was out of what they *perceived* as *the* equilibrium, massive, one way speculative action was expected (Kawai p.14). No less than 108 billion US dollars left the region within the first six months of the crisis (Pang p.2). At home, the herd behavior of the local speculators aggravated the situation in the stock market but had little to do with the foreign currency trading.

Figure 4 Mechanism of Controlling Foreign Capital Flows
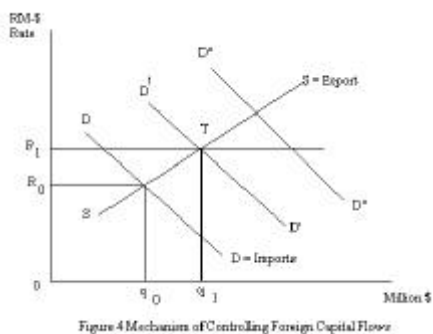
Policy suggestions made to arrest the turmoil had to be in line with its causes as seen by the 'international community', and its financial arm the IMF. It was suggested that the countries in trouble must undertake economic and financial reforms, impart more transparency to government policies, make macro economic adjustments, and initiate measures to vitalize their economic and financial systems. Thailand, Indonesia, and Korea took steps to remedy their economic weaknesses, and tried to soften the speculative pressure on their currencies. But they soon found the crisis beyond their control. They decided, as per their circumstances, to seek financial assistance from the IMF. Following the package of conditions the IMF invariably attached to such help, these countries had to implement tight monetary and fiscal policies, and had to undertake prescribed structural reforms particularly in the financial sector. Meanwhile the slide continued in Malaysia perhaps because the country wanted to try the usual means to stem the rot before it took the final decision. Many projects on the anvil were dropped, those in progress were slowed down, public expenditure was curtailed, some allowances

to employees were abolished or reduced, and many foreign workers had to leave. But the economizing efforts, or the high interest regime we alluded to earlier all proved of no avail. In a nutshell, the real GDP registered a fall of about 6% during the span of about a year. The decision on policy response could no longer be postponed. There of course was no bar on going to the IMF for assistance. However, such assistance never came without prior agreement of the seeker to abide by the conditions the IMF chose to impose. Experience of developing countries regarding the condition was not in general encouraging in economic terms. More than that these conditions abridged the recipients' freedom of action. Many considered the acceptance of the IMF program as the surrender of a country's sovereignty and discretion to the international community.

The alternative Malaysia chose was the imposition of capital controls. Of course there was nothing novel about the choice *per se*. The monetary history is full with instances of all sorts of countries-developed and developing-using controls to regulate foreign capital flows. Indeed in a seminar held in June 1998 at the International Islamic University of Malaysia (IIUM) on the turmoil, the author had himself proposed the steps [13] which, he then had no idea, would constitute the core of the package the government put in place later in September 1998. However, the decision was novel for the courage of conviction it needed in an atmosphere loaded with the new urges for liberalization and openness. It was a decision to swim against the currents, and was in that sense quite risky. The theory underlying controls on foreign capital flows is simple. We may use the following demand and supply diagram to explain it. In the figure 4 below, DD shows the demand for dollars at its various ringgit prices for importing goods and services from abroad, remittances by aliens, and outflows of capital. Likewise, the SS curve expresses the supply of dollars in the Malaysian foreign exchange market, and include receipts from the export of goods and services, money send home by the nationals living abroad, and capital inflows from foreign countries. The equilibrium exchange rate R_0 is determined by the interaction of these forces. The large scale speculative outflows of capital push the demand curve upward to D'D' putting pressure on the local currency leading to its depreciation. Two options are available to remedy the situation. As the demand for foreign currency increases, the central bank may increase its supply in the market appropriately beyond T along the flattened S' curve for maintaining the exchange rate at a desired level such as R_1. Usually developed economies with vast foreign exchange reserves use this option. The international community has no objection to the remedy. For, such *intervention* in no way reduces the volume of transactions in the market. In fact at the beginning of the crisis Malaysia, despite her reserves being small, did spend a few billion dollars in the region q_0q_1 to arrest the fall of the ringgit, but soon found the task beyond her capacity.

