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# THE IMPACT OF FOREIGN CAPITAL INFLOWS ON THE MALAYSIAN ECONOMY, 1966-96

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## Abstract

The effects of foreign capital inflows (FCI) on economic development have been the focus of attention of many researchers and policymakers. Under conventional expectations, FCI brings positive effects to the host country in terms of new investible funds, augmenting domestic savings and foreign exchange earnings. The critical literature, however, maintains that FCI have undesirable effects on the domestic savings rate as well as on the recipient's balance of payments position.

This study applies the ordinary least squares method to test both sets of influences in the Malaysian experience between 1966 and 1996. The analysis takes FCI as an aggregate variable as well as disaggregated variable, i.e. by distinguishing between debt and foreign direct investment (FDI). The tests find that while FCI augmented domestic investment funds to accelerate the growth rate, it had negative influences on the savings rate as well as on the balance of payments position.

The findings also suggest that domestically-raised funds, through savings and self-generated export earnings, are much better than external funding. These findings suggest that if the country wishes to sustain economic growth, greater efforts will have to be directed towards improving manufacturing sector performance, increasing labour force productivity and mobilising domestic savings, rather than relying heavily on foreign capital. The study also indicates that if foreign capital is required, more foreign direct investment should be encouraged instead of long-term borrowings.

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## GLOSSARY

| | |
|---|---|
| 2SLS | two stage least squares |
| AID | grants and concessional loans |
| APS | average propensity to save |
| BNM | Bank Negara Malaysia |
| CX | exports |
| DC | developed country |
| DEBT | external borrowings |
| FCI | foreign capital inflows |
| FDI | foreign direct investment |
| GDP | gross domestic product |
| GNP | gross national product |
| GNS | gross national saving |
| IMF | International Monetary Fund |
| LDC | less developed country |
| M3 | broad money |
| MITI | Ministry of International Trade and Industry |
| MPS | marginal propensity to save |
| NEP | New Economic Policy |
| OLS | ordinary least square |
| OPEC | Organisation of Petroleum Exporting Countries |
| TT | terms of trade |

**Notations Used**

1. A small triangle on the left of a variable indicates a first differentiate operation. For example, $\Delta GDP = GDP - GDP(t-1)$, and $\Delta L/L$ is the labour force growth rate.
2. (t-1) attached to a variable indicates a lagged value (by one period).
3. When reporting regression results, the t statistic(s) is always given in brackets, underneath the relevant explanatory variable(s).
4. The notation $\partial Y/\partial X$, where Y is any dependent variable and X is any independent variable indicates a partial derivative. It shows the effects of a change in Y brought about by a change in X with other explanatory variables remaining unchanged.

# 1. INTRODUCTION

In development economics, growth is thought to be a function of investment and other factors. The conventional belief is that foreign capital inflows (FCI) bring new investible funds and foreign exchange with which the recipient country can achieve higher rates of investment and therefore growth. The role of foreign capital in economic development is an issue that has provoked continuous debate. Foreign capital augments the total resource availability in a country, but its impact on investment and economic development is controversial. If judiciously used, it could have favourable effects on economic growth through higher investment and other positive effects. But it is also possible that FCI might not yield any net benefit to the host country.

Since independence in 1957, Malaysia has adopted liberal policies towards foreign capital inflows. Malaysia has been rated favourably in terms of overall competitiveness as well as attracting foreign capital, and has sustained high economic growth rates over long periods with price stability. Its policies have attracted foreign investment inflows and generally provided an environment conducive to private business activities. Although domestic capital formation has mainly been financed by domestic savings, FCI has also played an important role, mainly in the form of 'aid' (grants and loans) as well as foreign direct investment (FDI) before the nineties when short-term inflows (e.g. for portfolio investments) have become much more important.

Malaysia received much aid in the 1950s and 1960s, and at the same time, encouraged FDI. In the 1970s, it participated actively in Eurocurrency markets while continuing to receive 'aid' on increasingly 'harder' terms. In the early 1980s, the prolonged world recession saw a resulting accumulation of external debt with an increased current account deficit. Since the mid-1980s, the Malaysian government has put greater emphasis on private sector investment, by both domestic and foreign investors. In 1996, total net foreign capital inflows — as recorded in the long-term capital account of the balance of payments — amounted to RM13.5 billion, compared to only RM2.2 billion in 1980. Of this total, only RM0.75 billion represented net inflows of official capital (aid) while RM12.8 billion consisted of private long-term capital.

## Study Objectives and Methodology

This study attempts to empirically assess the role of FCI in Malaysian economic development between 1966 and 1996 by evaluating its impact on output growth. The evaluation will take into account both the 'direct' and 'indirect' positive effects emphasised by orthodox theory and the critical literature on FCI. The inflows will be treated in aggregate and also disaggregated into two components, i.e. debt and FDI, so that their impact in aggregate as well as their different individual effects can be estimated.

The methodology used in the study is regression analysis using the ordinary least squares (OLS) method. FCI's direct effects on growth and their indirect effects on the savings rate are tested by inserting FCI as an additional explanatory variable in the growth and savings equations. The size, sign and significance of the FCI variable should indicate the strength and direction of its effects on the two variables. The data used in the study were mainly obtained from secondary sources, including Bank Negara Malaysia (BNM) *Annual Reports*, Ministry of Finance or Treasury *Economic Reports*, Ministry of International Trade and Industry (MITI) *Reports*, Malaysia five-year plan documents and other sources.

**Organisation**

The next section reviews the orthodox analysis' claim of a positive FCI contribution to growth and examines FCI's directs contributions to Malaysian growth using a production function type equation. More detailed analysis is carried out in the following section by dividing FCI into two components, i.e. debt and FDI, to assess their effects on the Malaysian economic growth rate.

The penultimate section examines other influences of FCI by evaluating their effects on the savings rate and the balance of payments. The discussion covers both FCI as an aggregate variable as well as the disaggregated debt and FDI variables. Finally, the conclusion highlights the key findings and implications of the study.

## 2. FOREIGN CAPITAL AND GROWTH

### Positive Effects of Foreign Capital on Growth

Foreign capital has been important for Malaysian economic development, not only for GDP growth, but also for the structural changes that has transformed Malaysia from a primary producer to a rapidly industrialising economy. Malaysia has, since independence in 1957, practised liberal policies towards foreign capital inflows. It is generally accepted that growth is a function of investment and other factors. FCI, by bringing in new investible funds and foreign exchange, can help a less developed country to achieve higher investment rates and accelerate growth.

As American founding father Alexander Hamilton once said: "Foreign capital instead of being viewed as a rival ought to be considered as a most valuable auxiliary, conducing to put in motion a greater quantity of productive labour and a greater portion of useful enterprise than could exist without it" (Rolfe and Damm 1970: 121).

The orthodox position — for example, Rosentein-Rodan (1961) and Chenery and Strout (1966) — sees FCI as a supplement to local capital resources. According to it, all capital inflows constitute net additions to an LDC's productive resources, thus increasing its growth rate. The effect of FCI on growth is seen through the well-known Harrod-Domar model which is:

$$g = sn$$

where $g$ = output growth rate, i.e. $\Delta Y/Y$,
$s$ = saving rate, i.e. $S/Y$, which is equal to the investment rate, $I/Y$, in a closed economy at equilibrium,
$n$ = capital output ratio, i.e. the multiplier, which relates the investment rate to growth.

Given an investment rate, which is equal to the savings rate, and a capital-output ratio, the resultant growth rate can be determined. If the savings rate is insufficient to meet the desired investment and growth rates, the domestic savings-investment gap can be bridged with foreign capital inflows.

This orthodox view of the contribution of FCI to growth can be expressed as follows:

$$g = n (s + FCI/Y)$$

where $s$ = $S/Y$ is the domestic savings rate,
$FCI/Y$ = foreign capital inflows as a proportion of output.

In the above formula, FCI augments domestic savings and increases the investment rate, which accelerates economic growth.

FCI can also help LDCs to eventually achieve self-sustained growth. Higher investment — and growth — rates, achieved with foreign capital supplements, would increase the domestic savings rate. Eventually, a higher domestic savings rate could be the only source of funds for investment activities without needing any further inflows of foreign capital. Thus, Mc Kinnon (1964) wrote: "Aid or private investment is likely to be offered on the assumption that a higher growth rate in the receiving country will eventually become self-sustaining, i.e.,

domestic savings and export capabilities will rise to the point where foreign capital transfers become unnecessary for this growth rate to be maintained."

Most LDCs do not have adequate capital goods to meet the desired investment level. In addition, there are limited substitution possibilities between imported and domestic inputs. Required inputs have to be imported with foreign exchange. Based on the "two-gap" model developed by Hollis Chenery and his associates, FCI makes up for any foreign exchange shortages by bringing in foreign exchange to pay for the necessary imports of capital and intermediate goods. Also FCI, particularly foreign direct investment (FDI), may be accompanied by technical assistance and expertise, scarce managerial skills, marketing know-how, international market connections and the creation of new export opportunities.

This orthodox position has been challenged by radical economists like Griffin and Enos (1970) and Weisskoff (1972), among others, who take the view that FCI is a substitute and not a complement to domestic capital resources. They argue that FCI has exercised a depressing effect on savings propensities in developing countries, thus reducing domestic saving rates and rates of capital formation, and consequently, growth rates.

