

Chapter 4. Results and discussion

4.1 Solvency

Malaysia's current account position is given in Table 17. The basic reason for measuring the extent of the current account deficit is to determine whether the country is solvent. A country is solvent if 'the discounted value of the expected stock of its foreign debt in the infinitely distant future is non positive' (Corsetti, 1998a). This means that the rate of debt accumulation must be lower than the real cost of borrowing. This definition of solvency is considered weak as a country can be considered solvent in spite of having huge current account deficits as long as the country can generate trade surpluses in the future.

A more stringent criterion for determining the solvency of a country is the resource balance gap. This is the difference between current trade balance and trade surplus required to stabilise the debt to GDP ratio. Countries with a large trade deficit compared to the GDP will have a large resource balance gap. Likewise countries with a large differential between interest rates and GDP growth rates will also have a large resource balance gap. The resource balance gap is based on the fact that interest rates are higher than GDP growth rates, thus a stable foreign debt to GDP ratio indicates solvency.

Table 1 below is an analysis of the resource balance gap for Malaysia. The data indicate that there was a small but steady increase in the debt to GDP ratio from close to 0.5 (debt is 50% of GDP) in the early nineties to 56 - 57% by the mid nineties. In 1996, the GDP growth rate had slowed down and interest rates had increased to be greater than GDP growth rates. Though the trade balance had improved to show a surplus nevertheless it was not enough to offset the increased debt level. In 1996, the resource balance gap was measured to be about 28% of the GDP and by 1997, the economy had deteriorated enough to exhibit a whopping -124% resource balance gap. This means is that in 1996, the economy had to have a trade surplus of 33% of the GDP instead of 5% to maintain the

same debt/GDP ratio as in the early nineties. And in the crisis year of 1997, the trade balance had to be improved by 124% to 132% of the GDP instead of a deficit to maintain the ratio.

It appears that when the interest rates exceed GDP growth rates, countries can ill afford trade deficits if they want to maintain the debt position. Worsening debt position can erode investor confidence in the national economy and put pressure on expected future earnings and thus will negatively impact the exchange rate of the domestic currency. For Malaysia, the trend was for the interest rates to exceed GDP growth rates and for the national debt to grow. Thus the trend of the resource balance gap was negative. The resource balance gap position of Malaysia indicated unsustainability of the current account deficit position. Corsetti, Pesenti and Roubini (1998) calculated the resource balance gap for Malaysia in 1996 for a 1% differential between real interest rate and GDP growth and to maintain the 1996 debt to GDP ratio to be 2.3%. This project used a debt to GDP ratio of 50%, which is smaller than the actual ratios from 1993 to 1997. In 1996 the debt to GDP ratio was 56% and the interest rate to GDP growth differential was 0.65%.

Table 1. Malaysia debt, GDP growth, interest and calculation of the resource balance gap. All primary data was obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara statistic reports. All values in RM million unless stated otherwise.

		1993	1994	1995	1996	1997
Debt		51,861	59,147	68,810	73,181	125,673
GDP		100,617	109,976	120,272	130,621	140,684
Debt / GDP (%)		51.5	53.8	57.2	56.0	89.3
Interest rate, r (%)		8.50	7.05	8.20	9.25	10.33
GDP growth, g (%)		8.3	9.3	9.4	8.6	7.7
r-g (%)		0.2	-2.25	-1.2	0.65	2.63
Trade balance		29,239	-8,262	-4,403	6,245	-10,,891
Trade balance (%)		29.0	-7.5	-3.7	4.8	-7.7
(r-g)b @ 0.5*		10.0	-	-	33.0	132
Resource Balance Gap (% of GDP)		19.0	-	-	-28.2	-124.3

* (r-g)b is the equation for the resource balance gap. @ 0.5 indicate a given debt level of 50% of GDP. (r-g)b values are in % of GDP. r = % interest rate, g = % GDP growth rate, b = debt/GDP ratio (given) which in this case is 50% or b = 0.5.

4.2 GDP growth rates

High GDP growth rates enhance a country's balance of payment position; it allows the country to reduce the foreign debt to GDP ratio or at least stabilise it. Further, high GDP growth rates indicate increased capital accumulation rates driven by expectations of higher future income. Paradoxically, however, high GDP growth rates can also lead to an economic crisis. High expectations of future income can lead to high consumption and investment levels and also large capital inflows that makes it easy to finance the increased consumption and invest demand. But if the expectation of future income suddenly turns sour, the proverbial house of cards will come tumbling down (Rigobon, 1998). The GDP growth rate for Malaysia is given in Table 2 below. Consumption rate can be tracked by the monitoring the growth of consumption related loans.

Table 2. GDP growth rates, consumption and investment trends (RM million).