On September 2, 1998 Bank Negara Malaysia pegged the ringgit to the US dollar at 3.80:1 - about 10% higher the level the rate had already fallen. It also announced controls on foreign capital flows to restrict the speculative demand for the ringgit DD from shifting upward and prevent the internationalization of the currency. To the free traders the *restrictions* are distasteful as they reduce the market volume of transactions. However, Malaysian controls were *selective* designed, as they were to help achieve the objectives of the country's plan for economic recovery. They left direct foreign investment untouched, while keeping current account transactions fully convertible [14]   The main elements of the package as per Bank Negara Report 1998 (p. 62) were: 1) Selected ringgit-denominated transactions among non-residents effected via their external accounts required approval. 2) Short-term capital flows were to remain in the country for a minimum period of one year, though they could be actively managed in the form of ringgit assets. 3) Import and export of ringgit by travelers, both residents and non-residents,

were restricted for amounts exceeding RM 1000. 4) Malaysian investments abroad exceeding the equivalent of RM 10000 required prior approval; and 5) Malaysians traveling abroad required approval to carry foreign currencies in excess of RM 10000 equivalent.

To supplement the controls for ushering in economic recovery the tight money policy which invariably is an important ingredient of the IMF recipe and which the country religiously followed for about a year of deepening recession was replaced with the Keynesian prescription. The cheap money policy took place of the rising interest rates regime. Thus, the 3-month KLibor steadily fell from around 10% in August 1998 to 3.25% in more recent weeks [15]. Several measures were taken to increase effective demand: for example, banking institutions with the capacity to lend were encouraged to achieve a minimum loan growth target of 8% in due course of time, conditions for lending to construction companies were eased, ceiling on loans for purchasing shares and units were relaxed, margin of financing for all passenger cars was raised, and minimum monthly repayment on credit cards was reduced [16]. Capital controls are already in a process of withdrawal: he lock-in ended in September 1999. Thus, avoiding the IMF assistance, tight money policy, restructuring program, austerity measures, and conditions, Malaysia chartered her own course to put the economy back on track, and succeeded. The following section takes a hurried look at her achievements.

4. The Results

The GDP suffered a steep fall of 7.5% in 1998. Still, the economy could register a growth rate of over 6% and cross the 1997 per capita income mark in the following year. The output of manufacturing industries expanded by 13.5% while unemployment declined to less than 3%. From a fall of 8.7% in 1998 investment rose by over 10% in 1999. Controls had an immediate effect on outflow of reserves as Table 1 shows.[17]

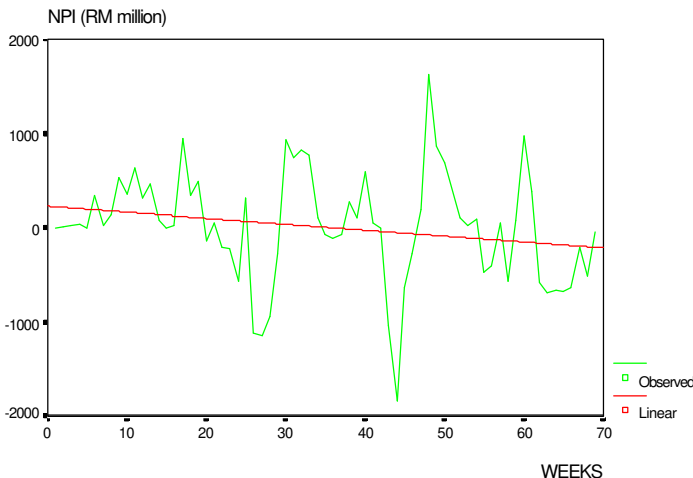| Table1: Outflow of Reserves 1998 (US $ million)				
Months	September	October	November	December
Outflow	526.9	269.3	112.7	368.2

Figure 5 showing net short-term capital flows

Direct foreign investment in the country was not much influenced by the turmoil. From a little less than RM 20 billion in 1997 it did dip to around half of that amount in 1998 but the trend picked up later. FDI rose to RM 13.3 billion in the following year. The rise is not insignificant in view of the fact that in 1999 the overall share of the Southeast Asian countries in direct foreign investment declined by 17%. [18] On the other hand, controls proved quite effective in curbing

the short-term capital flows. We have net portfolio cumulative inflow figures in million ringgits for seventy weeks i.e. from March 5, 1999 to August 16, 2000. The first differences of the series give us the weekly data on net portfolio inflows (NPI). Figure 5 shows the position.

