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## **Determinants of FDI flows to developing economies: evidence from Malaysia**

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## Determinants of FDI Flows to Developing Economies: Evidence from Malaysia

*Zubair Hasan*

### 1 Introduction

Private foreign investment flows have emerged as the single largest source of external finance for developing countries in recent decades. These flows broadly take two forms. First is the foreign direct investment (FDI) that multinational corporations bring in to establish production units or undertake specific projects in the host country independently or in collaboration with the local entrepreneurs. FDI entails not only a transfer of resources but also the acquiring of control. The investor aims at securing a lasting interest and an active role in the company of the host country (IMF, 1993).

Second, we have the foreign portfolio investment (FPI), for example in stocks, bonds and notes in the credit and stock markets of a country by private foreign institutions – banks, mutual funds and corporations – or individuals. These investments, being liquid, are highly volatile, and move freely across national boundaries to enlarge profits and diversify investment packages (Lewis, 1999). Their movements are very susceptible to the ‘herding behaviour’ of investors. In this chapter we are concerned only with the FDI inflows, portfolio investment coming into the picture only indirectly.

FDI is intended to augment the production capacity of the host country, and take entrepreneurial risks for profits. Comparative location advantages mainly direct the investors in their choice of destination albeit other factors are now assuming importance. One advantage of direct investments is their ‘dug-in’ character: they are not prone to leave the host country at the first sign of adversity. Also, they tend to tolerate relatively less developed financial structures (Wilhelms, 1998). Flows of FDI to developing countries increased from about US\$ 24 billion in 1990 to US\$ 170.5 billion in 2001 – i.e. by more than sevenfold. But interestingly, their rate of growth slowed down considerably after the 1997–8 financial crisis. The year 1997 marks a sort of watershed.

FDI flows have since increased from one developed country to another, reducing the share of the developing economies (Hasan, 2003, Table 1).

The pros and cons of FDI as a source of financing development in the Third World have been discussed in the literature for years, although the debate still lingers (Loungani and Razin, 2001). However, in view of the ongoing process of liberalization and globalization the volume of private capital flows across national borders is only likely to increase with the passage of time (Dunning and Narula, 1997). The issue before the developing countries then is: how well can they manipulate the inevitable to their advantage? Indeed, countries are today competing to enlarge their share in the global pie that is tending to shrink at present. Malaysia, in particular, is eager to boost the confidence of international investors to regain if not surpass their pre-1997 level of FDI inflows.<sup>1</sup>

The urge to attract foreign capital naturally requires an examination of the factors that do or would determine the flow of foreign funds into the country. A number of recent works have discussed FDI flows to Malaysia as part of wider regional studies.<sup>2</sup> Such studies are enlightening but tend of necessity to generalize the analysis to the neglect of individual country peculiarities. Economic structures, social environment, political settings and international relations of countries pooled together are usually too diverse to allow meaningful comparisons (Hasan, 2003, p. 1). Again, the data used for the sample countries are those reduced to a common currency. This detracts from the comparability of data with reference to the conversion base or method. Even the ASEAN economies are too diverse for comparative studies beyond a certain limit: there is a strong case for country-specific studies. Rich natural resources and a cheap labour force are advantages many countries including Malaysia enjoy, but her economic achievements also owe much to the political stability, social cohesion and sensible planning: GDP has grown at an average rate of 7 per cent since 1970.

The main objectives of the present exercise are to see (a) what factors in general attract foreign capital to the developing economies, (b) which of these or other factors have been relevant in the Malaysian case and (c) what policy lessons the experience has for Malaysia or others. Section 2 sets up the background for the work: it examines the role and destination of foreign investment in Malaysia. Section 3 reviews the current literature on the subject in search of the FDI determinants. Section 4 deals with the data, variable identification and the creation of a simple descriptive model to assess the efficacy of the chosen determinants. Section 5 presents and discusses the results obtained. Finally, in Section 6, we make a few concluding remarks.

## 2 Background

Following global trends, FDI flows to Malaysia rose from US\$ 2.33 billion in 1990 to US\$ 5.1 billion in 1997 – i.e. equivalent to 5.2 per cent of her GDP.