**Earlier Evidence**

Most of the empirical testing of the contribution of FCI to growth has been carried out using a production function type growth equation. Using a Cobb-Douglas type production function, total output is a function of resources used — namely labour, capital and technology — and expressed as follows:

$$Y = T K^{\alpha} L^{\beta}$$

where: Y is the real output at time t,
T is an index of technology,
K is an index of capital stock,
L is an index of the labour input,
$\alpha$ is the partial elasticity of output with respect to capital,
$\beta$ is the partial elasticity of output with respect to labour.

The output growth rate can therefore be seen as a function of the investment rate, the labour force growth rate and technology, which can be written as follows:

$$\text{Growth} = a + b\, I/Y + c\, \Delta L/L$$

where: I/Y = the investment rate proxied by increments in capital stock,
$\Delta$L/L = is the labour force growth rate,
a = is the rate of "technological change",
b = is the partial elasticity of output with respect to increments in capital stock,
c = is the partial elasticity of output with respect to increases in labour input.

The I/Y in the equation is determined by the domestic savings rate (S/Y) and FCI (FCI/Y), expressed as: I/Y = S/Y + FCI/Y.

Thus, the effects of FCI on growth can be tested by substituting S/Y and FCI/Y for I/Y in the production function derived equation:

$$\text{Growth} = a + b_1 S/Y + b_2 FCI/Y + c \Delta L/L$$

Studies by Cohen (1968), Papanek (1973), and Stoneman (1976) — all using cross sectional data from the 1950s and the early 1960s — show that growth in developing countries is positively and significantly related to both domestic savings and foreign capital inflows. Ghazali Atan (1990) found evidence of a positive contribution of FCI to growth in his study of the direct contributions of FCI to the Malaysian economy for the period 1960 to 1986. Findings from various studies are summarised in Table 2.1.

**Evaluation of FCI Contribution to Malaysian Economic Growth, 1966-96**

Methodology and Hypotheses to be Tested

This study, using a semi-log specification of a conventional growth equation, relates output growth to the investment rate, labour force growth rate and manufacturing growth rate as a proxy for structural change in the Malaysian economy between 1966 and 1996. The regression model here regresses the dependent variable (the output growth rate), against the explanatory or independent variables, namely technological change, investment rate, labour force growth rate and structural change rate. All explanatory variables are expected to carry positive signs and to be significant, which would then suggest that the output growth rate is dependent on the investment rate, labour force growth rate, manufacturing growth rate and technological change.

The semi-log specification is as follows:

$$\ln y = a + b\, I/Y + c \Delta L/L + d\, SC$$

where: $\ln y$ = real GDP growth,
$I/Y$ = the investment rate, i.e. gross capital formation as a proportion of GDP,
$\Delta L/L$ = growth rate of the actual numbers employed as proxies for the labour force growth rate,
SC = manufacturing value added as a proportion of GDP proxies for structural change,
$a$ = rate of "technological change",
$b$ = partial elasticity of output with respect to capital stock increments,
$c$ = partial elasticity of output with respect to the labour force growth rate,
$d$ = partial elasticity of output with respect to the manufacturing value added growth rate.

To test the contribution of foreign capital to the Malaysian economic growth rate, the investment rate variable, I/Y, was substituted by its constituents, S/Y and FCI/Y. Thus, the growth equation is as follows:

$$\ln y = a + b_1 S/Y + b_2 FCI/Y + c \Delta L/L + d\, SC$$

where: $b_1$ = partial elasticity of output with respect to domestic savings rate,
$b_2$ = partial elasticity of output with respect to foreign capital inflows.

Again, $b_1$ and $b_2$ are expected to carry positive signs and should be statistically significant.

Notes on Data

The statistical analysis in this study used data from 1966 to 1996. The real GDP series was created using real rates of growth. Data on the investment rate, structural change (proxied by the manufacturing value added growth rate), domestic savings rate and FCI growth were scaled against GDP to avoid the heteroscedasticity problem. However, the investment rate and FCI growth rate were lagged by one year on the assumption that investment and FCI changes would not affect growth immediately. Instead, it is assumed that an investment, whether financed by domestic funds or foreign capital, will only contribute to growth in the following year. Thus, the investment growth rate is I/Y = I/Y - I/Y (t-1) and FCI/Y = FCI/Y - FCI/Y (t-1). Finally, the size of the labour force employed series was created by using the labour force growth rate.

Results

Using the ordinary least squares (OLS) method, the specification produced the following result:

$$\ln y = 1.16 + 0.023\ I/Y + 0.021\ \Delta L/L + 0.056\ SC$$
$$(8.72) \quad (4.07) \quad (0.70) \quad (9.11)$$

$R^2 = 95.6\%$ D.W = 1.2215

This regression result suggests that each one per cent increase in the investment rate contributed to a 0.023 per cent increase in the growth rate, while each one per cent increase in the size of the labour force contributed to a 0.021 per cent increase in the growth rate and each one per cent increase in the manufacturing sector growth rate contributed to a 0.056 per cent increase in the overall growth rate.

All the explanatory variables carried the expected positive signs. At the one per cent level, the t value for b and d were significant, though the c rate was only significant at the 50 per cent level. The results thus support the hypotheses that the investment rate, labour force growth rate and manufacturing growth rate all contributed positively to Malaysian economic growth in the period covered. Interestingly, however, the manufacturing growth rate contributed much more to economic growth compared to the investment rate and the labour force growth rate. The specification was very satisfactory with $R^2 = 0.956$, i.e. explaining about 95.6% of the variation in the data, suggesting the data fit the model well.

To test the contribution of foreign capital to Malaysian economic growth, the investment rate variable in the equation I/Y was substituted by its constituents, S/Y and FCI/Y. The result obtained was as follows:

$$\ln y = 0.98 + 0.024\ S/Y + 0.019\ FCI/Y + 0.010\ \Delta\ L/L + 0.056\ SC$$
$$(6.65) \quad (3.76) \quad (2.57) \quad (0.36) \quad (9.12)$$

$R^2 = 0.962$ D.W = 1.8387

This result suggests that each one per cent increase in the domestic savings rate contributed to a 0.024 per cent increase in the growth rate, while each one per cent increase in foreign capital inflows contributed to a 0.019 per cent increase in the growth rate. Relatively, the domestic savings rate contributed more significantly than foreign capital to Malaysian economic growth.

## Conclusion

The single equation approach appears to confirm that the Malaysian economic growth rate is a function of capital, labour and structural change. Any increase of these variables should raise the growth rate. The regression analysis also supports the “orthodox position” that FCI complements, rather than substitutes for domestic capital to finance investment and thus increase national income. However, the contribution of the domestic savings rate was found to be greater than that of FCI, both in terms of the size of the coefficient as well as statistical significance. The analysis results suggest that domestically financed investment is more productive than foreign capital.

Table 2.1 Previous Findings Showing Positive Effects of FCI on the Economic Growth Rate (t statistics given in brackets)

---

1. Cohen (1968):

   a) 27 LDCs, cross- section (1955-60):

   Growth = 0.194 + 0.621 $\Delta$X/Y + 0.130 F/Y
   (9.27) (4.69) (5.37)

   $R^2$ = 0.627

   b) 41 LDCs, cross-section (1960-65):

   Growth = 0.243 + 0.215 $\Delta$X/Y + 0.101 F/Y
   (8.77) (2.15) (3.47)

   $R^2$ = 0.250

2. Ghazali Atan (1960-86):

   a) ln Y = 4.12 + 0.0399 I/Y + 0.022 $\Delta$L/L + 0.0713RT
   (3.63) (5.00) (1.95) (4.19)

   $R^2$ = 88.2%

   b) ln Y = 3.48 + 0.04 S/Y + 0.0212 FCI/Y + 0.033 $\Delta$L/L + 0.0765 RT
   (3.52) (5.28) (2.05) (3.31) (5.07)

   $R^2$ = 89.5%

3. Stoneman (1976), cross-section, 1960s:

   Growth = 1.088 + 0.252 S/Y + 0.318 AID/Y + 0.076 Pte FCI/Y - 0.029 FCI stock/Y
   (2.29) (9.27) (8.57) (1.37) (-3.41)

   $R^2$ = 0.369

---

*Notes on variables*:

Growth = annual rate of increase in GDP, i.e. $\Delta$Y/Y,
S/Y = domestic savings rate as a proportion of GDP,
F = foreign capital inflows of all kinds,
Aid = net transfers received by governments plus official long-term borrowing,
X/Y = exports as a proportion of GDP, i.e. the 'export rate',
$\Delta$ L/L = labour force growth rate,
I/Y = investment rate as a proportion of GDP,
RT = resource transfer proxy namely the value of the non-agricultural sector as a proportion of total GDP,
FCI/Y = foreign capital inflows as a proportion of GDP.

Table 2.2 Regression Results: Effect of Investment Components on the Malaysian Economic Growth Rate, 1966-96 (explained variable: ln y)

| Regr. | c | I/Y | S/Y | FCI/Y | SC | Δ L/L | $R^2$ | D.W. |
|---|---|---|---|---|---|---|---|---|
| 1) | 1.16 | 0.023 | | | 0.056 | 0.021 | 95.6% | 1.2215 |
| t value = | (8.72) | (4.07) | | | (9.11) | (0.70) | | |
| 2) | 0.98 | | 0.024 | 0.019 | 0.056 | 0.010 | 96.2% | 1.8387 |
| t value = | (6.65) | | (3.76) | (2.57) | (0.36) | (9.12) | | |

*Notes on variables*:

ln y = log real GDP growth,
I/Y = investment rate as a proportion of GDP,
S/Y = domestic savings rate as a proportion of GDP,
FCI = foreign capital inflows as a proportion of GDP,
SC = manufacturing sector growth rate,
Δ L/L = labour force growth rate.