	1993	1994	1995	1996	1997
GDP Growth % constant prices	8.3	9.3	9.4	8.6	7.7
GDP Growth % current prices	11.2	15.2	14.9	14.1	10.4
Total loans	117,236 (10.9)	134,151 (14.4)	175,007 (30.5)	217,821 (24.5)	276,366 (26.9)
Property loans	25,891 (22.1)	24,843 (18.5)	32,104 (18.3)	39,624 (18.2)	47,216 (17.1)
Consumption indicators					
1. Consumption credits	19,502 (14.0)	22,669 (16.2)	30,191 (33.2)	40,053 (32.7)	38,747 (-3.2)
2. Car imports	1,338 (4.4)	1,943 (45.2)	3,043 (56.6)	2,795 (-8.1)	2,795 (0)
3. Sales tax receipts	3,468 (12.5)	4,145 (19.5)	4,877 (17.7)	5,473 (12.2)	6,037 (10.3)

Figures in brackets refer to annual percentage changes. All data was obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara statistic reports.

The first half of the nineties was a period of high GDP growth for Malaysia. During this period, the GDP growth rate was easily above 8% per annum. The table attempts to correlate the high GDP growth rates with the consumption and or investment rates. The data appears to support the view that the high GDP growth rates of the years immediately preceding the crisis year of 1997 lead to a consumption boom. Consumption indicators such as car sales followed the trend in the GDP growth rates and peaked at the same time in 1995. Car imports into Malaysia was growing at more than 40% per annum in 1994 and 1995. Similarly credit consumption was growing at more than 30% per annum in 1994 and 1995. However in 1997 a turn in the consumption rate can be noticed. Car imports and consumption credit were either flat or negative. It appears that a sharp decline in consumption and investment rates can foretell an exchange rate crisis but more studies on this will have to be carried out to verify and refine this hypothesis. A sharply lower consumption rate may reflect waning investor confidence. Two important signal indicators can be interpreted here: a) decreasing consumption rates (sharp turnaround types) may be due to higher cost of borrowing which in turn may reflect the increasing riskiness of the national economy and b) decreasing consumption rates may reflect a turnaround of investor expectations of long term economic growth to more realistic levels. Both factors can lead to greater expectations of devaluation in the domestic currency.

Thus for the case for Malaysia in 1997, there was a noticeable correlation in the trends in consumption and high GDP growth rates. A sharp turnaround in consumer demand preceded the currency devaluation. Corsetti, Pesenti and Roubini (1998) reported a similar result. The World Bank (1998) reported that while there were some negative considerations regarding the high GDP growth rates enjoyed by Malaysia and East Asia such as productivity and pollution, the growth rates themselves were laudable and positive.

4.3 Investment efficiency

Current account deficit is the difference between national savings and investment. A current account deficit will occur if there is a decrease in savings or an increase in investments (Corsetti, Pesenti and Roubini, 1998). It is widely considered that current account deficits resulting from a decrease in savings spell disaster while that resulting from investment are considered good, as the function of present investment is to generate future income. There are several implicit assumptions in dealing with investment efficiencies: the risks are higher if the investments are of poor quality, high quality investments are projects where the rates of return on the investments are at the minimum equal to the cost of capital and the investments lead to higher productivity and that the investments are in the traded sector (Corsetti, Pesenti and Roubini, 1998).

The standard method of measuring investment efficiency is the ICOR – incremental capital output ratio defined as the ratio between investment rate and output growth rate. The drawback with the ICOR method is that it measures overall efficiency and cannot track investments in vulnerable sectors such as real estate, which appears to be the root of the problem in say Thailand (Corsetti, Pesenti and Roubini, 1998).

Table 3 below gives the ICOR values for Malaysia prior to the crisis. It can be seen that the efficiency of investment showed a decrease from 1993 to 1997. This is similar to the findings reported by Corsetti, Pesenti and Roubini (1998) who analysed the ICOR values in two periods (1987 – 1992 and 1993 – 1996) and found that the investment efficiency in the later period was lower than that of the earlier period. Thus the investment efficiency showed a negative trend which, does not support the current account deficit.

Tables 4, 5 & 6 give the patterns on investment, consumption and performance of the stock market. While there was a dramatic increase in the loan growth just prior to the crisis in 1997, the overall proportions to the various sectors remained largely unchanged. In particular there was no shift of loans to the unproductive property sector. However the rise in consumption credits largely mirrors the rise in total loans disbursed so it appears that a consumption boom existed prior to the crisis. As stated above the high economic (GDP) growth in the early nineties acted to fuel a consumption boom especially in the period 1995 – 1997.

No discernible pattern also can be seen in the pattern of investment in the Kuala Lumpur stock exchange but the investments in the stock market hit the highest levels in 1996 just prior to the crisis. Again there was no shift of investments to the property counters so the whole idea of blaming the crisis on poor investment decisions in the property sector does not seem to hold, unless of course an anomaly exists. There has been widespread speculation that property investment has been grossly understated. Many firms had siphoned off paid up capital to property investment. This area needs to be thoroughly investigated to determine the exact extent of the property bubble in the crisis (Corsetti, Pesenti and Roubini, 1998).

Table 3. Malaysia: Incremental Capital Output Ratio (ICOR).