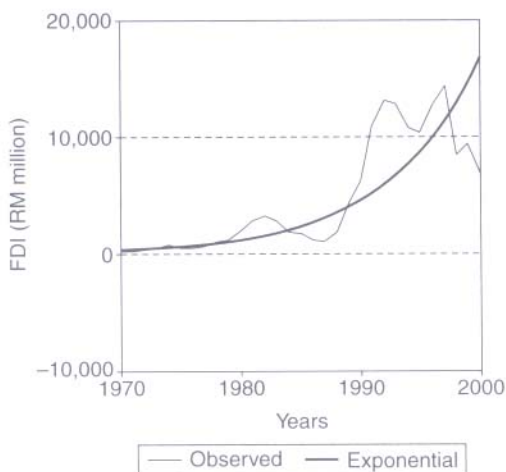


Figure 8.1 Malaysia: exponential growth of FDI, 1970–2000

However, after the financial crisis of that year, net FDI inflows dwindled to a mere US\$1.5 billion – i.e. equal to no more than 1.86 per cent of GDP in 2001 (*World Development Indicators*, 2003). On the whole, net FDI has grown exponentially over the past three decades, as Figure 8.1 clearly shows.<sup>3</sup>

It is interesting to see that the destination of FDI flows followed quite closely the long-run changes taking place in the economic structure of the country. Possibly, Malaysia's reliance on foreign capital for development in some measure, forced such changes on the economy. Much of the foreign investment in the country is associated with the growth of modern manufacturing, including electronic goods, electrical machinery, chemicals, textiles and wood products. However, over time the services sector has tended to expand faster, inducing a corresponding shift in the destination of FDI flows. This shift picked up during the 1990s when the FDI tide was on the rise. One can easily see that the skyline of the manufacturing sector bars in Figure 8.2 is concave from below while that of the services sector is convex. In fact, by the year 2000 the share of the services sector, at 43 per cent of FDI, had already overtaken that of the manufacturing sector, at 32 per cent. Oil and gas sector was third in order of importance. The property sector has lagged far behind.

One reason for FDI playing an important role in Malaysia has been the preference of the multinational corporations to establish and finance industries geared to exports. This made the country essentially a wide-open trading economy.<sup>4</sup> Investment in the services sector was also linked closely to the expansion of the finance, transportation and information systems: establishment of the off-shore financial center at Labuan, port development

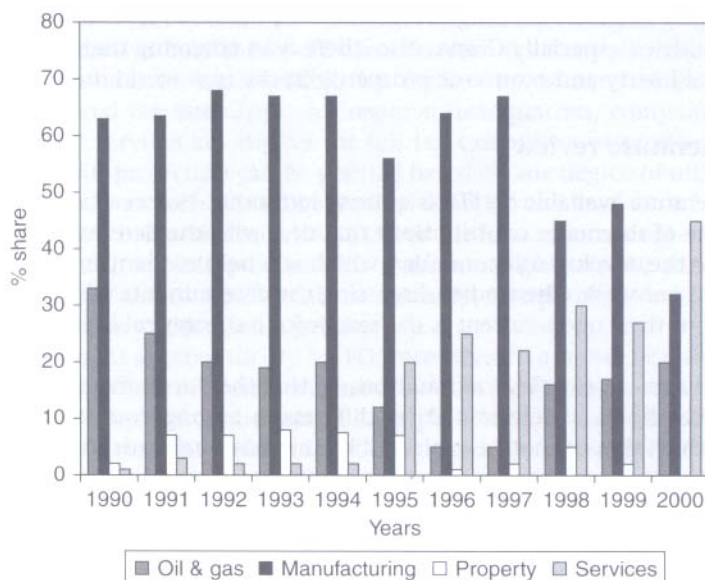


Figure 8.2 FDI (share of sectors), 1990–2000

Source: Bank Negara Malaysia, *Annual Report* (2000).

and the erection of the Multimedia Super Corridor are some examples. However, the recent decline in FDI inflows is causing concern to policymakers. Two reasons are usually advanced. The first is the wasteful inefficient use of resources claimed as epitomized in the rising capital–output ratio over the years (Star, 1999, p. 3). The second is said to be the use of capital controls the country resorted to for remedying the situation during the 1997–8 financial crisis. Both need a closer look.

Initially, we had included the incremental capital–output ratio (ICOR) in the independent variables of our model. Assuming that a rising ICOR indicates economic inefficiency, we expected it to be in an inverse relationship with FDI. We found that the relationship suffered from a high degree of serial correlation, and when combined with other regressors in the model, the coefficient was grossly insignificant, adding little to the value of  $R^2$ : in sum, it was having no impact on the FDI inflows. It was investment in the huge capital-intensive projects with long gestation periods that made the ICOR climb sharply – it rose from 3.0 in 1988 to 6.5 in 1997 – not the inefficient or wasteful use of resources.<sup>5</sup>

Likewise, it is difficult to accept the idea that capital controls drove FDI flows away from Malaysia (Hasan, 2002, 2003). The selective controls the country imposed were withdrawn within a year – i.e. as soon as they had served their purpose; only the currency peg remained. The cause of reduction

has largely been the growing competition for the flows from other developing countries, especially China. Also, there is an emerging trade-off between national liberty and economic prosperity in the new world order.