The close correlation between the KLCI and short-term capital flows has been broken: the coefficient is small (-0.045), and statistically insignificant. The mean for the seventy weeks is a mere two million of ringgits. Figure 6 below shows the relationship. It is interesting to see that after the imposition of controls some notable changes have taken place in the determinants of the KLCI. The $-RM rate, being fixed, no longer remained relevant, and the short-term capital flows too seem to have spent their force. Over the last 107 weeks spanning from September 15, 1998 to October 11, 2000 interest rates have maintained their inverse relationship with the KLCI, Yen-$ rate has assumed importance, the impact of Nikkei continues, and the influence of Dow Jones remains insignificant. Again based on first differences the regression results are shown in Model 3 below.
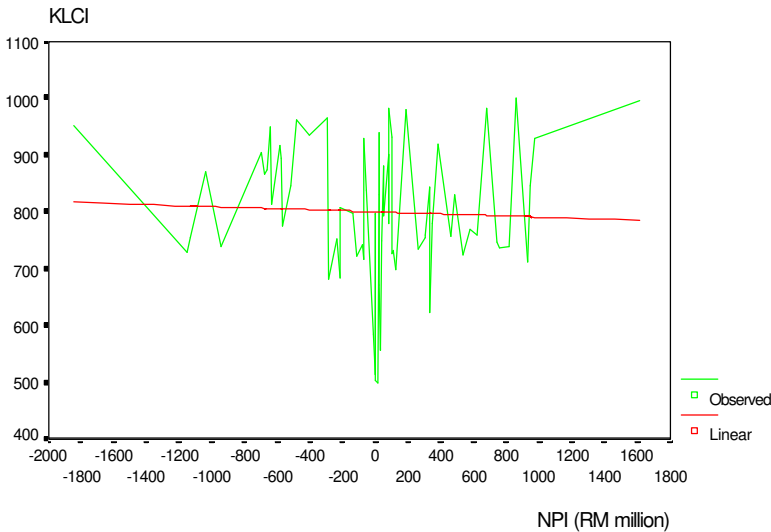
The coefficients of regression in the model are standardized. Interestingly, unlike Model 2, it satisfies the Durbin - Watson test but defies the runs test. [19]

Not only capital controls, the pump priming action also helped. Effective demand revived: consumption expenditure, public and private, went up in *real* terms by 10.68% in 1999 over that of the previous year, and was not much lower than that of 1997. The income of the government also rose: In addition to the restoration

Figure 6 showing KLCI and NPI Relationship (March 5, 1999-August 16, 2000)

of various cuts effected during the down turn in remuneration of employees, a 10% raise to them could also be granted. Despite the increases in expenditure, the budget for 2000 shows a surplus for the first time after remaining in deficit for three consecutive years.

	KLCI	Klibor	Yen-$ Rate	Nikkei
KLCI	.000	-0.260 (.000)	0.194 (.024)	0.229 (.009)
Klibor		1.000	0.018 (.428)	-0.113 (.127)
Yen-$ Rate			1.000	.024 (.404)
Nikkei				1.000

Model Summary

Δ KLCI est. = - 0.241Δ KLibor + 0.193Δ Yen-$ Rate + 0.197 Δ Nikkei   R = 0.361   F = 5.777

t - values   -2.616   2.108   2.144
p-values   (.010)   (.037)   (.035)
(.000)
Note: p -values is one tailed

The countries that sought the IMF assistance have also come out of recession. But one must desist from making comparisons. The circumstances, social environment

mental attitudes, institutional set up, power structures, pressure groups, and international relations of various countries are so different from one another that comparing them for the causes of the crisis or for their responses to it may not be very rewarding. In addition, the differences in the quality of data, in the definitions used in their compilation, in the time span they covered, and in their periodicity sometimes pose insurmountable difficulties and may render comparisons meaningless. However, one observation may be made without being much off the mark: Malaysia came out of the crisis less scarred and faster than Thailand and Indonesia, the two Asean neighbors who went to the IMF for assistance.

The distinctive feature of the Malaysian response to the crisis has been that the country tried to make people realize at home and abroad the potential of unregulated currency trading to inflict severe hurt to the developing economies. It pleaded against its acceptability as an inseparable ingredient of the globalization process. That it could win friends and influence people on that score is perhaps a much greater achievement of Malaysia than the economic gains she reaped from her policy choice. Today the country has greater respect for her economic management than ever before. This has won for her in recent weeks higher currency ratings, and upward revision of her growth rate estimates for the current year. [20]