	1993	1994	1995	1996	1997
GDP Constant prices	100,617	109,975	120,272	130,621	140,684
Investment Constant prices	39,689	46,463	55,715	61,160	66,354
Current account Current prices	-7,926	-14,770	-21,647	-12,195	-14,153
GDP Growth rate (%) (constant prices)	8.3	9.3	9.4	8.6	7.7
Investment rate (% of GDP)	36.5	42.2	46.3	46.8	47.2
ICOR Investment rate /GDP rate	4.4	4.5	4.9	5.4	6.1

The higher the ICOR value the lower is the investment efficiency. Input values are in RM million. Data from the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

Table 4. Investment pattern in Malaysia - commercial bank loans to selected sectors (RM million).

	1993	1994	1995	1996	1997
Total loans	117,236 (10.9)	134,151 (14.4)	175,007 (30.5)	217,821 (24.5)	276,366 (26.9)
Construction loans	9,309 (7.9)	10,377 (7.7)	13,995 (8.0)	19,296 (8.8)	29,181 (10.6)
Housing loans	14,508 (12.4)	14,041 (10.5)	16,741 (9.6)	18,539 (8.5)	22,848 (8.3)
Property loans	11,383 (9.7)	10,803 (8.0)	15,363 (8.8)	21,085 (9.7)	24,368 (8.8)
Manufacturing loans	26,932 (23.0)	32,233 (24.0)	42,344 (24.2)	47,950 (22.0)	58,348 (21.1)
Business loans	13,662 (11.6)	15,055 (11.2)	19,043 (10.9)	22,191 (10.2)	29,349 (10.6)
Financial services loans	16,983 (14.5)	16,960 (12.6)	23,707 (13.6)	33,892 (15.6)	45,375 (16.4)
Transport & Communica	2,001 (1.7)	2,433 (1.8)	2,966 (1.7)	4,161 (1.9)	8,618 (3.1)

Figures in brackets refer to percentage of total loans except for total loans where they refer to annual percentage change. Data was obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

Table 5. Consumption pattern in Malaysia (RM million).

	1993	1994	1995	1996	1997
Consumption credits	19,502 (14.0)	22,669 (16.2)	30,191 (33.2)	40,053 (32.7)	38,747 (-3.2)
Car imports	1,338 (4.4)	1,934 (45.2)	3,043 (56.6)	2,795 (-8.1)	2,795 (0)
Sales tax receipts	3,468 (12.5)	4,145 (19.5)	4,877 (17.7)	5,473 (12.2)	6,037 (10.3)
Electricity, household*	4,701 (6.9)	5,597 (19.1)	6,030 (7.7)	7,137 (18.3)	7,441 (4.3)
Electricity, industrial*	21,483 (13.5)	25,138 (17.0)	25,617 (1.9)	32,404 (26.5)	36,306 (12.0)

Figures in brackets refer to annual percentage change. *value = KWH. Data from the Economic Report 1998/1999, Ministry of Finance, Malaysia.

Table 6. KLSE turnover (RM million)

	1993	1994	1995	1996	1997
KLSE (total)	389,274 (655.9)	328,057 (-15.7)	178,859 (-45.5)	463,265 (159.0)	408,54 (-11.8)
Industrial	178,630 (404.5)	168,287 (-5.8)	98,191 (-41.7)	171,664 (74.9)	165,956 (-3.3)
Properties	68,419 (1325)	54,391 (-20.5)	19,039 (-65.0)	40,075 (111.0)	43,217 (7.7)
Finance	54,202 (1160)	35,221 (-35.0)	20,663 (-41.2)	36,564 (76.8)	51,733 (41.3)
Hotels	15,911 (2550)	11,804 (-25.8)	2,029 (-83.0)	2,247 (15.0)	3,388 (47.8)

Figures in brackets refer to annual percentage change. Data was obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia.

4.4 Savings rate

There are 2 broad categories here: public and private sector savings. Decreases in public sector savings are often viewed as more damaging to the national economy decreases in private sector savings. A fall in public sector savings usually indicates a change in government policy (which will result in an increase in foreign debt) whereas a fall in private sector savings is merely transitory.

There does not seem to be any change in the public sector savings policy. In fact the public sector savings rate was favourable registering a surplus for most of the time prior to the crisis. However the fear is that the cost of restructuring the banking sector plagued with problematic loans may erode public sector savings. One of the issues brought up by the current financial crisis is that normal current account analysis does not include the fiscal impact of excessive credit growth (Corsetti, 1998a). Excessive credit growth accompanied by imprudent banking practices will lead to non-sustainability of current account deficits. The cost of restructuring banking operations will impose a significant toll on the public sector savings rate. The cost of banking and financial sector cleanup can therefore be used to gauge the sustainability of the current account deficit. In case of a need to restructure the nation's financial sector what is the cost? What is the danger level? At the moment no data or method to quantify the problem exist. The World Bank estimates that the cost of financial cleanup can be as high as 15% of the GDP. If this is true then Malaysia's public sector savings rate of 6 – 7% of the GDP will be wiped out and the balance will a deficit of 6 – 7% of the GDP!