Table 2.3 Malaysia: Gross Domestic Product (GDP) at Market Prices, Real GDP and Real GDP Growth Rate, 1966-96

| Year | GDP (RM billion) | Real GDP (RM billion) | Real GDP Growth Rate (per cent) |
|---|---|---|---|
| 1966 | 7.9 | 7.3 | 6.4 |
| 1967 | 9.8 | 7.5 | 5.8 |
| 1968 | 10.2 | 8.1 | 8.4 |
| 1969 | 11.3 | 8.8 | 9.0 |
| 1970 | 12.5 | 9.3 | 6.3 |
| 1971 | 13.0 | 10.0 | 6.2 |
| 1972 | 14.2 | 10.7 | 6.8 |
| 1973 | 18.6 | 11.9 | 6.5 |
| 1974 | 22.9 | 12.8 | 8.3 |
| 1975 | 22.3 | 13.2 | 0.8 |
| 1976 | 28.1 | 14.3 | 11.6 |
| 1977 | 32.3 | 15.3 | 7.6 |
| 1978 | 36.3 | 16.4 | 7.5 |
| 1979 | 44.3 | 17.8 | 8.5 |
| 1980 | 51.4 | 19.2 | 8.0 |
| 1981 | 55.8 | 20.4 | 6.9 |
| 1982 | 62.6 | 21.6 | 5.6 |
| 1983 | 69.9 | 22.9 | 6.3 |
| 1984 | 80.0 | 24.7 | 7.6 |
| 1985 | 77.5 | 24.4 | -1.1 |
| 1986 | 71.7 | 24.7 | 1.2 |
| 1987 | 79.7 | 26.0 | 5.4 |
| 1988 | 90.8 | 28.3 | 8.9 |
| 1989 | 102.6 | 30.9 | 9.2 |
| 1990 | 115.8 | 34.0 | 9.8 |
| 1991 | 132.4 | 36.9 | 8.6 |
| 1992 | 148.5 | 39.8 | 7.8 |
| 1993 | 165.2 | 43.1 | 8.3 |
| 1994 | 190.1 | 47.0 | 9.2 |
| 1995 | 218.7 | 51.5 | 9.5 |
| 1996 | 249.9 | 55.9 | 8.6 |

Source: Ministry of Finance, *Economic Report*, various issues.

Table 2.4 Malaysia: Gross Investment and Gross Domestic Savings as Proportion of GDP, 1966-96

| Year | Gross Investment | Gross Domestic Savings |
|---|---|---|
| 1966 | 15.5 | 17.9 |
| 1967 | 16.4 | 19.1 |
| 1968 | 16.3 | 20.2 |
| 1969 | 13.9 | 24.5 |
| 1970 | 19.7 | 24.2 |
| 1971 | 20.7 | 22.2 |
| 1972 | 21.5 | 20.2 |
| 1973 | 22.5 | 28.2 |
| 1974 | 28.5 | 28.7 |
| 1975 | 23.3 | 23.8 |
| 1976 | 21.8 | 32.3 |
| 1977 | 23.5 | 31.4 |
| 1978 | 25.4 | 30.4 |
| 1979 | 24.2 | 34.3 |
| 1980 | 28.6 | 31.6 |
| 1981 | 32.9 | 25.3 |
| 1982 | 37.2 | 28.6 |
| 1983 | 35.9 | 31.2 |
| 1984 | 33.4 | 35.9 |
| 1985 | 27.6 | 32.6 |
| 1986 | 25.9 | 32.2 |
| 1987 | 23.2 | 37.4 |
| 1988 | 26.0 | 36.2 |
| 1989 | 29.3 | 34.6 |
| 1990 | 31.3 | 38.7 |
| 1991 | 37.2 | 44.4 |
| 1992 | 35.1 | 36.4 |
| 1993 | 37.8 | 37.7 |
| 1994 | 40.4 | 38.8 |
| 1995 | 43.5 | 39.5 |
| 1996 | 41.6 | 42.6 |

Notes: 1. Gross investment = gross fixed capital formation + changes in stocks.
2. Gross domestic savings = gross domestic product – consumption at market prices.

Source: Ministry of Finance, *Economic Report*, various issues.

Table 2.5 Malaysia: Manufacturing Value Added to Total GDP and Labour Force Growth Rate, 1966-96

| Year | Manufacturing Value Added | Labour Force Growth Rate |
|---|---|---|
| 1966 | 11.0 | 2.7 |
| 1967 | 11.0 | 2.7 |
| 1968 | 11.0 | 2.7 |
| 1969 | 10.0 | 2.7 |
| 1970 | 13.1 | 2.7 |
| 1971 | 6.4 | 3.0 |
| 1972 | 15.0 | 3.0 |
| 1973 | 15.0 | 5.0 |
| 1974 | 16.0 | 3.0 |
| 1975 | 14.4 | 3.9 |
| 1976 | 15.1 | 3.5 |
| 1977 | 15.8 | 3.4 |
| 1978 | 19.1 | 6.3 |
| 1979 | 19.7 | 3.5 |
| 1980 | 20.3 | 3.6 |
| 1981 | 23.3 | 3.9 |
| 1982 | 20.2 | 2.4 |
| 1983 | 19.5 | 3.4 |
| 1984 | 18.4 | 2.7 |
| 1985 | 19.7 | 1.4 |
| 1986 | 20.9 | 1.5 |
| 1987 | 22.5 | 2.5 |
| 1988 | 24.4 | 3.5 |
| 1989 | 25.5 | 3.4 |
| 1990 | 26.9 | 4.3 |
| 1991 | 28.2 | 3.5 |
| 1992 | 28.8 | 2.9 |
| 1993 | 30.1 | 4.2 |
| 1994 | 31.6 | 3.0 |
| 1995 | 33.1 | 3.9 |
| 1996 | 34.5 | 3.1 |

Source: Ministry of Finance, *Economic Report*, various issues.

Appendix 2.1 Regression Results: Effect of Investment on the Malaysian Economic Growth Rate, 1966-96

LS // Dependent Variable is Y22
Date: 07/26/98 Time: 23:02
Sample: 1967 1996
Included observations: 30
Excluded observations: 0 after adjusting endpoints

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 1.161029 | 0.133114 | 8.722095 | 0.0000 |
| X12 | 0.022929 | 0.005626 | 4.075817 | 0.0004 |
| X23 | 0.021142 | 0.029933 | 0.706295 | 0.4863 |
| X3 | 0.056521 | 0.006205 | 9.108680 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.955759 | Mean dependent var | 3.002220 |
| Adjusted R-squared | 0.950654 | S.D. dependent var | 0.579024 |
| S.E. of regression | 0.128623 | Akaike info criterion | -3.978166 |
| Sum squared resid | 0.430144 | Schwartz criterion | -3.791339 |
| Log likelihood | 21.10433 | F-statistic | 187.2307 |
| Durbin-Watson stat | 1.221560 | Prob (F-statistic) | 0.000000 |

Appendix 2.2 Regression Results: Effect of FCI on the Malaysian Economic Growth Rate, 1966-96

LS // Dependent Variable is Y22
Date: 07/26/98 Time: 23:04
Sample: 1967 1996
Included observations: 30
Excluded observations: 0 after adjusting endpoints

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.975920 | 0.146800 | 6.647969 | 0.0000 |
| X23 | 0.010492 | 0.029174 | 0.359620 | 0.7222 |
| X3 | 0.055615 | 0.006099 | 9.119343 | 0.0000 |
| X4 | 0.024272 | 0.006461 | 3.756617 | 0.0009 |
| X55 | 0.019023 | 0.007427 | 2.561197 | 0.0168 |

| | | | |
|---|---|---|---|
| R-squared | 0.962357 | Mean dependent var | 3.002220 |
| Adjusted R-squared | 0.956334 | S.D. dependent var | 0.579024 |
| S.E. of regression | 0.120995 | Akaike info criterion | -4.072996 |
| Sum squared resid | 0.365996 | Schwartz criterion | -3.839463 |
| Log likelihood | 23.52679 | F-statistic | 159.7828 |
| Durbin-Watson stat | 1.838747 | Prob (F-statistic) | 0.000000 |

## 3. DISAGGREGATED EFFECTS OF FOREIGN CAPITAL ON GROWTH

### Composition of Foreign Capital Flows into Malaysia

The conventional belief is that foreign capital brings positive effects to a host country in the form of new investible funds, augmenting domestic savings and foreign exchange earnings. Also, with foreign capital present, domestic investors have wider access to international markets, skills, expertise and technology. Since independence, Malaysia has adopted a relatively liberal foreign exchange control regime and many other related incentives to induce inflows of foreign capital, despite its own relative high rates of domestic savings and export earnings. Foreign capital is an important source of financing for economic growth, whether in the form of aid, foreign direct investment, official and private borrowings and portfolio flows.

Malaysia was an aid recipient in the 1950s and 1960s and, at the same time, encouraged foreign direct investment (FDI) in line with conventional faith in the benefits of such inflows. In the 1970s, external debt financing was a major source of Malaysian development finance. With considerable surplus funds deposited with commercial banks in the major international centres by the OPEC economies, real rates of interest on foreign loans were very low or even negative. Many developing countries used this opportunity to increase their external debt financing. Unlike most other developing countries which borrowed heavily from the mid-seventies, Malaysia's external borrowings increased dramatically in response to international recessionary pressures as the US Federal Reserve raised interest rates, tightening international liquidity (Jomo 1990).