### 3 Literature review

The literature available on FDI is quite voluminous. However, we shall focus on some of the major contributions that deal with the determinants of FDI flows to the developing economies, which will help us identify variables relevant to our work. The studies discussing the determinants raise a variety of issues but their undercurrent is the search for a theoretical basis behind the variables.

One view – in the *classical* tradition – is that the direction and magnitude of capital flows is determined by differences among countries in factor proportions that cannot be explained by international trade. A difference in factor proportions between countries stimulates an adjustment of their real exchange rates and encourages countries with abundant capital supplies and labor shortages to station their investments in developing economies where opposite conditions prevail (Krugman and Obstfeld, 1994). This, for example, brought foreign capital for the development of tin mines and plantations to Malaya. Chunlai (2002) illustrates the location theory using the Chinese experience. Opponents argue that factor proportions can rarely be the sole determinants of international capital flows, the latter being much volatile compared to the relatively stable factor endowments. Indeed, exchange rates are regarded as the major factor guiding multinational firms in their choice for FDI destinations (Nakamura and Oyama, 2001).

In Malaysia, FDI seems to integrate the national economy with those of the investors. It tends to increase exports from home country to the host country as well as imports in the reverse direction: the integrated assembly lines in the host countries require imports of intermediate goods for their production. This sort of FDI is quite sensitive to changes in exchange rates and is also linked to the volume of trade.

Again, some writers argue that the policies a country designs for increasing the FDI inflows to be effective, need the erection of an institutional infrastructure conducive to the objective. Governmental organs, markets, educational systems and social-cultural setups must be efficient and effective in transmitting the policies designed to facilitate FDI transactions. It is 'institutional fitness' that makes policies concerning FDI inflows succeed (Wilhelms, 1998). A fuller discussion of this approach is available in a working paper published in 2002 by the Bank of Japan on the determinants of FDI flows inspired by the seminal study of Goldberg and Klien (1998) on the subject. The concept implies the prior existence of appropriate policies. Of course, such policies cannot be the same for all countries.

Even so, Lewis (1999, Table 4.3) mentions among his illustrations the wide range of incentives available to FDI in Malaysia: for example, tax exemptions and reductions are available for foreign investment in promoted sectors, reduced tax rates apply for regional headquarters, companies that provide R&D services are eligible for full tax exemption of profits for five years and tariff protection can be granted based on the degree of utilization of domestic raw materials, level of local value added and level of technology in the industry. Incentives are also linked to the level of local content in the product.<sup>6</sup> Thus, suitable policies plus institutional fitness are the key to success. These factors are difficult to quantify, but perhaps development expenditure can, at times, be a good proxy.

Lewis contains another theory for FDI incentives in a rather negative garb: he lists the barriers to FDI inflows that may exist in a country, and provides in his Table 4.1 some of the factual examples classified as 'restrictions' on market entry, ownership, control and operations. The removal of the barriers would tend to improve the FDI flows into the developing economies.

In addition, there are works, mostly empirical, that do not care to state, at least explicitly, a theoretical basis for their position but prefer to immediately identify and explain what they consider as determinants of the FDI relevant to their immediate objective. Singh and Jun (1995), for example, analysed in their study of the determinants of FDI flows to developing economies the impact of such qualitative factors as political risk and business conditions, along with quantitative macroeconomic variables. Using a pooled model, they found that export, especially of manufactures, is the strongest variable explaining the flows to a country. They also discovered that exports (Granger) cause the FDI.

Another study that includes some qualitative factors as well is Lim (2001). He summarizes recent arguments and findings on two aspects of FDI: the FDI correlation with growth, and with its own determinants. In the first case he finds that while substantive support exists for positive spillages from FDI, there is no consensus on causality. Among the determinants he finds that market size, infrastructure quality, political and economic stability and free trade zones (FTZs) are important for FDI. However results are mixed regarding the importance of fiscal incentives, the business or investment climate, labour costs and openness.

Phang Hooi Eng, a Senior Manager in the Economics Department at Bank Negara Malaysia (1998) found that the net effect of FDI on the balance of payments had been negative, and FDI appeared to have taken more out of the economy than it had put in, even though this negative effect may have been more than offset by retained earnings which are ploughed back either for reinvestment in business or for new investment in related or new areas of business. Her argument implies a negative relationship between FDI flows and the balance of payments (BOP) in developing countries.