The public and private savings rate for Malaysia is given in Table 7 below. Public sector spending as a percentage of the GDP was stable in the 5-year period prior to the crisis. Public sector savings showed a healthy trend of actually registering an increasing surplus for practically every year prior to the crisis. Corsetti, Pesenti and Roubini (1998) also found similar results: "current account imbalances do not appear to be the result of increased public sector deficits".

Table 7. Public sector savings (RM million)

	1993	1994	1995	1996	1997
GDP (constant prices)	100,617	109,976	120,272	130,621	140,684
Public sector spending (constant prices)	14,903	16,372	17,568	17,818	18,763
Public sector spending (% of GDP)	14.8	14.9	14.6	13.6	13.3
Public sector savings (constant prices)	-3,711	6,644	7,069	9,979	15,230
Public sector savings (% of GDP)	-3.7	6.0	5.9	7.6	10.8
Private sector spending (constant prices)	46,866	51,516	56,288	59,668	62,490
Private sector spending (% of GDP)	46.6	46.8	46.8	45.7	44.4

Negative sign indicates deficit. Data was obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara statistic reports.

4.5. Inflation

If the domestic inflation rate is higher than the global rates then there will be a real currency appreciation that will lead to a decrease in cost competitiveness. Further high inflation rates indicate poor macroeconomic policies that invite speculative attacks (Corsetti, Pesenti and Roubini, 1998).

However in Malaysia, the inflation rates were low but expected future inflation rates were high due to cost of cleaning up the banking system (Corsetti, Pesenti and Roubini, 1998).

Table 8. Inflation rates in Malaysia compared with its major trading partners

	1993	1994	1995	1996	1997
Malaysia	3.6	3.7	3.4	3.5	2.6
Singapore	2.2	3.1	1.7	1.4	2.0
Thailand	3.3	5.0	5.8	5.9	5.6
China	21.7	14.8	4.5	2.8	<1.0
Japan		0.7	-0.1	0.1	1.7
USA		2.6	2.8	2.9	2.3
UK		2.4	2.8	2.9	2.8
Industrial countries		2.3	2.4	2.3	2.0

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia.

Factors that can influence future expectations on inflation

1. Cost of bank restructuring
2. Change in government policies

It appears that inflation played a minor role in the crisis. Corsetti, Pesenti and Roubini (1998) also reported a similar low rates for all the affected Asian countries in the crisis of 1997. The only cause for concern here is that China exhibited a dramatic decline in domestic inflation rates which could have enhanced her export competitiveness thereby helping to reduce the export growth of Malaysia (see Table 12).

4.6 Openness

Open economies are subjected to 2 influences: a) influences that will lead to sustainability of the current account deficit and b) influences that will lead to crisis. The more open a country's economy, the more sustainable the current account deficit (Corsetti, 1998a). This is due to export revenues conferring a greater ability to pay off debt obligations and the high cost of a crisis (for a globally integrated economy) resulting from the non-payment of debts (no access to capital markets). On the other hand, the country will be vulnerable to the vagaries of international trade.

Table 9 below shows the degree of openness of the Malaysian economy. As can be seen, the country has a very open economic system. In fact there was a rise of the degree of openness right up to 1997. This can be seen as one of the strengths of Malaysia. The openness of the economy allowed the country to rapidly develop on the back of a strong export economy.

However, in the case of Malaysia the openness of the economy subjected the economy to the external shocks of the global economy. While contributing to its spectacular growth by luring in foreign capital, the openness of the economy also subjected the country to severe scrutiny and when the results were unfavourable, the capital flow was reversed and a crisis erupted. For an open economic system, an accompanying parameter will have to be tagged on. This is the degree of transparency of the business and government system. Such a parameter will dilute the effect of external trade shocks (Corsetti, Pesenti and Roubini, 1998).

Table 9. The degree of openness of the Malaysian economy

	1993	1994	1995	1996	1997
GDP (constant prices)	100,617	109,976	120,272	130,621	140,684
Exports (constant prices)	89,455	109,566	128,829	138,043	152,942
Imports (constant prices)	89,511	114,279	138,770	144,583	159,297
Openness (Degree)	88.9	101.8	111.2	108.2	111.0

Input values are in RM million. Source of data was from the Economic Report 1998/1999, Ministry of Finance, Malaysia.

4.7 Real exchange rate appreciation

A real exchange rate appreciation will lead to a loss of export competitiveness due to increased costs. Table 10 below describes the changes in the exchange rate of the Ringgit against the currencies of the major trading partners of Malaysia. The Ringgit did not show a marked movement against the US Dollar. Overall the Ringgit appreciated about 10% against the US Dollar from the base year in 1990. Against the Japanese Yen however, the movement of the Ringgit was like a yo-yo. There was a period where the Ringgit depreciated about 20% against the Yen but recovered in 1996 only to fall again in 1997. The biggest gain of the Ringgit was against the UK Sterling where it appreciated more than 40%. Against the Singapore Dollar, the Ringgit depreciated by 12% from the 1990 base year value.