The global recession in the mid-1980s was exacerbated by Malaysia's recent external public debt problem. Domestic funds had been considered insufficient due to reduced export earnings caused by falling commodity prices, together with greater demand for development funds to counter recessionary tendencies. To meet these funding requirements, the government had resorted to increase external borrowings from the early 1980s. Table 3.1 and Graph 3.1 show Malaysia's external debt increasing from RM15.4 billion in 1981 to RM53 billion in 1986. The external debt to GNP ratio increased from 14.3 per cent in 1981 to 55.6 per cent in 1985 and peaked at 75.6 per cent in 1986.

Since 1986, the government's financing policy has changed, with greater reliance on FDI to replace debt financing. FDI has been attracted by relaxing some earlier restrictions, accompanied by severe controls on operating expenditure and a slow-down in public sector development spending. However, the pattern and magnitude of these capital flows has changed again in the nineties, with an unprecedented surge of capital inflows that have been more short-term and speculative in nature. Such inflows became a matter of concern when they were reversed in early 1994 and especially from mid-1997 with disastrous consequences (Jomo 1998).

Nature and Magnitude of Foreign Capital Flows

During the 1960s, the government remained fiscally conservative and generally maintained balanced budgets, if not budgetary surpluses. In the 1980s, prior to 1987, the capital account was dominated by the inflows of official long-term capital. Malaysia experienced net long-term capital inflows for most of the period since the 1980s until 1997, with the exception of 1987 and 1988, when outflows were experienced, primarily to prepay official external debt (see Table 3.2).

Due to higher expenditures required to finance development projects in pursuit of NEP goals, budgetary deficits, mainly financed by EPF forced savings, grew in the 1970s (Table 3.3). Thus, the NEP and weak external demand caused by global recession forced the government to resort to external borrowing. The high gearing of the government's development expenditure and its confident attitude with regard to its ability to service external debt resulted in a very rapid build-up of both its foreign debt, after the earlier expansion of domestic debt. By 1987, domestic debt represented 72 per cent of Malaysia's GDP, while foreign debt accounted for 59 per cent (see Table 3.4), (Ghazali Atan 1990).

Following voluntary structural adjustment policies undertaken by the government from around 1986, private investment flows became increasingly important as official flows moderated, reflecting government efforts to systematically reduce its external borrowings. In 1987 and 1988, net outflows of RM1.4 billion and RM3.2 billion were recorded as the government prepaid foreign debt.

Government efforts to provide a stable medium and long-term macroeconomic environment has enabled Malaysia to attract long-term capital inflows, which has financed the current account deficit (Graph 3.2). Foreign direct investment inflows have contributed significantly to surpluses in the long-term capital account since 1989, the bulk of which was concentrated in the petroleum and manufacturing sectors. Total foreign direct investment increased significantly from RM4.5 billion in 1989 to a peak of RM13.2 billion in 1992, and declined slightly to RM12.8 billion in 1996.

By type of flow, equity flows have become more important, primarily due to relaxation of foreign ownership requirements in the manufacturing sector. With respect to external borrowings, active debt management by the government in the 1990s has contained the growth of external debt and debt servicing, avoiding the bunching of payments while also reducing Malaysia's exposure to interest and exchange rate fluctuations. The external debt to GNP ratio fell to 31.7 per cent by the end of 1996 from a peak of 75.6 per cent in 1986. As the bulk of external loans were also channelled to productive sectors of the economy, the debt service ratio has remained low at 5.9 per cent in 1996 (see Graph 3.3) (BNM 1997: 45).

While long-term private capital inflows increased after the mid-1980s, short-term flows have also increased in importance in the 1990s. In 1993, short-term inflows exceeded private long-term capital inflows for the first time, i.e. RM13.9 billion compared to RM12.9 billion. Large positive short-term capital flows were also reflected in the "errors and omissions" item of RM7.2 billion in 1993. This partly reflected inflows not fully captured by the short-term capital account. Hence, the size of short-term flows has been underestimated and is not fully captured in the capital account. However, with the strong interest in Malaysia by foreign investors plus the continuous efforts by the government to induce more FDI, the net inflow of private long-term capital exceeded short-term capital inflows again from 1994. In 1996, net private long-term capital inflows amounted to RM12.8 billion compared to RM10.3 billion in net short-term capital inflows.

**Growth through External Debt and Foreign Direct Investment**

Malaysia's external debt includes all loans, whether from official or private sources. These debts are categorised as market loans, project loans and supplier credits from the International Monetary Fund (IMF), government-guaranteed debt and private sector loans. In terms of nominal value, there has been a tremendous increase in the country's external debt since the eighties. Total foreign debt rose from RM15.4 billion in 1981 to RM53.0 billion in 1986 and

RM72.3 billion in 1996. The country's overall external debt-GNP ratio jumped from 14.3 per cent in 1981 to 75.6 per cent in 1986, before declining to 31.7 per cent in 1996 (see Table 3.1 and Graph 3.1). The corresponding trend in Malaysia's external debt is shown in Appendix 3.1.[1]

The rapid growth of Malaysia's public debt since the 1970s was prompted by new economic development aspirations, particularly attempts to reduce poverty and expedite Bumiputera participation in commerce and industry through direct government involvement. A viable strategy for growth and interethnic redistribution has been at the heart of every five year economic plan since the *Second Malaysia Plan, 1971-1975* (2MP) first explicitly incorporated the New Economic Policy (NEP) in 1971. The seventies also saw the switch from import-substituting to export-oriented industrialisation. With more direct government participation, the funding requirements for additional public expenditure increased. The government could not generate enough revenue to finance its new development programs, and had to resort to borrowings to cover the deficit.

The need for external funds grew in the early 1980s as Malaysia's balance of payments accounts consistently recorded current account deficits, though its merchandise account remained in surplus except in 1981 and 1982 — as shown in Graph 3.3. Total external debt increased by an average annual rate of about 46.9 per cent in the first three years of the 1980s (see Table 3.1). The high external debt position imposed a heavy burden on the country as a high proportion of the operating budget had to be allocated to servicing the debt. The cost of debt servicing as a share of total operating expenditure rose from 17.8 per cent in 1980 to peak at 50.5 per cent in 1985. However, with more prudent external debt management strategies adopted from 1986, these costs declined to an average of about 19.5 per cent during the period 1992-96 (see Table 3.5).

With the recession of the mid-1980s, Malaysia sought to reverse the unsustainable debt level. Since then, Malaysia has adopted a more conservative approach to foreign debt management and kept its external debt at relatively low levels. Since 1986, encouragement of FDI has been seen as the best alternative to limit the growth of Malaysia's external debt while securing additional financing for industrial growth. This is because FDI not only provides interest-free capital, but also managerial skills, technology, marketing know-how, expertise and other benefits.

According to the International Monetary Fund's definition, FDI is the flow of investments from abroad which include new equity capital, reinvested earnings and also both short-term and long-term borrowings from parent companies or their affiliates. This definition, however, excludes other long-term or short-term borrowings that may have been part of the original investment package or which may subsequently have been undertaken by the affiliate. The essential characteristic of FDI is that they are foreign investments made to acquire a lasting interest and some managerial influence in enterprise. As such, FDI tends to contribute more to growth in developing countries since it often involves more long-term and productive investments which are more likely to create more beneficial impacts such as technology acquisition, market linkages and managerial skills, the diffusion of which can have substantial effects on productivity growth.

However, it is also important to distinguish different types of FDI. While 'greenfield' FDI may bring the full range of such benefits, this would be less true of the reinvestment of profits as well as mergers and acquisitions. While profit reinvestments do not add any resources

from abroad, FDI mergers and acquisitions involve foreign capital taking over, rather than adding to existing economic assets such as productive capacities.

FDI in Malaysia has undergone major changes over the years. In the early 1960s, FDI was particularly pervasive in plantation agriculture, dredge mining and international trade. In the last three decades, however, FDI has been most prominent in the manufacturing sector, amounting to RM1,880.6 million in 1971-79, increasing to RM22,326.5 million in 1980-89 and recording RM9.4 billion in 1996 alone. Most recent FDI has been concentrated in export-oriented industries, mainly in electronic/electric products, textiles and related products, chemicals and related products, and wood and related products.

According to investment proposals approved by the Ministry of International Trade and Industry (MITI), FDI surged to RM78.7 billion during the period 1991-96, compared with RM35.9 billion during the period 1985-90. Malaysia accounted for 28.8 per cent of total FDI flows to the ASEAN countries during the period 1991-96 and 6.7 per cent of total flows to developing countries in the same period (BNM 1997: 119).

Foreign ownership of corporate equity at par value increased by an average of 12.6 per cent per annum during the Sixth Malaysia Plan period (1991-95), reaching RM49.8 billion, or 27.7 per cent of total equity in 1995, compared to RM27.5 billion or 25.4 per cent in 1990. This was consistent with the relaxation of regulations pertaining to corporate ownership introduced from the mid-1980s to attract FDI and accompanying expertise and technology, to upgrade the skills and quality of the Malaysian labour force as well as to accelerate growth, particularly of the manufacturing sector (*7MP*, 1996: 86).