Nina Bandelj (1998–9) considers FDI a powerful catalyst in transition to a market economy. Being a sociologist, she examines the effects of institutional, cultural and social structure embeddedness of investor and host countries as determinants of FDI in transition economies. The results of her regression analysis indicate that net of host country characteristics the inflows depend significantly on the institutional arrangements, shared cultural understandings, presence of migration net works and trade ties between a pair of countries. These findings highlight the importance of a relational perspective in understanding macroeconomic processes and are found to be relevant to the Malaysian case as well.

With the increasing net FDI inflows, developing countries have also experienced large-scale capital flights in recent decades. Is there any linkage between the two? Chander Kant (1996) seeks to answer this important question. He postulates that if the investment climate improves, FDI must increase and capital flights should decrease; the relationship between the two must, therefore, be negative. He constructs three versions of capital flight. Employing correlation and PCA techniques, he finds ample support for his proposition.

Finally, we must mention two important publications that provided inspiration and material for many of the works dealing with issues concerning foreign capital flows across national borders: World Bank (1997) and UNCTAD (1998).<sup>7</sup>

#### 4 Variables, data and model

The above literature review shows that there are a variety of factors – economic and non-economic, qualitative and quantitative – that can be viewed as determinants of FDI in a country. We have chosen six variables as determinants of the net private FDI flows to Malaysia. We would have preferred to work with quarterly data that could have allowed the study restricted to more recent years, the data would have also been more compact with an adequate number of observations for analysis. However, quarterly data for *all* the variables in the scheme were not available. Also, being a country-specific study, it could not use a panel model, as do most of the empirical studies on the subject. We perforce decided to use annual data over a thirty-one-year time span (from 1970 to 2000). As qualitative factors tend to change rather fast over time and are difficult to keep track of, we restricted the choice to quantitative variables. Even in their case, the available data was not always very satisfactory, and approximations and proxies had to be used. The variables for the study are:

- FDI Foreign Direct Investment
- CF Capital flight
- EXR Exchange rate



RG	Rate of growth
CAB	Current account balance
DEX	Development expenditure
ER	Export to GDP ratio

FDI comprises net private FDI. The entry has different titles over different time spans in the BOP statistics Bank Negara has published – corporate investment, corporate investment (net) and private FDI. FDI in Malaysia comes in public sector projects as well, but it is omitted for this work, as market forces do not guide the flow. Likewise, the Ringgit loans raised by MNCs in the local market to finance the assets they import, as also the earnings they retain (e.g. for reinvestment), are not included owing to the lack of necessary details.

Institutions and individuals have both evolved methods for estimating the magnitude of capital flight (CF) from a country. Chander Kant (1996) compares methods designed by the World Bank, Dooley and Cuddington. He modifies the Cuddington's study to produce his own version (pp. 6–10). Israel Pinheiro (1997) provides alternative estimates for Brazil from 1971 to 1987 using the World Bank, Morgan and Cuddington methods (pp. 8–11). We have more or less followed the Cuddington method for the present work in view of the information, as it is available in the Malaysian balance of payments statistics.<sup>8</sup> We have taken the sum of rows shown in Section V of the Bank Negara reports up to 1986 under the title 'Private Financial Capital'. These included sub-heads 'Commercial Banks', 'Others' and 'Errors and Omissions including other Short-Term capital'. The items were lumped together from 1987 in a BOP sub-division containing 'Private Short-Term capital', and 'Errors and Omissions.' The sum of the items is multiplied by (-1) for each year to make the series compatible with its heading, 'Capital Flight', (+) values showing the *outward* flows, and (-) values the *inward*.

Rate of exchange or EXR has long been regarded as an important determinant of FDI flows. We have taken the nominal end-year Ringgit price of the US dollar as our variable. An increase in EXR so defined would mean a depreciation of the local currency *vis-à-vis* the US dollar in the foreign exchange market. As all trade in Malaysia is in terms of dollars, FDI flow is expected to increase in response to a fall in the value of the Malaysian currency. As such, we expect a positive relationship between EXR and FDI.

RG is the rate of growth of real GDP, and is expected to have a positive linkage with foreign investment flows. An economy that grows at an adequate and rising rate offers the chance to the foreign investor to earn attractive and regular profits at lower risks. Malaysia has maintained high rates of growth over fairly long periods of time, and FDI flows have also been substantial. Evidently, the two must be directly related.