One of the strongest arguments put forward to explain the financial crisis in Asia is that there was an appreciation of the real exchange rates in South East Asia and South Korea showed which decrease their competitiveness against China.

However the movements of the real exchange rate of the Ringgit cannot explain the expectations of devaluation that eventually led to a devaluation of the spot rate.

Table 10 shows the movements of the Ringgit against the currencies of some of Malaysia's major trading partners. The trend analysis was based on the movement of the Ringgit against the US Dollar. If the sharp depreciation (which is the end result of the problem that we are trying to understand here) of 1997 is discounted then the trend analysis indicate an appreciation of the Ringgit which indicate a negative trend as far as sustainability of the current account deficit. Radelet and Sacchs (1999) have highlighted the issue of overvaluation of the pegged exchange rates prior to the crises as being a key cause of currency devaluation in East Asia in 1997. Other reports (for example, Ohmae, 1997) have echoed similar sentiments.

Table 10. Real exchange rate differences of the Malaysian ringgit against selected foreign currencies.

	1990	1994	1995	1996	1997
USD					
Nominal	0.37	0.39	0.394	0.395	0.258
Nominal exch rate index	100	105.4	106.5	106.8	69.7
Price index domestic	102.2	103.7	103.4	103.5	102.6
Price index US	105.4	102.6	102.8	102.9	102.3
Real exchange rate	97.0	106.5	107.1	107.4	69.9
Yen					
Nominal	50	39.1	40.5	45.9	33.4
Nominal exch rate index	100	78.2	81	91.8	66.8
Price index domestic	102.2	103.7	103.4	103.5	102.6
Price index Japan	103.1	100.7	99.9	100.1	101.7
Real exchange rate	99.1	80.5	83.8	94.9	67.4
Yuan					
Nominal					
Nominal exch rate index					
Price index domestic		103.7	103.4	103.5	102.6
Price index China		114.8	104.5	102.8	<100.1
Real exchange rate					
SGD					
Nominal	0.65	0.57	0.56	0.55	0.43
Nominal exch rate index	100	87.7	86.1	84.6	66.2
Price index domestic	102.2	103.7	103.4	103.5	102.6
Price index Singapore	103.5	103.1	101.7	101.4	102.0
Real exchange rate	98.7	88.2	86.5	86.4	66.6
UK£					
Nominal	0.193	0.251	0.254	0.234	0.155
Nominal exch rate index	100	130.1	131.6	121.4	80.3
Price index domestic	102.2	103.7	103.4	103.5	102.6
Price index UK	109.5	102.4	102.8	102.9	102.8
Real exchange rate	93.3	131.8	132.4	122.1	80.1

The real exchange rates were calculated from nominal exchange rates and inflation rates obtained from the Economic Report 1998/1999, Ministry of Finance, Malaysia. 1990 was chosen as the base year (1990 = 100).

4.8 Banking and financial system,

Bad lending practices by banks have been touted as one of the critical causes of the Asian financial crisis. The finance sector has been described as the lubricant that oils the cogs of industry. Hence bad performance by this industry will adversely affect the national economy. The performance of the banking industry can be measured against several prudent criteria that have been developed for the purpose. However for the purpose of developing signals for currency devaluation, we have to look at the vulnerability of the banks to defaults. Here we can investigate 2 parameters:

- a) over lending
- b) over borrowing

Over lending and over borrowing (from the international capital markets) by banks and financial institutions can lead to a lending boom with its accompanying problem of poor quality loans thus leading to NPLs (non performing loans). A parameter to track over lending and over borrowing can therefore be another signal to track expectations of devaluation. Over lending can be tracked by measuring the ratio of loans to deposits. The excess of lending can be an indicator of poor banking prudence.

Table 11 below shows the loan growth for Malaysia and other banking related measures. The problem of bad loans (NPL) was critical in the early nineties (in 1993 the NPL to total loans ratio was about 13%) but appeared to be under control and by 1996 the NPL / total loans ratio was down to the 3% level. Further if we look at the ratio of NPL to the banking system capital base, the problem of bad loans too appeared to be under control as the ratio decreased 3 fold from a three quarters level to a one-quarter level. There was enough capital in the Malaysian banking system to cover all the reported bad loans. The finding in the present study is quite different from that of Corsetti et al (1998a) who reported much higher levels of bad loans in Malaysia.

However what the present study found was that there was a clear evidence of a lending boom in Malaysia prior to 1997. There was a dramatic increase in private sector lending from the early nineties to 1997. In the early part of the decade, the ratio of private lending to the GDP was about 70%. By 1996 the ratio had reached 87% and by 1997 bank loans to the private sector equalled the GDP. Clearly the markets were flushed with cash and yet the level of bad loans actually decreased. This discrepancy together with the added uncertainty of a lack of transparency fuelled investor nervousness that ultimately led to an exit stampede.