**Contributions of External Debt and FDI to Malaysian Economic Growth**

For a long time, Malaysia resorted to inflows of long-term foreign capital in the form of external debt and FDI to finance growth. The importance of each of these sources of financing has, however, varied over time, as reflected by prevailing policies. To look at the effects of foreign capital on the Malaysian economic growth rate, the following statistical analysis disaggregates foreign capital (FCI/Y) into these two components, DEBT/Y and FDI/Y. These two components then substitute for FCI in the growth equation specified in Chapter Two. The sign, size and significance of the FCI components obtained from this analysis should indicate the strength and direction of their respective effects on the Malaysian economic growth rate. The objective of this analysis is to make an empirical assessment of the effects of external borrowings and FDI on economic growth and of the relative importance of domestic and external funds to the Malaysian economy in the period between 1966 and 1996. Using the ordinary least square (OLS) method, the semi-log specification of the growth equation is written below:

$$\ln y = a + b_1 S/Y + b_2 FCI/Y + c \Delta L/L + d SC$$

Disaggregating FCI/Y into its components, DEBT/Y and FDI/Y, the equation becomes:

$$\ln y = a + b_1 S/Y + b_3 DEBT/Y + b_4 FDI/Y + c \Delta L/L + d SC$$

The following regression results were obtained by using data for the years 1966 to 1996:

$$\ln y = 0.91 + 0.03 S/Y + 0.02 DEBT/Y + 0.01 FDI/Y + 0.006 \Delta L/L + 0.05 SC$$

(5.56) (4.53) (1.88) (0.84) (0.2) (7.47)

$R^2$ = 96.3% D.W. = 1.538

This regression result shows that each one per cent increase in the external debt ratio contributed to an approximately 0.02 per cent increase in the growth rate and that each one per cent increase in the FDI rate contributed to an approximately 0.01 per cent increase in the growth rate. Both the disaggregated FCI variables carried the expected positive signs and were significant at the one per cent level, although DEBT/Y was relatively more significant than FDI/Y.

The results also confirmed the greater contribution of domestic savings (S/Y), with a coefficient of about 0.03, suggesting that each one per cent increase in domestic savings contributed to a 0.03 per cent increase in the growth rate. The domestic savings rate relatively contributed more and was more significant than either DEBT/Y or FDI/Y for Malaysian economic growth. The specification was very satisfactory with $R^2$ = 0.963, i.e. explaining about 96% of the variation in the data. These results have been corroborated by Ghazali Atan (1990), who found that debt and FDI contributed positively, with coefficients of 0.0169 and 0.0326 respectively, to Malaysian economic growth from 1961 to 1986. He also confirmed that domestic savings were superior to and more significant than FCI, with higher positive coefficients from the regression analysis for his sample period (see Table 3.7).

## Conclusion

The positive coefficients for both DEBT/Y and FDI/Y suggest that both DEBT and FDI were important sources of financing for Malaysian economic growth during the period 1966-96. External debt was relatively more important as a source of external financing in the first half of the 1980s, while FDI was more important through most of the 1970s, and since the late 1980s. In terms of the size and statistical significance of the coefficients obtained, domestic savings rate were found to be superior to both debt and FDI. This result supports the earlier conclusion that the generation of funds from domestic savings was much better for growth than external financing. However, the result also supports the "orthodox" position that FCI complemented and did not substitute for domestic funds in financing investment. While Malaysia has benefited from FCI, such flows have also had negative implications for the domestic economy. Thus, consideration needs to be given to these matters which offset the positive effects of these flows.

## Note

1 The figures in Table 3.1 are slightly different from those in Appendix 3.1. Table 3.1 gives the BNM estimates, while Appendix 3.1 gives the World's Bank estimates. However, the patterns in both tables show similar trends.

Table 3.1 Malaysia: External Debt, 1979-97

| Year | Debt Outstanding (RM billion) | Debt as share of GNP (%) | Debt Service Ratio (%) |
|---|---|---|---|
| 1979 | 4.5 | 10.6 | 1.9 |
| 1980 | 4.9 | 9.8 | 1.7 |
| 1981 | 15.4 | 14.3 | 2.7 |
| 1982 | 24.3 | 41.5 | 9.2 |
| 1983 | 31.8 | 49.5 | 9.7 |
| 1984 | 37.6 | 51.7 | 11.4 |
| 1985 | 40.2 | 55.6 | 14.0 |
| 1986 | 53.0 | 75.6 | 18.9 |
| 1995 | 68.6 | 34.0 | 6.2 |
| 1996 | 72.3 | 31.7 | 5.1 |
| 1997 | 79.8 | 30.4 | 6.0 |

Source: Bank Negara Malaysia, *Annual Report*, 1979 to 1997.

Table 3.2 Malaysia: Balance of Payments, 1980-1997

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Merchandise Balance | 5.2 | -0.2 | -1.8 | 1.1 | 6.9 | 8.9 | 8.4 | 14.7 | 14.2 | 11.9 | 7.1 | 1.4 | 8.6 | 8.2 | 4.6 | 0.1 | 10.1 | 9.7 |
| 2. Current Account Balance | -0.6 | -5.6 | -8.4 | -8.0 | -3.7 | -1.5 | -0.3 | 6.6 | 4.7 | 0.7 | -2.5 | -11.6 | -5.6 | -7.9 | -14.8 | -21.8 | -12.3 | -13.1 |
| 3. Net Long-term Official Flows[b] | 0.2 | 3.0 | 5.2 | 6.3 | 4.4 | 2.5 | 2.1 | -2.5 | -5.1 | -2.5 | -2.8 | -0.7 | -2.9 | 1.0 | 0.8 | 6.1 | 0.75 | 5.6 |
| 4. Net Private Long-term Capital[c] | 2.0 | 2.9 | 3.3 | 2.9 | 1.9 | 1.7 | 1.3 | 1.1 | 1.9 | 4.5 | 6.3 | 11.0 | 13.2 | 12.9 | 13.0 | 10.8 | 12.8 | 13.2 |
| 5. Private Short-term Capital | 0.9 | neg. | 0.3 | -0.3 | -0.3 | 0.9 | -0.05 | 0.25 | -2.0 | 1.6 | 1.4 | 5.1 | 12.0 | 13.9 | -8.5 | 2.4 | 10.3 | -14 |
| 6. Short-term Flows by Commercial Banks | 1.25 | 0.6 | -0.56 | 0.48 | 2.0 | -0.2 | -1.1 | -2.3 | -2.5 | 1.1 | 2.3 | 3.6 | 9.3 | 10.9 | -17.0 | n.a. | n.a. | n.a. |
| 7. Errors and Omissions | -1.5 | -1.5 | -1.0 | -1.0 | -2.2 | -0.4 | 1.3 | 0.1 | -0.6 | -1.0 | 3.0 | -0.4 | -0.9 | 7.2 | 4.6 | -4.3 | -5.3 | n.a. |
| 8. Overall Balance | 1.0 | -1.1 | -0.6 | neg. | 0.3 | 3.2 | 4.3 | 2.9 | -1.1 | 3.3 | 5.4 | 3.4 | 16.7 | 29.2 | -8.3 | -4.4 | 6.2 | -8.2 |

Notes: neg. = negligible; n.a. = not available.
[a] Estimate by the Ministry of Finance.
[b] Long term official flows = Federal government loans + non financial public enterprises + other assets and liabilities.
[c] Private long term capital = Foreign equity investment + external loans from parent and associated companies + retained earnings.
Source: Ministry of Finance, *Economic Report*, 1980 to 1997.

Table 3.3 Malaysia: Public Sector Financial Indices, 1957-96

| Year | Overall Deficit (RM mil.) | Deficit/GDP (%) |
|---|---|---|
| 1957 | 142 | 2.77 |
| 1958 | 231 | 4.72 |
| 1959 | 76 | 1.38 |
| 1960 | -115 | -1.68 |
| 1961 | 63 | 0.91 |
| 1962 | 276 | 3.82 |
| 1963 | 380 | 4.95 |
| 1964 | 453 | 5.53 |
| 1965 | 592 | 6.54 |
| 1966 | 627 | 6.52 |
| 1967 | 567 | 5.81 |
| 1968 | 508 | 4.98 |
| 1969 | 415 | 3.70 |
| 1970 | 432 | 3.65 |
| 1971 | 1068 | 8.24 |
| 1972 | 1550 | 10.90 |
| 1973 | 1147 | 6.13 |
| 1974 | 1440 | 6.30 |
| 1975 | 2459 | 11.01 |
| 1976 | 1998 | 7.11 |
| 1977 | 3001 | 9.28 |
| 1978 | 3011 | 7.95 |
| 1979 | 3483 | 7.50 |
| 1980 | 8112 | 15.22 |
| 1981 | 11359 | 19.72 |
| 1982 | 11281 | 18.03 |
| 1983 | 11076 | 15.92 |
| 1984 | 9791 | 12.31 |
| 1985 | 5617 | 7.24 |
| 1986 | 9352 | 13.04 |
| 1987 | 12365 | 16.44 |
| 1988 | 1679 | 2.53 |
| 1989 | 1774 | 2.46 |
| 1990 | 5517 | 6.97 |
| 1991 | 572 | 0.66 |
| 1992 | -22 | 0.02 |
| 1993 | 883 | 0.08 |
| 1994 | 3381 | 3.07 |
| 1995 | 7437 | 6.18 |
| 1996 | 9301 | 7.12 |

Sources: Treasury, *Economic Report*, various issues; Edwards (1970).