BOP surpluses are one indicator of the financial and economic health of a developing country and may contribute to attract foreign investment, their

relationship with FDI flows usually is expected to be positive. We have taken only the current account balance CAB for the present exercise, to keep the variable independent of the FDI which influences, sometimes considerably, the overall BOP.

One prerequisite for an economy to stimulate FDI inflows is the expansion of various sorts of infrastructural facilities, including means of transportation and communication, power supply, educated skilled workers, accommodation and the like. We have taken the annual net developmental expenditure or DEX of the public sector as a proxy for the provision of such facilities. We have not related it to GDP as some writers have done, for any net expenditure incurred on infrastructural facilities would add to their availability irrespective of a rise or fall in their ratio to the country's GDP. Increase in DEX is expected to have a direct impact on the FDI.

Growth of exports and its pace measure the extent of a country's integration with the global economic network. Exports, especially of manufactures, rising fast over the years, as in Malaysia, improve investors' confidence in the economy and spur the flow of foreign capital to the country. We have taken ER as the ratio of exports to the GDP expressed as percentages, measuring the change in both the level and pace of the variable. The data is presented in Table 8.1.

We set up the following multivariate regression model:

$$\text{FDI} = \beta_0 + \beta_1 \text{CF} + \beta_2 \text{EXR} + \beta_3 \text{RG} + \beta_4 \text{CAB} + \beta_5 \text{DEX} + \beta_6 \text{ER} + u \quad (1)$$

In this equation,  $u$  is a catch-all variable allowing for the influence on FDI of all other variables that are not included in the independent variables' list. It follows from Table 8.2 that the net flow of private FDI to Malaysia over the thirty-one years of our study aggregated to around 146 billion US dollars, giving a handsome average of \$ 4.728 billion a year. The outflow of the volatile portfolio investment has averaged a little more than half of that amount. The exchange rate has been quite stable over the years with a standard deviation of 0.4870 for an average of RM 2.6946 to the US dollar for the period. The economy grew on an average by almost 7 per cent a year, real per capita income more than doubled after 1987 and the current account showed an overall surplus.

A comparison of the averages over the decades, as given in Table 8.2, is even more interesting. We find that most of the foreign investment came into the country during the 1980s and 1990s, and at an increasing rate, as depicted in Figure 8.1. The exchange rate went up only in the 1990s mainly because of the 1997-8 turmoil that resulted in the devaluation of the Ringgit by 34 per cent. In fact, the currency strengthened during the 1980s, the average Ringgit price of dollar even falling slightly. The openness of the economy grew, especially during the 1990s, when the ratio of exports to GDP shot up, averaging 90 per cent. Average development expenditure rose by almost six times over the twenty years. The average rate of growth dipped but looked up again in the 1990s.

Table 8.1 Determinants of FDI in Malaysia, 1970–2000 (RM million)

Years	Foreign direct invest	Capital flight	Exchange rate	Growth rate	Current account balance	Develop. exp.	Export GDP ratio
Y	FDI	CF	EXR	RG	CAB	DEX	ER
1970	290	282	3.0775	5.1	25	725	44.40
1971	305	182	2.8863	10.0	-329	1,085	41.25
1972	477	82	2.8170	9.6	-698	1,242	37.61
1973	480	270	2.4545	11.8	246	1,128	51.38
1974	833	-225	2.3095	8.2	-781	1,876	56.10
1975	532	895	2.5857	2.5	-421	2,151	49.00
1976	498	1,059	2.5352	11.7	1,686	2,378	56.23
1977	648	2,907	2.3641	7.9	1,198	3,217	46.37
1978	1,158	1,213	2.2077	6.9	249	3,782	46.91
1979	1,255	2,299	2.1887	9.1	2,033	4,281	54.53
1980	2,033	791	2.2175	7.5	-620	7,470	54.29
1981	2,914	1,423	2.2433	6.9	-5,633	11,358	48.41
1982	3,263	617	2.3185	5.2	-8,409	11,485	45.93
1983	2,926	1,148	2.3387	5.9	-8,117	9,670	46.88
1984	1,859	2,331	2.4263	7.6	-3,917	8,407	48.55
1985	1,725	-502	2.4135	-1.0	-1,522	7,142	49.05
1986	1,262	-1,275	2.6015	1.2	-316	7,559	49.68
1987	1,065	2,344	2.4915	5.2	6,642	4,741	55.77
1988	1,884	2,627	2.7125	8.7	4,739	5,231	59.82
1989	4,518	-574	2.6991	8.8	698	7,696	64.45
1990	6,309	-4,375	2.6981	9.8	-2,483	10,689	66.88
1991	10,996	-4,740	2.7235	8.7	-11,644	9,565	69.93
1992	13,204	-12,038	2.6065	7.8	-5,622	9,688	68.79
1993	12,885	-23,301	2.7011	8.3	-7,926	10,124	70.41
1994	10,798	5,151	2.5578	9.2	-14,770	11,277	91.33
1995	10,454	-633	2.5405	9.5	-21,647	14,051	94.09
1996	12,777	-3,946	2.5279	8.6	-11,226	14,628	91.58
1997	14,450	13,290	3.8883	7.8	-15,820	15,750	93.20
1998	8,490	7,720	3.8000	-7.5	36,794	18,103	105.24
1999	9,397	42,681	3.8000	5.8	47,895	22,615	107.45
2000	6,894	46,681	3.8000	8.3	31,958	23,512	109.76
Mean	4,728	2,722	2.6946	7.0	396	8,472	63.72