5. Lessons and Challenges

The Malaysian experience has some valuable lessons to offer, and poses not a few challenges. It revealed many organizational weaknesses, especially in the financial sector, which are currently being taken care of. Special attention is being paid to the enlargement of the size of banks through mergers. What could be the optimal size for a bank, or would the enlargement of size necessarily ensure efficiency are the sort of questions that need careful investigation. In addition, the dilution of the banks' general financing character by establishing or strengthening special purpose institutions in the private sector to finance construction, small industries, agriculture, more effective investment, refinancing and the like is perhaps worth considering. This may improve the overall efficiency of the financial system and reduce risks through specialization. Zainal-Abidin makes a number of useful suggestions concerning, for example, liquidity management, a clear-cut separation of the FDI from short-term capital flows, and self-confidence for achieving national aspirations (pp.145-146)

An important challenge for tomorrow concerns the ringgit- dollar peg. Should the peg continue, and if yes are its level and form in need of a review are already tending to become serious issues It looks prudent to maintain the peg unless some mechanism at the international level is evolved and put in place to ensure that currency traders will no longer be free to upset fairly stable economies through their reckless speculative actions. The introduction of a contingency credit line CCL by the IMF in April 1999, and the recent proposal to strengthen it further are the first straws in the air. More may follow in course of time. However, the level and form of the peg are more difficult issues.

In principle, a little overvaluation of the currency may help growth in a developing economy. Here, exports and imports are not often price elastic and the exchange gap is a planned one: currency depreciation cannot be expected to benefit much. An over-valued currency does not hurt so much on the export front as it benefits in terms of both imports, and the servicing of foreign capital becoming cheaper. The informal tie of the ringgit to the US dollar before the crisis benefited Malaysia considerably: the tie made the local money rise in value against most of the currencies, yen in particular, as the US

dollar was on an ascending run in the foreign exchange markets of the world for more than half of the current decade.

The advantage was more than neutralized by the steep fall of the ringgit during the period from July 1997 to August 1998. The fixation of the rate at RM 3.80 to a US dollar compared to RM2.52, from where it started falling, was the formal recognition of about 34% devaluation of the currency. The fixation made exports of the country cheaper by the same percentage while imports became costlier by about 51% The impact of devaluation on the exports and imports of the country is shown in the following table taking their provisional values from Bank Negara Report 1999 (Table A.6) at current prices with 1998 as the base.

Table 2: Impact of Devaluation on Exports and Imports in 1999 with 1998 = 100										
Year	Exports (RM million)	P_{01}	Q_{01}	V_{01}	E_D	Imports (RM million)	P_{01}	Q_{01}	V_{01}	E_D
1998	286563	100	100	100	1	228125	100	100	100	1
1999	321181	66	170	112	>1	248847	151	73	110	<1

Thus the value index of exports rose only 12% with a fall of 34% in their prices due to devaluation. The country had to export 70% more in physical terms to obtain the indicated increase in the money value, for $V_{01} = P_{01}. Q_{01}$. Such a rise in quantity is quite improbable: one has to wait for the release of *actual* export figures for 1999. Till then it is safer to take their price elasticity as less, not more, than unity. On the other hand, the money value of imports, though they became costlier by 51%, did not fall. It went up by 10% because in physical terms imports could be reduced by only 27%. Their price elasticity obviously is less than one.
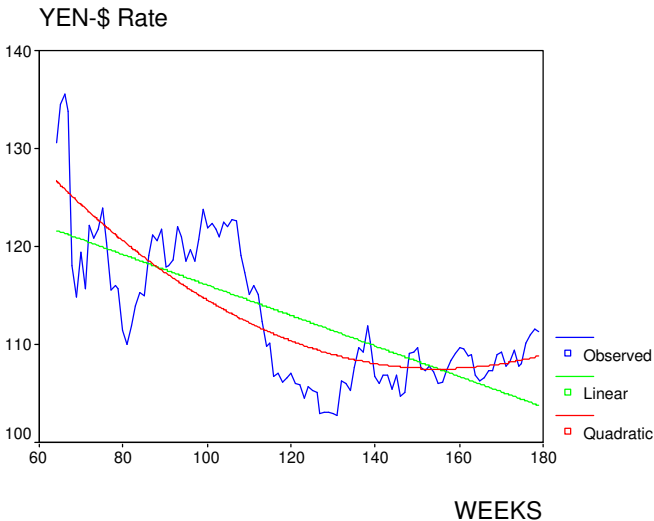
YEN-$ Rate