Table 3.4 Malaysia: Domestic and Foreign Debt Stock, 1957-96

| Year | Domestic Debt Stock | | Foreign Debt Stock | |
|---|---|---|---|---|
| | RM mil. | % of GDP | RM mil. | % of GDP |
| 1957 | 822 | 16.0 | 377 | 7.4 |
| 1958 | 872 | 17.8 | 369 | 7.5 |
| 1959 | 947 | 17.1 | 403 | 7.3 |
| 1960 | 1106 | 16.2 | 438 | 6.4 |
| 1961 | 1231 | 17.9 | 465 | 6.7 |
| 1962 | 1376 | 19.1 | 516 | 7.2 |
| 1963 | 1587 | 20.7 | 601 | 7.8 |
| 1964 | 1779 | 21.7 | 616 | 7.5 |
| 1965 | 2183 | 24.1 | 720 | 8.0 |
| 1966 | 2511 | 26.1 | 765 | 7.9 |
| 1967 | 2997 | 30.7 | 838 | 8.6 |
| 1968 | 3490 | 34.2 | 949 | 9.3 |
| 1969 | 3906 | 34.8 | 1138 | 10.1 |
| 1970 | 4271 | 36.1 | 1154 | 9.8 |
| 1971 | 4999 | 38.6 | 1487 | 11.5 |
| 1972 | 5835 | 41.0 | 1805 | 12.7 |
| 1973 | 6712 | 35.8 | 1704 | 9.1 |
| 1974 | 7544 | 33.0 | 1960 | 8.6 |
| 1975 | 8755 | 39.2 | 2908 | 13.0 |
| 1976 | 10416 | 37.1 | 3605 | 10.9 |
| 1977 | 12302 | 38.0 | 3981 | 12.3 |
| 1978 | 13468 | 35.5 | 4488 | 11.8 |
| 1979 | 15975 | 39.4 | 5197 | 11.2 |
| 1980 | 18286 | 34.3 | 7899 | 14.8 |
| 1981 | 22846 | 39.6 | 11349 | 19.7 |
| 1982 | 28710 | 45.9 | 16873 | 26.9 |
| 1983 | 33953 | 48.9 | 23215 | 33.4 |
| 1984 | 37075 | 46.6 | 30505 | 38.3 |
| 1985 | 40891 | 52.7 | 35097 | 45.3 |
| 1986 | 45864 | 63.9 | 42955 | 59.9 |
| 1987 | 54017 | 71.9 | 44463 | 59.1 |
| 1988 | 63097 | 95.2 | 46973 | 70.1 |
| 1989 | 65763 | 91.2 | 42138 | 58.4 |
| 1990 | 69988 | 88.4 | 41488 | 52.4 |
| 1991 | 73654 | 85.5 | 43787 | 50.8 |
| 1992 | 76083 | 81.9 | 42782 | 46.1 |
| 1993 | 76536 | 76.1 | 51861 | 51.5 |
| 1994 | 78260 | 71.2 | 59147 | 53.8 |
| 1995 | 78038 | 64.9 | 68779 | 57.2 |
| 1996 | 79211 | 60.6 | 71907 | 55.1 |

Source: Ghazali Atan (1990); Treasury, *Economic Report*, various issues.
Table 3.5 Malaysia: Total Servicing of Public Sector Debt as a

Share of Operating Expenditure, 1965-96 (RM million)

| Year | Operating Expenditure (RM mil.) | Total Debt Servicing (RM mil.) | Debt Servicing/ Operating Expenditure (%) |
|---|---|---|---|
| 1965 | 1702 | 171 | 10.0 |
| 1970 | 2429 | 432 | 17.8 |
| 1975 | 5554 | 1048 | 18.9 |
| 1980 | 15063 | 2686 | 17.8 |
| 1981 | 14790 | 2046 | 13.8 |
| 1982 | 16185 | 2795 | 17.3 |
| 1983 | 18374 | 3453 | 18.8 |
| 1984 | 19016 | 4805 | 25.3 |
| 1985 | 24095 | 12157 | 50.5 |
| 1986 | 20075 | 5239 | 26.1 |
| 1987 | 20793 | 5973 | 28.1 |
| 1988 | 21340 | 6098 | 28.6 |
| 1989 | 23034 | 6506 | 27.5 |
| 1990 | 25026 | 6830 | 27.3 |
| 1991 | 28296 | 7048 | 24.9 |
| 1992 | 32075 | 7304 | 22.8 |
| 1993 | 32217 | 7166 | 22.2 |
| 1994 | 35064 | 6815 | 19.4 |
| 1995 | 36573 | 6521 | 17.8 |
| 1996 | 41783 | 6511 | 15.6 |

Source: Ministry of Finance, *Economic Report*, 1965 to 1996.

Table 3.6 Regression Results: Effects of External Borrowings and FDI on the Malaysian Economic Growth Rate, 1966-96 (explained variable: ln y)

| Regression | c | S/Y | DEBT/Y | FDI/Y | SC | ΔL/L | $R^2$ | D.W. |
|---|---|---|---|---|---|---|---|---|
| 3) | 0.91 | 0.03 | 0.02 | 0.01 | 0.05 | 0.006 | 96.3% | 1.538 |
| t value | (5.56) | (4.53) | (1.88) | (0.84) | (7.47) | (0.2) | | |

Explanations of abbreviations:

ln y = log real GDP growth,
S/Y = domestic savings rate as a proportion of GDP,
DEBT/Y = external debt as a proportion of GDP,
FDI/Y = foreign direct investment as a proportion of GDP,
SC = manufacturing sector growth rate as a proportion of GDP,
ΔL/L = labour force growth.

Table 3.7 Malaysia: 2SLS Estimates of the Contribution of Investment Components to Growth, 1961-86 (explained variable: ln Y)

1) $\ln Y = 3.48 + 0.04\ S/Y + 0.0212\ FCI/Y + 0.033\ \Delta L/L + 0.0765\ RT1$
(3.52) (5.28) (2.05) (3.31) (5.07)

$R^2 = 89.5\%$ D.W. = 1.52

2) $\ln Y = 3.23 + 0.0389\ S/Y + 0.0359\ AID/Y + 0.0169\ DEBT/Y + 0.0326\ DFI/Y + 0.032\ \Delta L/L + 0.0799\ RT1$
(2.49) (4.27) (0.44) (0.97) (0.79) (2.98) (4.18)

$R^2 = 88.4\%$ D.W. = 1.51

Explanations of abbreviations:

ln y = log real GDP growth,
S/Y = domestic savings rate scaled against GDP,
RT1 = resource transfer proxy, namely the value of the non-agricultural sector as a proportion of GDP,
ΔL/L = labour force growth rate,
FCI/Y = foreign capital inflows as a proportion of GDP,
AID/Y = aid received as a proportion of GDP,
DEBT/Y = external debt as a proportion of GDP,
DFI/Y = direct foreign investment as a proportion of GDP.
Source: Ghazali Atan, 1990.

Table 3.8 Malaysia: Inflows of Capital as Proportion of Total GDP, 1966-96

| Year | Official Long-term Capital[1] | Private Long-term Capital[2] | Balance on Long-term Capital |
|---|---|---|---|
| 1966 | 0.3 | 2.2 | 2.5 |
| 1967 | 1.4 | 1.3 | 2.7 |
| 1968 | 0.6 | 0.9 | 1.5 |
| 1969 | 1.4 | 1.3 | 2.7 |
| 1970 | 0.002 | 2.3 | 2.4 |
| 1971 | 1.9 | 2.4 | 4.3 |
| 1972 | 2.7 | 2.3 | 5.0 |
| 1973 | 1.0 | 0.3 | 1.3 |
| 1974 | -1.2 | 6.0 | 4.8 |
| 1975 | 4.2 | 3.9 | 8.1 |
| 1976 | 1.4 | 3.5 | 4.9 |
| 1977 | 2.5 | 3.1 | 5.6 |
| 1978 | 1.5 | 3.5 | 5.0 |
| 1979 | 1.6 | 3.3 | 4.9 |
| 1980 | 0.7 | 4.0 | 4.7 |
| 1981 | 5.3 | 5.2 | 10.5 |
| 1982 | 8.8 | 5.2 | 14.0 |
| 1983 | 9.2 | 4.2 | 13.4 |
| 1984 | 6.9 | 2.3 | 9.2 |
| 1985 | 3.0 | 2.2 | 5.2 |
| 1986 | 2.3 | 1.8 | 4.1 |
| 1987 | -3.1 | 1.3 | -1.8 |
| 1988 | -5.6 | 2.1 | 0.9 |
| 1989 | -2.6 | 4.4 | 1.8 |
| 1990 | -2.5 | 5.5 | 3.0 |
| 1991 | -0.5 | 8.3 | 7.8 |
| 1992 | -1.9 | 8.9 | 7.0 |
| 1993 | -0.7 | 7.8 | 7.1 |
| 1994 | 0.3 | 6.0 | 6.3 |
| 1995 | 2.7 | 4.7 | 7.4 |
| 1996 | 0.3 | 5.1 | 5.4 |

Notes: [1] Official long-term capital = Loans by the Federal Government + non-financial public enterprises + other assets and liabilities.

[2] Private long-term capital = Foreign direct investment + external loans from parent and associated companies + retained earnings.

Source: Ministry of Finance, *Economic Report*, various issues.

Appendix 3.1 Malaysia: External Debt, 1970-95

| Year | External Debt as Percentage of GNP (%) | Total Debt Service as Percentage of Exports of Goods and Services (%) |
|---|---|---|
| 1970 | 10.0 | 3.6 |
| 1980 | 28.0 | 6.3 |
| 1984 | 39.4 | 7.7 |
| 1989 | 51.6 | 14.7 |
| 1990 | 36.7 | 11.7 |
| 1992 | 35.2 | 6.6 |
| 1993 | 37.0 | 7.9 |
| 1994 | 36.9 | 7.9 |
| 1995 | 42.6 | 7.9 |

Source: World Bank, *World Development Report*, various issues.