The excess lending (defined as the excess of lending over deposits) was around 400% in the beginning of the study period but dramatically rose to over 600% in 1997. Consumer spending was the only sector to mirror loan growth so it can be inferred that the lending boom spurred a consumption boom. Lending to the other sectors was stable (Corsetti et al however, found that lending to the property sector also followed loan growth). Excessive consumer spending can lead to a currency crisis as shown in Mexico in 1994. Over lending leading to excessive consumer spending appears to be a contributory factor towards expectations of devaluation. Presumably consumer spending is a non-productive sector and can reduce the quality of lending. The World Bank (1998) in its analysis of the 1997 East Asian financial crisis reported that domestic credit provided by Malaysian banks was close to 150% of the GDP, which was one of the highest ratios reported in that study.

Table 11. Loan growth and other banking measures (RM million)

	1993	1994	1995	1996	1997
GDP (current prices)	165,206	190,274	218,671	249,503	275,367
Private sector lending (% of GDP)	117,236 (70.9)	134,151 (70.5)	175,007 (80.0)	217,821 (87.3)	276,366 (100.4)
Non Performing Loans (NPL)	15,171	9,643	8,932	8,163	14,159
Non Performing Loans as % of total loans	12.9	7.2	5.1	3.7	5.1
Non Performing Loans as % of capital base	74.2	40.0	28.0	19.9	26.0
Capital base (% annual change)	20,447 (21.7)	24,077 (17.8)	31,843 (32.2)	41,011 (28.8)	54,378 (32.6)
Total deposits (% annual change)	28,258 (54.8)	30,549 (8.1)	34,445 (12.8)	41,554 (20.6)	41,931 (0.9)
Excess lending (lending / deposits)	415	439	508	524	659

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

A major problem for Malaysia however, is the drop in industrial output for the export oriented industries (Table 15) as opposed to domestic oriented industries in 1996. This can mean that GDP growth is beginning to be fuelled by government spending in infrastructure projects rather than by the manufacturing (for the export market) sector. This is a case of investment in the non-tradable segment as opposed to investment in the tradable segment. A bias towards investment in the non-tradable segment is bound to put pressure on the current account deficit.

The trend for the export growth rate was initially positive but the drop in 1996 was so large that it cancelled the benefits of the previous years healthy growth in export figures. The World Bank (1998) also reported a similar finding; export growth decreased from around 20% growth per annum before 1996 to 6% per annum in 1996 and even worse in 1997 and later.

Table 12. Growth of exports and imports (RM million)

	1993	1994	1995	1996	1997
Total exports	121,273 (17.0)	153,921 (27.0)	184,986 (20.2)	197,026 (6.5)	221,408 (12.4)
Total imports	117,405 (15.7)	155,921 (32.8)	194,345 (24.6)	197,280 (1.5)	220,984 (12.0)
Surplus/Deficit (+/-)*	3,832 (3.2)	-2,000 (-1.3)	-9,358 (-5.0)	-254 (-0.1)	424 (0.2)

Figures in brackets are % change per annum. * Figures in surplus/deficit row refer to % of total exports. Source: the Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

Table 13. Growth of exports in the key segments (RM million)

	1993	1994	1995	1996	1997
Total manufactured goods	89,666 (73.9)	120,063 (78.0)	147,507 (79.7)	159,081 (80.7)	179,355 (81.0)
Electronics	55,119 (45.5)	76,346 (49.6)	96,892 (52.4)	104,279 (52.9)	118,957 (53.7)
Agricultural commodities	11,122 (9.2)	14,212 (9.2)	16,869 (9.1)	15,365 (7.8)	16,241 (7.3)
Petroleum (crude)	7,996 (6.6)	6,548 (4.2)	6,701 (3.6)	7,212 (3.7)	7,069 (3.2)

Figures in brackets are % of total exports.

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

Table 14. Growth of imports in key segments (RM million)

	1993	1994	1995	1996	1997
Machinery and transport	65,439 (17.5)	93,390 (42.7)	116,722 (25.0)	118,483 (1.5)	132,814 (12.1)
Manufactured goods	24,252 (9.5)	29,141 (20.2)	36,465 (25.1)	35,951 (-1.4)	40,230 (11.9)
Petroleum	445 (37.8)	461 (3.6)	376 (-18.4)	465 (23.7)	474 (1.9)
Food	5,816 (6.3)	6,600 (13.5)	7,885 (19.5)	9,090 (15.3)	10,044 (10.5)

Figures in brackets are % annual change.

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

Table 15. Production indices for export and domestic industries.

	1993	1994	1995	1996	1997
Export oriented industries	216.7 (15.9)	116.9 (16.9)	135.5 (15.9)	146.7 (8.3)	165.6 (9.7)
Domestic oriented Industries	165.3 (9.8)	112.9 (12.9)	126.5 (12.0)	148.1 (17.1)	170.9 (15.4)
Total industrial output	166.2 (9.6)	112.4 (12.4)	127.1 (13.1)	141.1 (11.0)	156.1 (10.7)

Figures in brackets refer to percentage annual change. The weights were changed in 1994 hence the apparent anomaly in percentage increase between 1993 and 1994.