Figure 7 showing the fall of Yen-$ rate since Sept. 1, 1998

The country has been disadvantaged not only because her exports and imports are not much price elastic but also for an additional reason. The exports of the country have around 70% import content on an average. This tends to neutralize much of the competitive edge Malaysia could expect from devaluation. Furthermore, the ringgit. Dollar link is causing discomfiture as the greenback continues to slide against the yen. This automatically imposes an equivalent depreciation on the ringgit vis-à-vis the currency of Japan from where crucial imports come. Figure 7 above traces the course of the dollar's fall against the yen since the ringgit was pegged to the former. The average fall over the period has been no less than 15%. It is true that if the dollar is losing against the yen, it tends to appreciate against other major currencies, and to that extent Malaysia also gains. It may,

however, be noted in the Malaysian context that the yen-$ rate and the greenback's value in terms of the Singapore dollar are of greater importance as these three countries put together constitute about half of the foreign trade of the country, and the proportion of their combined contribution to investment is presumably even higher. With the recent rise in oil prices and the reversal in the middle-east peace process the dollar again tends to rise against the yen in recent weeks. The ringgit- dollar link does not ensure that the ringgit will not lurch; it only ensures that it must lurch with the dollar.

In view of the long-term volatility of the exchange rate despite the linkage (see table 3), the issue of the peg assumes added importance, and has to be kept under review. By the end of the year, with a further improvement in the economic performance of the country an upward revision of the rate to around 3.50 ringgit a dollar may not be much off the mark. Preferably, the rate may be fixed with reference to a trade weighted basket of currencies important to Malaysia with the year 2000 as the base.[21] The dollar peg may not remain beneficial for long.

Table 3 Ringgit Versus Regional currencies (Rates in Ringgits)			
	September 2, 1998	September 2, 2000	% Change
100 Korean Won	0.2827	0.3406	-17.0
100 Thai Bath	9.3713	9.0767	3.2
100 Indo. Rupiah	0.0354	0.0442	-19.9
100 Philippine Pesos	8.8302	8.2981	6.4
Trade weighted (1990 = 100)	73.10	67.35	-7.9
Source: Malaysian Institute of Economic Research Report (quoted from Ariff)			

As minor points one can mention the attainment of self-reliance in agriculture, especially in food production, diversification of the industries with more local consumer products, linking human resource development to the changing demands of the economy, more transparency in public dealings, and greater effort to alleviate poverty and increase peoples' participation in societal decision-making.

6. Concluding Remarks

It comes about that the primary cause of financial crisis in Malaysia was not the weak macro fundamentals of the economy, but the massive flight of short-term foreign capital from the country. Going to the IMF for assistance in such situations has been a common practice in recent decades. However, it also is a common experience of the assistance seekers in the developing economies that once with the IMF the difficulties tend to multiply not only in economic matters but sometimes also on the political front. Often the preferences and priorities of the recipients in the process of restructuring the economy clash with those of the IMF. Likewise, there often is a mismatch between repaying capacity of the country and the payment schedules: at times one needs more assistance to banish assistance. Malaysia came out of the crisis by herself, retaining her independence of action, and avoiding in the process many imponderables involved in going to the IMF.

The crisis has brought out several weaknesses in the structure of the economy that have to be remedied. The decision about the exchange peg requires review. The need for promoting self-reliance to achieve progress can hardly be overemphasized as the country should neither expect the repetition of massive influx of short-term foreign funds nor think of relying on them for liquidity any longer.

NOTES

1. See World Development Report 1999/2000 Table 11.p. 210
2. (Exports 262714 + Imports 280092) / GDP 281888 at current prices = 1.85 Amounts are in million of ringgits. Source: Bank Negara Report 1999, Annex Table A-6, p.19

3. In 1997 gross national savings were 39.4% of the GNP, while net inflow of resources from abroad on current account was 5.9% of the latter. Foreign capital contributed 13.1% of gross investment for the year. Source of data Ibid Table A-9 p.21

4. A random sample of individual days' closing quotations showed greater stability for Tuesday figures on the criterion of lower variance.

5. On July 1, 1997 the first Tuesday of our study the KLCI was 1031.61 and the RM-$ rate was 2.6410. These values were respectively 324.17, and 4.2250 a week earlier when controls on capital flows were imposed. These figures form the basis of our percentages here.