Appendix 3.2 Regression Results: Effects of External Borrowing and FDI on the Malaysian Economic Growth Rate, 1966-96

LS // Dependent Variable is Y22
Date: 07/26/98 Time: 23:05
Sample: 1967 1996
Included observations: 30
Excluded observations: 0 after adjusting endpoints

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.911781 | 0.164107 | 5.556020 | 0.0000 |
| X23 | 0.005754 | 0.029087 | 0.197821 | 0.8449 |
| X3 | 0.052371 | 0.007116 | 7.359648 | 0.0000 |
| X4 | 0.029856 | 0.006643 | 4.494331 | 0.0002 |
| X6 | 0.016894 | 0.009007 | 1.875637 | 0.0729 |
| X77 | 0.012562 | 0.015107 | 0.831547 | 0.4139 |

| | | | |
|---|---|---|---|
| R-squared | 0.963085 | Mean dependent var | 3.002220 |
| Adjusted R-squared | 0.955394 | S.D. dependent var | 0.579024 |
| S.E. of regression | 0.122290 | Akaike info criterion | -4.025866 |
| Sum squared resid | 0.358915 | Schwartz criterion | -3.745626 |
| Log likelihood | 23.81983 | F-statistic | 125.2288 |
| Durbin-Watson stat | 1.538426 | Prob (F-statistic) | 0.000000 |

## 4. OTHER EFFECTS OF FCI ON THE MALAYSIAN ECONOMY

### Effects on Domestic Savings

Savings and Investment Trends

Despite Malaysia's high savings rate, it has sought to attract foreign capital inflows to raise the level of domestic capital formation. A relatively large portion of national investment has been financed by foreign capital inflows, particularly borrowings and foreign investments, including both FDI and portfolio investments.

As shown in Table 4.1, Malaysia's gross national savings rate (GNS/GNP) rose from an annual average of 18.1 per cent during 1966-70 to 30.4 per cent during 1976-80. Although the rate of capital formation increased significantly from 16.4 per cent during 1966-70 to 28.1 per cent during 1976-80, Malaysia was able to generate and mobilise sufficient domestic and national savings to finance a very large part of gross capital formation without significantly resorting to external borrowing. Thus, there were no large and unsustainable deficits in the current account of the balance of payments in the fifteen year period 1966-80, except during 1971-75, when the account recorded an average annual deficit of 3.7 per cent of GNP.

With the greater participation of the public sector in development and pursuit of a counter-cyclical policy in the early 1980s, the current account registered an average deficit of 8.4 per cent during 1981-85, reaching a high of 14.1 per cent of GNP in 1982. With the government resorting to external borrowings, the nation's external debt accelerated to RM40.2 billion by the end of 1985, compared to only RM10 billion in 1980, with a debt servicing ratio of 14 per cent of GNP in 1985, as against 4 per cent in 1980.

The recession in the mid-1980s forced the Malaysian government to voluntarily undertake a structural adjustment programme, combining fiscal restructuring with depreciation of the Malaysian ringgit, a renewed export drive, relaxation of conditions for foreign investment and many other incentives in order to reorient the economy back onto the path of sustained growth with price stability. All these actions reduced the GNS-GDI gap to -0.5 per cent of GNP in 1986, with significant surpluses of 8.9 per cent in 1987 and 5.7 per cent in 1988. Although the current account balance became negative again in 1989 and 1990, the average GNS-GDI gap for 1986-90 turned out to be positive at 2.1 per cent of GNP.

In the 1990s, structural change has continued, with manufacturing accounting for a growing proportion of GDP and exports. Although the nation's gross savings rate remained high at an average of 33.9 per cent of GNP during 1991-96, this was insufficient to finance the investment rate of about 40 per cent of GNP, resulting in a resource gap averaging 6.2 per cent of GNP. The resource gap is largely financed by the inflow of foreign capital, particularly FDI, into the manufacturing sector.

Savings Hypotheses

Savings are needed for investment to raise capital stocks and to reduce the country's dependence on foreign capital inflows. With the low incomes of LDCs, domestic savings are usually insufficient to finance capital formation, and this gap can be bridged by inflows of foreign capital. There is a considerable literature on the role of foreign capital inflows in supplementing domestic savings in developing countries. Orthodox theory has treated FCI as

a complement to domestic savings in financing investment for the economic growth of a country.

Departing from this orthodox position, Trygve Haavelmo (1963) hypothesised that domestic savings depend directly on income and relate negatively to foreign capital inflows. His hypothesis relating investment, GNP and capital inflows can be written as:

$$I(t) = [\ Y(t) + H(t)\ ] \qquad \text{Equation (1)}$$

where I = gross investment
Y = GNP
H = capital inflows.

Haavelmo saw investment as a function of income, including what a country gets from abroad, and domestic savings could be negative if H or FCI is large enough. Rahman (1968) interpreted this to mean that domestic savings depend not only on income, but also, negatively on FCI, and tested this hypothesis. For this purpose, he made a slight modification, postulating that:

$$I(t) = aY\ (t) + b\ H(t) \text{ and since } I(t) = S(t) + H(t)$$

where s(t) = domestic savings. The domestic savings function can be written as:

$$S(t) = aY(t) + b'H(t)$$

where $b' = b - 1$. Hence $S(t)/Y(t) = a + b'\ H(t)$ Equation (2)

Using equation 2 to test Haavelmo's hypothesis, Rahman concluded that it was quite likely that foreign capital not only augmented investment, but also substituted for domestic savings. From this, he advanced the behaviouristic hypothesis that governments in developing countries may voluntarily relax the domestic savings effort when more foreign aid is available than might otherwise be the case.

Gupta (1983), testing equation 2 with data for 50 developing countries, found that the coefficient for capital inflows was positive, but not significantly higher than zero. He concluded that FCI had virtually no effect on domestic savings in less developed countries. More detailed analysis was carried out by Papanek (1973), who broke down foreign capital into aid, FDI, and all other inflows. His results confirmed Haavelmo's hypothesis of a negative influence of foreign capital on savings.

Fry (1984), using time series data for the Asian region during 1960-80, found that in all four countries in his sample (Bangladesh, South Korea, Nepal and Thailand), foreign capital had a negative effect on domestic savings. A significant negative relationship between FCI and savings has also been found by many other researchers such as Leff (1963), Griffin and Enos (1970), Areskoug (1973), Weisskopf (1972), Ahmad (1972) and many others. Ghazali Atan (1990) tested Haavelmo's hypothesis for the Malaysian economy using data for 1961-86, confirming the negative relationship between FCI and savings. The results of some earlier findings can be seen in Table 4.2.

*Definition and Model Specification*

Overall savings, represented by gross domestic savings (GDS), are defined as the difference between income and consumption, i.e. S = Y - C, where S = gross domestic savings, Y = GDP, C = consumption. The savings rate is defined as S/Y, i.e. gross domestic savings scaled against GDP. The traditional Keynesian-type savings function can be augmented by export variables, per capita income, rate of income growth, the population structure and many other variables.

According to the absolute income hypothesis, the savings rate increases with the per capita income level by assuming that the marginal propensity to save (MPS) is higher than the average propensity to save (APS). Thus as per capita income increases, the relatively higher marginal savings rate will pull up the average propensity to save. Since the average propensity to save is the same as the savings rate, i.e. APS = S/Y, the savings rate can be expected to be positively related to per capita income.

Under the "life cycle hypothesis" developed by Modigliani and Brumberg, the savings rate is a positive function of income growth rate. This hypothesis maintains that savings mainly result from a desire to provide for consumption in old age. By generating higher lifetime incomes, a growing economy can therefore be expected to have positive effects on savings. This hypothesis also expected changes in the structure of the population to effect the savings rate. This effect can be tested by using either "the dependency rate" or other measures such as the population growth rate, the labour participation rate and others which may be used as proxies.

Export performance is also expected to have a favourable influence on the savings rate. Exports, especially of primary products, often result in highly concentrated incomes, and standard savings theory suggests that the propensity to save from such income is high (Papanek 1972). Also, countries with good export performance tend to face fewer foreign exchange constraints on investment, and therefore tend to provide more of an incentive to save.

To test the effect of FCI on domestic savings, most studies consulted included FCI as an additional explanatory variable in properly specified savings functions. Any positive effect of FCI on the domestic savings rate will exert positive side effects on the investment rate. If an indirect effect exists, the orthodox treatment of FCI would expect benefits from such inflows to the recipient country. The Keynesian-type saving equation can be written as:

$$S = a_0 + a_1\, FCI/Y + a_2\, CX + a_3\, GR + a_4\, GDPN + a_5\, \Delta\, L/L + vt$$
$$(a_1 <\!/\!> 0) \quad (a_2 > 0) \quad (a_3 > 0) \quad (a_4 > 0) \quad (a_5 > 0)$$

where S = gross domestic saving as percentage of GDP,
FCI = inflows of foreign capital as percentage of GDP,
CX = change in exports as percentage of GDP,
GR = GDP growth rate,
GDPN = GDP per capita,
$\Delta$ L/L = labour force growth rate and
v = stochastic error terms.

The specified model regresses domestic savings against explanatory variables, i.e. exports, FCI, per capita incomes, income changes and labour force growth rates as proxies for changes in the population structure. The expected signs of the parameters are given in parentheses below the equation.