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia (Department of Statistics).

4.10 Composition of capital inflow

One of the most common comments to emerge in the aftermath of the Asian financial crisis was that an unduly high dependence on short-term capital inflow was used to fund the current account deficit. This was the critical problem area that led to the rapid fall of Asian currencies when nervous investors refused to roll over loans as they became due and dumped local currencies for the US currency. Current account deficits are viewed as sustainable if the deficits are financed by long term, non-portfolio investments.

First of all in Malaysia there was a persistent problem of the current account deficit being 5% of the GDP or higher. As pointed out earlier, current account deficits greater than 5% of the GDP is unsustainable. Based on this criterion alone, the Malaysian current account deficit appeared to be unstable.

Foreign direct investments (FDI) are a crucial factor in the balance of payment deficit. Financing current account deficits via FDI represent a safer route as opposed by short-term loans. However in the case of Malaysia, the FDI levels were often lower than the current account deficits hence the need to resort to short term capital inflows to meet the deficit. The short-term debt level showed some fluctuations but largely can be considered to hover around the 10% of total debt level prior to 1997. But the short-term debt to reserves index showed an increasing trend prior to 1997. By 1996 the index stood at 36% (short term debt represented 36% of the country's reserves). In 1997 the debt position of the country was worrisome to say the least (probably on account of the depreciation) – total debt was a whopping 288% of the reserves and short-term debt was 73% of the reserves. A high and continuously increasing short-term debt to reserves index will place pressure on the current account deficit adding to the unsustainability. Also the total debt to reserves index greater than 100 will place pressure on the current account deficit (Corsetti, Pesenti and Roubini, 1998). The World Bank (1999) also reported that the ratio of short-term debt to foreign exchange reserves was high for the Asian countries affected by the currency crisis and this made the countries

more vulnerable to “a potential run on their currencies” as a result of a loss of investors’ confidence (The World Bank, 1998).

Table 16. Malaysia debt position (RM million)

	1993	1994	1995	1996	1997
GDP (current prices) (% annual change)	165,206 (11.2)	190,274 (15.2)	218,671 (14.9)	249,503 (14.1)	275,367 (10.4)
Current account balance (% of GDP)	-7,928 (-4.8)	-14,770 (-7.8)	-21,647 (-9.9)	-12,196 (-4.9)	-14,153 (-5.1)
Total debt (% of Reserves)	69,181 (90.5)	73,635 (106)	85,015 (133.3)	97,833 (139.7)	170,757 (288.8)
Short term debt (% of total debt)	17,320 (10.5)	14,244 (7.5)	16,204 (7.4)	25,151 (10.1)	43,257 (15.7)
FDI (% annual change)	6,287	11,339 (80.4)	9,144 (-19.4)	17,057 (186.5)	11,473 (-32.7)
Reserves (% annual change)	76,435 (61.9)	68,172 (-10.8)	63,769 (-6.5)	70,014 (9.8)	59,123 (-15.6)
Change in reserves*	-29,239	8,262	4,403	-6,245	10,891
Short term debt / reserves Index	22.7	20.9	25.4	35.9	73.2

*Negative sign indicate a build up of reserves

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

4.11 Foreign exchange reserves

A high foreign reserves level helps to finance the current account deficit and is necessary to maintain the credibility of the exchange rate peg. Going by the book, a sufficient level of foreign reserves and a small external debt burden enables a country to finance the current account deficit at a lower cost. "The real rate (paid in hard currency terms) on the country's debt is an indication of the market's evaluation of the country's ability to sustain a current account deficit" (Corsetti, Pesenti and Roubini, 1998). The usual method of measuring the adequacy of the foreign reserves level is by translating the foreign reserves level into months of retained imports. However in the event of a financial panic as seen in 1997 in Asia, the liquidity level of the country's foreign reserves level is more important than the total foreign reserves level as it can be used to buy foreign currency.

The liquidity level of the foreign reserves level can be measured by the broad measure of liquid monetary assets to foreign reserves ratio: such as M1 to foreign reserves ratio and M2 to foreign reserves ratio (Calvo, 1998). The M1/FX and M2/FX ratios for Malaysia exhibited an increasing trend. A M1/FX ratio of > 0.8 and a M2/FX ratio > 3.0 places pressure on the current account deficit. Table 17 below describes the foreign reserves position of Malaysia.

In the 1994 Mexican crisis, Mexico had a foreign reserves level of only one month of retained imports and the M2/FX ratio was 9.1. The M2/FX ratio was 3.6 for Brazil the country most affected by the Mexican crisis. In comparison, the foreign reserves level for Malaysia exhibited a much better position but nevertheless in retrospect, this position was not good enough to prevent a collapse of the exchange rate. Clearly a strong foreign reserves position is required to reassure investors that the current account deficit is sustainable. For Malaysia, there was a gradual decline of the foreign reserves position. The foreign reserves level showed a drop from 5 – 6 months of retained imports level to 3 – 4 months of retained imports level. This level of foreign reserves appeared to be too small to prevent devaluation, probably due to poor transparency.