6. For the regression through the origin, the usual formula for calculating the coefficient of determination r^2 is not applicable On the topic see, for example, Aligner pp. 85-90

7. Bank Negara Report 1998 p.55

8. For 1999 the figures for example include the decline in net external liabilities of the commercial banks due to lower inter-bank borrowings and lower financing requirements for hedging contracts plus the significant repayment of short-term debt by the non-banking private sector due to rising interest rates abroad. Some increase in the amount is accounted for by the net liquidation and repatriation of portfolio investment by foreign investors following the expiry of the 12-month lock-in period for such investment. See Bank Negara Report 1999 p.55

9. In fact, based on data in A.9 p.243 of Bank Negara Report 1998 the shares of Japan, the US and Singapore in total trade (imports + exports) of Malaysia in 1997 were respectively 17.2%, 17.7%, and 16.6%; the three between them accounting for more than half the total trade of the country.
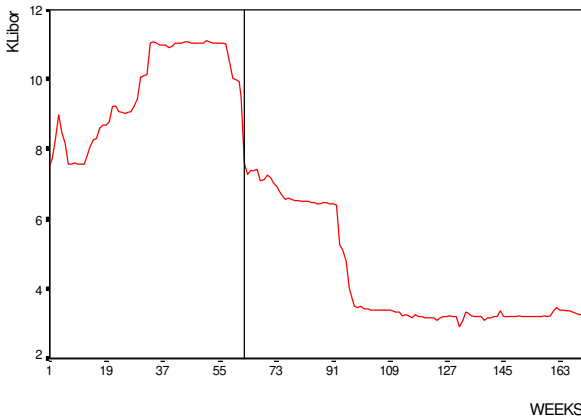

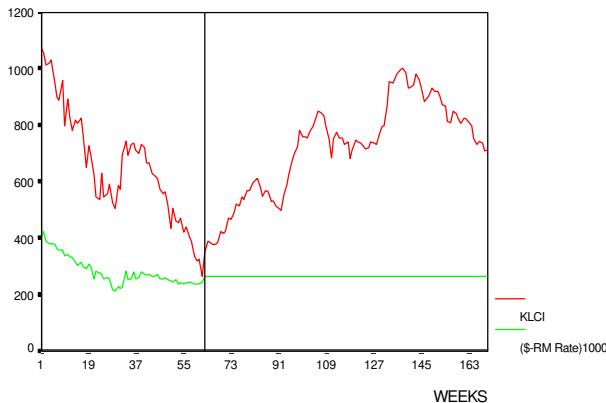Figure 8 showing change in interest rate policy

Figure 9 showing impact of capital controls on KLCI to the right of the divider

10. A good account of the causes of the crisis and policy response is provided in the Bank Negara Report 1998 Box 1 pp.11-16

11. Ibid. This distinction was recognized late during the crisis.

12. Ibid.

13. K.S. Jomo was probably the speaker for that seminar. Intervening from the floor the author had then suggested that imposing capital controls is *the* solution, and that the package should include a three-year lock-in for foreign capital parked in the country, the closing down of all private money changing outlets dotting the country, the restrictions on remittances to home by foreign employees making contributions to the EPF compulsory, and the demonetizations of 1000, and 500 currency notes. In substance, though not in details, the measures announced by the government later in September were virtually the same.

14. For details see Bank Negara Report 1998 Box III PP.61-62

15. See Bank Negara Malaysia Report 1998 p.87. See Figure 8 for a reversal of the policy

16. Ibid. p. 89

17. NEAC-MTEN: Facts and Figures - Inflow and Outflow of Reserves in USD equivalent http://vs02. Tvsecure.com/-vs02Ib5/figures/inflow.shtml Page 1of 2 9/5/00 Effect of the measure on the KLCI compared to the earlier

position is depicted in figure 9.

18. "Flow of FDI to Malaysia up 31 pc Unctad: Overall Southeast Asia received 17 pc less" New Strait Times October 4, 2000, p.21. However, some do suspect that the controls did quite a lot of damage to the flow of the FDI into the country. Still, how much of the fall was due to controls, and how much was due to reassessments of country risk is impossible to quantify without surveying those involved in the FDI. But for that one needs another paper.

19. It may well be mentioned that even when these tests are not satisfied coefficients remain linear and unbiased, only they are not efficient. This need not detract much from their explanatory value

20. "Moody's upgrades Malaysia's foreign currency ratings" New Strait Times October 18, 2000, p.23

21. The base should be normal year. 1990 fulfills the requirement, but it is already too far back in the past for fruitful comparisons in years ahead. Presumably year 2000 would be a better choice: it is normal and leaves the crisis behind.

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