Source: Estimates are based on data published in Bank Negara Malaysia, *Annual Reports*.

Table 8.2 Mean values of the variables (RM million)

Periods	FDI	CF	EXR	RG	CAB	DEX	ER	N
1970–80	773	887	2.5131	8.2	235	2,667	48.92	11
1981–90	2,773	376	2.4942	6.0	-1,832	8,398	53.54	10
1991–2000	11,034	7,087	3.0954	6.6	2,799	14,931	90.18	10

Source: Data as given in Table 8.1.

A major policy shift took place towards improving, and expanding local infrastructural facilities, that involved much longer gestation periods. Development of the Labuan off-shore financial centre, the Kuala Lumpur International Airport (KLIA), the Langkawi tourist complex, the KL city centre, the construction of North-South expressway, the erection of rapid-transit railway systems, the building of a new administrative district and a Multimedia Super Corridor are some of the examples of works that needed exceptional investment, and with the returns that could grow only at a slower pace. This capital deepening will attract even more FDI to the country in the course of time, and the expenditure extends the benefits of development to future generations.

## 5 Results and their analysis

The data were subjected to unit root and cointegration tests; both were negative. Table 8.3 presents the results for the regression model of (1). The results are quite robust. Adjusted  $R^2$  explains almost 90 per cent of the variation in the FDI, and is free of serial correlation. All coefficients are significant at 5 per cent level. Collinearity, as is common for time series models, does exist but is not of a serious dimension.<sup>9</sup> The direction of the relationship of various explanatory variables with the dependent variable FDI is along the expected lines. Figure 8.3 (p. 165) shows the extent of the regression fitness and Figure 8.4 (p. 166) shows that the residuals are trend-free. The coefficient for capital flight (CF) is negative. But an increase of 1 million Ringgit in CF is likely to go with a reduction in FDI inflows by a much lesser amount – RM 213,000 only. This conforms well to the difference in the nature and causes of the two factors explained in the introduction.

The negative relationship of CAB with FDI is unexpected and rather intriguing, as it is in line with Eng's finding reported earlier (p. 159). One plausible explanation may be that the increasing surplus on current account indicates the inability of a country to make gainful use of available foreign exchange resources, and FDI flows, therefore, tend to taper off. Alternatively, the surpluses may increase because the necessary complementary foreign investment is not coming in. The latter is probably truer for Malaysia as the local savings for 2000–2 have, for instance, been larger than what the economy could

Table 8.3A Model summary

$R$	$R^2$	Adjusted $R^2$	Standard error of the estimate	$F$	Durbin-Watson
0.957	0917	0.896	1541.72	541.75*	2.190

Note: \*  $p$ -value for  $F$  is (0.000). Upper limit for Durbin-Watson at 5 per cent for  $k=7$  and  $n=31$  is 2.018.

Table 8.3B Coefficients (dependent variable FDI)

	Explanatory variables						
	Constant	CF	EXR	RG	CAB	DEX	ER
Coefficients:	-14,828.705	-0.213	2,894.459	194.658	-0.0717	0.411	118.216
<i>t</i> -values	-6.355	-5.302	3.007	2.135	-2.193	4.112	4.023
Significance	(0.000)	(0.000)	(0.006)	(0.043)	(0.038)	(0.000)	(0.000)
Elasticity*		0.1232	1.650	0.287	0.006	0.736	1.593
Collinearity statistics:							
Tolerance	0.304	0.361	0.652	0.357	0.214	0.203	
Variance Inflation Factor	3.288	2.773	1.534	2.803	4.677	4.926	

## Notes

\* We have used the mean in calculating elasticity instead of the usual geometric mean. Some of the values in the data were negative.