The data for Malaysia indicated a gradually worsening foreign reserves position in the years preceding 1997. At the end of 1996 many analysts were predicting a worse foreign reserves position (as we can see they were right) which no doubt contributed a gloomy feeling about the state of the Malaysian economy. The World Bank (1998) found that broad money (M2) for Malaysia and the other East Asian nations badly affected by the 1997 financial crisis had expanded by 20% per annum in 1996 – 1997. The World Bank (1998) also performed a vulnerability analysis, where the short-term debt to foreign reserves ratio was plotted against M2/FX ratio. Malaysia was found to be in the middle risk position. The M2/FX ratio for Malaysia was higher than that of several South American countries and about the same level as that of Mexico and Russia but the short-term debt to foreign exchange reserves ratio was lower than many of the Asian countries surveyed.

It is thus advisable for policy makers to craft national spending budgets that will at the very least maintain the foreign reserves level. Two important areas to look into is the scheduling of big-ticket expenditure (the Bakun Dam project easily comes to mind) and the financing of targeted industrial sectors (for example Malaysia's bet on the electronic industry and now the MSC – Multimedia Super Corridor). The infrastructure investment for these projects should not cause the foreign reserves level to dip. On hindsight, the unfortunate relatively close timing of the KLCC development, KLIA, the various highways and Bakun probably contributed towards analysts feeling uncomfortable with Malaysia's balance of payment position and which ultimately caused the country to be severely affected by the contagion effect of the devaluation of the Thai Baht. Singapore provides a sound case for prudent foreign reserves level: $M1/FX = < 1$ and $M2/FX = 1.2$.

Table 17. Malaysia's foreign reserves position (RM million)

	1993	1994	1995	1996	1997
Foreign reserves (% annual change)	76,435 (61.9)	68,172 (-10.8)	63,769 (-6.5)	70,014 (9.8)	59,123 (-15.6)
As months retained import	5.6	4.5	3.3	3.6	2.7
M1	41,792	46,470	51,923	60,585	63,365
M2	139,800	160,366	198,873	238,208	292,217
M1/FX	0.55	0.68	0.81	0.87	1.07
M2/FX	1.83	2.35	3.12	3.40	4.94

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.

4.12 Interest rates

Table 18 below lists the prime lending rates in Malaysia and several of the countries that are important sources of investment. It can be seen that the interest rates among the selected countries were relatively stable. Malaysia had generally a higher interest rate than the other countries. This is understandable as relatively high interest rates serve to lure capital into the country. For example the interest rates in Malaysia was 3 times that in Japan. Presumably this was a critical reason for Japanese investments making a beeline for Malaysia. Such capital inflows serve to reduce the pressure on the current account deficit.

A high domestic interest rate regime act to prevent currency devaluation by restoring risk adjusted parity conditions (high interest rates offer foreign investors sufficient rewards to offset the risk of investing in the domestic economy) but a high interest rate regime also act to raise the cost of funds for domestic entrepreneurs and may lead to a domestic recession.

We can see that the interest rates in the US were sometimes higher than in Malaysia. Inflation in the US was also lower than in Malaysia. Thus in 1994 and 1995 it was not attractive for US capital inflow into Malaysia. In 1996 and 1997, market watchers could have speculated that Malaysian domestic interest rates would have to rise in the future to match the interest parity conditions in the US. However such an interest rate hike would result in a domestic recession as the cost of funds would suddenly shoot up (1994 – 1997 was the period when bank lending shot up). In 1998 when the financial crisis was at its peak in Malaysia, high interest rates that threatened to climb even higher was thought to be as the second most important economic reason for causing and prolonging the recession (the most important was of course the devaluation of the Ringgit itself)

The trend for the Interest rates level for Malaysia was positive and the actual interest rates comparatively high but it was not high enough to prevent currency devaluation probably due to the overall weak position of the economy. Further it was widely speculated that the government was unable to increase interest rates any higher because of the high gearing ratios of big businesses. The World Bank (1998) has also found that the interest rates prior to the crisis was high enough to deflect criticism on bank inefficiencies (The World Bank, 1998).

Table 18. Prime lending rates of Malaysia and her leading sources of external finance (% per year).

	1993	1994	1995	1996	1997
USA	6.0	8.5	8.75	8.25	8.5
Japan	3.6	4.9	2.6	2.6	2.3
Singapore	5.3	6.5	6.3	6.3	7.0
UK	6.5	7.25	7.5	7.0	8.25
Malaysia	8.5	7.0	8.2	9.25	10.3
Euro dollar	3.3	6.5	5.6	5.6	5.7
Asian dollar	3.25	6.4	5.9	5.7	5.75

Source: Economic Report 1998/1999, Ministry of Finance, Malaysia and Bank Negara Malaysia statistic reports.