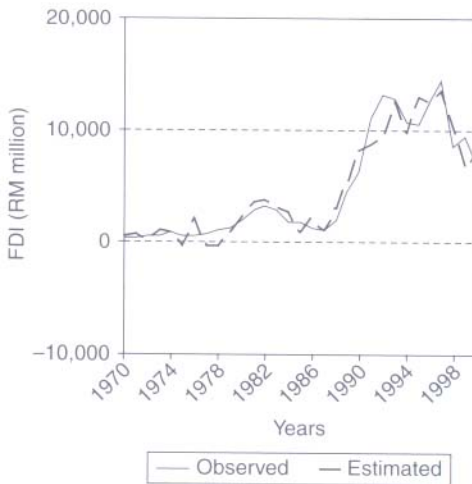


Figure 8.3 Observed and estimated values of FDI, 1970–98

invest. The positive sign for the RM-dollar exchange rate is in line with the empirical evidence that a weak currency is likely to increase the foreign investment flows to a country over time (Toro, 1999). Indeed, the rate has been the most dominant determinant of the FDI flows into Malaysia: over the period under review a 0.01 rise in the rate has, *ceteris paribus*, induced a net flow of about US\$ 27 million to the country. Still, notice that EXR Granger caused the FDI and the reverse was not true – i.e. in Malaysia the relationship between the two variables has been unidirectional (see Table 8.4).

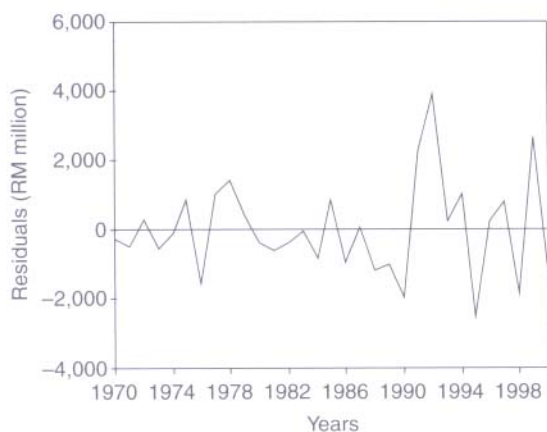


Figure 8.4 Residuals of the model, 1970–98

Table 8.4 Granger bi-variate *F*-test for causality

Null hypothesis ( $H_0$ )**	<i>F</i> -statistics	Critical value*	Result	N
FDI dnc <sup>†</sup> EXR (1)**	0.1312	4.24	Accept $H_0$	31
EXR dnc FDI (2)	4.1513	3.42	Reject $H_0$	31
FDI dnc ER (3)	0.4171	2.93	Accept $H_0$	31
ER dnc FDI (2)	3.5318	3.42	Reject $H_0$	31
FDI dnc EXR (3)	0.4171	2.91	Accept $H_0$	31
EXR dnc FDI (2)	3.5318	3.42	Reject $H_0$	31
FDI dnc RG (2)	0.9775	3.44	Accept $H_0$	29***
RG dnc FDI (1)	7.9506	4.24	Reject $H_0$	29***

*Notes*

\* Critical values are at 5 per cent level of significance.

\*\* The numbers in parenthesis are the optional lag lengths of the causal variable as chosen according to the FPE criterion.

\*\*\* Negative RG is excluded.

<sup>†</sup> dnc=does not cause.

Rate of growth (RG) has the usual positive relationship with FDI. A 1 per cent rise in RG tends to induce a capital flow of about RM 204 million for the economy. This presumably explains in part why the economic managers in Malaysia, as elsewhere, place emphasis on promoting growth rather than distributive justice. Based on a 1997 survey the Gini coefficient for Malaysia climbed to over 49 per cent (*World Development Indicators*, 2003, Table 2.3), and remains among the highest in the world. It is also interesting to note that, like the rate of exchange, it is growth that Granger causes the FDI, and not vice versa.

As expected, development expenditure DEX has a positive relationship with FDI inflows and the coefficient too is not small: a 1 million Ringgit

increase in DEX is likely to bring in no less than RM 411,000 in foreign investment. This justifies the huge infrastructural investment the country has undertaken in recent decades.

Exports play a crucial role in attracting foreign capital to Malaysia. A 1 per cent rise in ER is likely to increase FDI inflow by around RM 120 million! This endorses the fact that Malaysia is essentially a trading country and exports remain her engine of growth. Finally, notice that the row recording the elasticity of regression coefficients in Table 8.3A shows the exchange rate as the leading determinant of FDI inflows, followed by exports and infrastructural development.

## 6 Concluding remarks

The economic achievements of Malaysia since independence, especially during the 1980s and 1990s, make the country one of the brightest stars in the firmament of the developing world. Every country today has to move forward with the traffic on the globalization road even if the rules of the game do not always look equitable. Malaysia chose that path much earlier, as though the country could see the shape things were going to take. The country opened her gates to the world much earlier for the free flow of capital and goods across the national borders and erected production facilities to take advantage of her rich natural resources and cheap labor force. This encouraged the private sector not only to flourish but to become partners with the public sector in the process of national advancement. It advocated a 'prosper-thy-neighbour policy' in trade for mutual benefit. The business-friendly environment in Malaysia resulted in making the country one of the largest recipients of FDI among the developing countries.<sup>10</sup>

Malaysia had location advantage, and created fast a physical and social infrastructure matching with foreign investors' expectations. The results of our model, as described above, bear ample testimony to this. The leadership ensured peace and stability in the country that encouraged the growth of the non-quantifiable factors that are stressed in the literature for attracting FDI. It put in place an educational system including twinning programs with foreign universities to create a growing pool of skilled manpower. Proper linkages between different sectors of the economy were forged and maintained to avoid bottlenecks. Everything was geared to fit into a long-run national aspiration epitomized in the realistic targets of 'Vision 2020'. The country is well on road to that destination.

Foreign capital flowed in abundance to take advantage of the profit-earning opportunities the country offered and these tended to expand because of well-coordinated monetary and fiscal policies. It is a measure of the efficacy of these policies that over the range of regression FDI in Malaysia followed growth, did not lead it, as was the case with the exchange rate. Even exports, the crucial variable for Malaysia, are not found to lead growth, in contrast to what Singh

and Jun (1995) found for developing economies in general. In other words, the country has been an equal partner in the progress and reward-sharing of a flourishing economy, not a taker of dictation from foreign investors.

Since the competition for attracting FDI is on the rise, and political equations rather than economics are becoming more important, the country must add newer global links and promote self-reliance. The infrastructure, socio-political stability and a savings rate running at over 40 per cent of GDP can help Malaysia sail with confidence through any rough waters.

## Notes

1. On the Malaysian approach to foreign capital flows, see the Bank Negara *Annual Report* (2000), pp. 199–200.
2. See for example, Chadee and Schlichting (1997), Mehmet and Tavaloki (2003) and Zhang (2001).
3. The data used to draw the curve is from Table 8.1. Of the several curves tried the exponential growth of the form  $Ab^x$  gave the best fit. The equation is  $FDI = (329.28)(1.1138)^x$ , where 1970 is the origin, and  $x$  is the year unit.
4. The ratio of trade volume – exports + imports – of a country to GDP has a positive relationship with the country's degree of openness. In the case of Malaysia, this ratio went up from 133 per cent in 1990 to 184 per cent in 2001, lower only than Singapore in the region (see *World Development Indicators*, 2003, Table 6.1).
5. The Crisis and Policy Response (*Star*, 1999) argued that the steeply rising ICOR indicated that the use of capital had become increasingly less efficient. Interestingly, in the next sentence the report agreed that the rise could also be attributed to increasing investment in capital-intensive projects with long gestation periods (p. 3). See also the comment in Hasan (2002, n. 7)
6. See Bank Negara Malaysia policy statements on foreign capital, in their various *Annual Reports*.
7. The UNCTAD Report noting that the developing countries were strongly interested in attracting FDI for accelerating growth and economic transformation listed the principal determinants influencing the location choices of the foreign investors (Table 2), reproduced in Mallampally and Sauvart (1999).
8. To explain these methods, we list the relevant BOP items as in IMF (1993): A Current Account Surplus; B Net Foreign Direct Investment; C Short Term Capital; D Portfolio Investment; E Banking System Foreign Assets; F Changes in Reserves; G Errors and Omissions; H Changes in Debt or Current Account:

### Capital flight estimates

World Bank	$A+B +F +H$
Morgan	$A+B +F + H-E$
Cuddington	$-C-G$
Hasan	$-C -G -E$

9. The issue concerning collinearity is not its existence or absence in multivariate regression results. It is the *degree* of collinearity that matters. Even here, it essentially is a heuristic concept. Furthermore the presence of collinearity, unless it really is very serious, does not destroy the validity of results. For an elementary discussion of the issue see Gujarati (1992, Chapter 10).



10. Weigel (1997) reports that among the top 12 countries ranked with reference to FDI flows, Malaysia ranked fourth during the 1970–89 period. Its rank improved to third position for 1990–6 period after only China and Mexico.

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