Clarification of FCI Coefficient in the Savings Equation

Because of the failure to distinguish clearly between "rates" and "levels" of savings, there has been a controversy among economists with regards to the FCI coefficient in the savings equation. FCI may encourage increased consumption, reducing the domestic savings rates, while the remainder FCI will still augment capital formation, thus raising the overall growth rate. FCI encouraging consumption will reduce the savings rate of the recipient country, but the absolute volume of savings available in the short run will only be reduced if the increased in consumption due to FCI, i.e. the hitherto saved domestic income or resources is greater than the FCI.[1]

Newlyn (1977) has clarified the difference between an absolute and a relative reduction in the savings rate, pointing out that a FCI coefficient in the savings equation between 0 and -1.0 merely indicates that only part of FCI has been consumed. This means that FCI has only reduced the total savings rate, but has not reduced the absolute level of savings available. In this case, FCI appears to have had a substitute effect on domestic savings. But if the coefficient value is less than minus unity (-1.0), it means that the volume of investible resources or total savings has been reduced by the inflow of foreign capital. This explanation can be clarified by using the following equation where:

Total investment = total savings or $I = S + FCI$

where S = domestic savings,
FCI = foreign capital, which is assumed to equal foreign savings.

Therefore, the total effect of FCI on investment can be shown as:

$$\partial I/\partial FCI = \partial I/\partial S . \partial S/\partial F + \partial I/\partial F$$
$$= \partial S/\partial F + 1$$

since $\partial I/\partial S = \partial I/\partial F = 1$

Thus, as long as $\partial S/\partial F$ is less than minus unity (-1.0), any inflow of foreign capital will reduce total investible resources or total savings. Finally, should the FCI coefficient in the savings equation be significantly positive, then we can say that FCI has encouraged domestic savings. Here, FCI appears to complement domestic savings.

Table 4.2 shows the results of past studies, with the FCI coefficient mostly between 0 and -1.0. This suggests that only part of the FCI received by LDCs has been consumed, resulting in a reduction of the savings rate, S/Y, but not in absolute savings levels.

*Effect of FCI on Malaysian Domestic Savings*

The savings equation specified earlier was tested using Malaysian data for the sample period. To test the effect of FCI on overall Malaysian savings, FCI was inserted in the specified equation as an additional explanatory variable. The result obtained is as follows (see Table 4.3):[2]

$$X4 = c + a_1 \, FCI/Y + a_2 \, CX + a_3 \ln y + a_4 \, \Delta L/L$$

$$= -2.59 - 0.3046 \, FCI/Y + 0.0084 \, CX + 11.167 \ln y + 0.486 \, \Delta L/L$$

(-0.47) (- 3.78 ) ( 9.57) (4.79) (2.59)

$R^2 = 86.3\%$ D.W. = 1.882

where X4 = gross domestic savings as a proportion of GDP,
FCI/Y = foreign capital inflows as a proportion of GDP,
CX = change in exports as a proportion of GDP,
ln y = real GDP growth,
ΔL/L = labour force growth rate as a proxy for change in the population structure.

All explanatory variables carry the expected signs. The FCI coefficient is -0.305, and is statistically significant at the one per cent level. This result shows each one per cent increase in the inflow of foreign capital will reduce the savings rate by 0.305 per cent. The value of this coefficient (-0.305) lies between 0 and -1.0. This means FCI only negatively affected the savings rate, but did not reduce the absolute level of savings. FCI into Malaysia appears to have had a substitutive effect on domestic savings in the sample period. Any negative effect of FCI on the domestic savings rate will have negative side effects on the investment rate. Thus, the orthodox expectation of a positive contribution to growth may be exaggerated.

The analysis also disaggregated FCI into its components of DEBT/Y and FDI/Y. The result obtained is:

$$X4 = -2.244 - 0.269 \, DEBT/Y - 0.249 \, FDI/Y + 0.02 \, CX + 10.8 \ln y + 0.424 \, \Delta L/L$$

(-0.35) (-3.44) (-2.24) (8.53) (4.68) (2.43)

$R^2 = 86.2\%$ D.W. = 1.833

This result shows that each one per cent increase in the external debt reduced the savings rate by about 0.27 per cent and each one per cent increase in FDI reduced the savings rate by about 0.25 per cent. Both coefficients carry hypothesised negative signs and are significant at the five per cent level. Overall, the findings support the view that FCI has a negative effect on the savings rate of the recipient country. This is clearly contrary to the orthodox view that FCI positively influences the savings rate, thus leading to a higher economic growth rate in the recipient country.

**Other FCI Problems**

*Repatriation of Investment Income*

Liberal regulations on income repatriation, often considered necessary as an investment incentive, may also adversely affect the balance of payments. Investment income, which consists mostly of dividends and profits, has contributed significantly to the country's

growing services account deficits. Total income outflows in the form of profits and dividends have steadily increased from RM466 million in 1970 to about RM11.4 billion in 1996, as shown in Table 4.4. Prior to 1991, total net dividends outflows exceeded yearly net FDI inflows. In other words, private capital inflows have not been large enough to fully offset net dividend outflows, meaning that the net financial contribution of FDI was negative. Such negative net financial contributions increased from about RM180 million in 1970 to a peak of RM2.2 billion in 1988. During 1991-96, except in 1995, FDI's net financial contributions have been positive because of the increased FDI inflows, which more than offset the dividends outflows. However, the investment income outflows continue to be the largest component contributing to the services account deficit.

In addition, huge inflows of foreign capital, particularly in the form of borrowings, exposed Malaysia to external shocks, which have not only threatened financial stability, but also undermined the economic growth. The huge outflows of interest payments also contributed significantly to service account deficits, which have had negative implications for macroeconomic stability.

*High Import Content*

The large influx of FDI into the country has resulted in huge imports of investment and intermediate goods, which have contributed significantly to the growing import bills and to the declining merchandise surplus and large current account deficit. Table 4.5 shows that total investment goods as a proportion of total imports increased significantly from 25.2 per cent in 1970 to 40 per cent in 1996. Likewise, the proportion of intermediate goods increased from 35.3 per cent in 1970 to 45.2 per cent in 1996. The high import content of Malaysian manufactures also implies low domestic value-added and limited domestic linkages.

These results are corroborated by the findings of other studies. Ghazali Atan (1990) found that FDI causes import propensities to increase, where each ringgit of foreign-owned assets in the country involved around RM2.95 of additional imports. Edwards (1990) has estimated the import content of firms operating in the export processing zones at around 70 per cent, while Flatters and Purvis (1991) have estimated that, the imported input content for the electronic components sector was 80 per cent of gross exports in 1988. Pang (1990) suggests an import content of around 43 per cent for the entire Malaysian manufacturing sector (both foreign and local owned). This lower average figure suggests that the import content of domestic manufacturing firms has generally been much lower than that of the foreign owned sector (Ghazali 1992).

"*Crowding-out*" *Effects*

FDI may also have resulted in increased industry concentration. The high degree of industrial concentration implies a high degree of market power for a few large firms, resulting in high barriers to entry for other small firms. To the extent that large firms have been foreign, a crowding-out of local firms can be assumed to have taken place.

*Destabilising Effects*

In 1993, Malaysia experienced an unprecedented surge of short-term capital inflows which were largely temporary and speculative in nature. This surge put strains on the macro economy in terms of price and cost pressures and contributed to destabilising the domestic money and foreign exchange markets. With the huge inflows of short-term capital during this

period, narrow money supply increased from less than 20 per cent to a peak of 48 per cent in February 1994, while broader money (M3) increased by 30 per cent. Nevertheless, while the inflows during this period contributed to an increase in reserve money, this was not translated into increased lending by the banking sector. This inflow created excess liquidity in the banking system, causing downward pressure on domestic interest rates. The monetary multiplier — which generally ranged from 6.5 to 7.0 — declined during this period to below 6.0. Other factors causing deceleration in loan growth included low demand for credit owing to the availability of retained profits for investment, development of the capital market and the corresponding availability of equity financing, and also relatively lower foreign interest rates (Zeti 1994).

The short-term capital inflows also destabilised the asset price and stock markets. In 1993, inflows of foreign capital for the purchase of stock increased by RM19 billion, twice the amount of funds in the form of foreign borrowings and deposits. In addition to strong demand during the period of high growth, FDI inflows also contributed to pressure on the labour market, leading to pressure on costs and wages, and eventually, to a more serious cost-push inflationary problem.

## Conclusion

The statistical analysis here has found that FCI in aggregate and its components, i.e. external debt and FDI, have had significantly negative influences on Malaysian savings rate in the period covered. The FCI coefficient in the savings equation of between 0 and -1.0 suggests that while FCI in Malaysia reduced the savings rate, it did not reduce the absolute savings level. Thus, the positive FCI contribution to economic growth expected by orthodox theory was reduced because of FCI's adverse effect on the domestic savings rate, which would reduce, instead of raising the investment rate. The findings also suggest that FCI has destabilising effects, not only on the external balance, but also for macroeconomic stability in terms of price pressures as well as on the stock market and other financial markets. Thus, consideration needs to be given to balance the positive effects of FCI against the adverse effects it might have on the Malaysian economy.

*Notes*

1. This argument is made by Rottenberg (1971), and by Kennedy and Thirlwall (1971), and was repeated by Newlyn (1977).
2. Testing the hypothesis that they are significantly different from -1.0 produced the following results:

   Ho: = -1.0
   Ha: not so

   e.g. Testing the hypothesis on the coefficient of FCI/Y in regression (1):

   $$t \text{ value} = \frac{\beta - (-1)}{se(\beta)}$$
   $$= -0.305 - (-1) / 0.1837$$
   $$= 3.78$$

   t table for n = 27 at a 1% level of significance is 2.771. Since 3.78 > 2.771, Ho is rejected.

Table 4.1 Malaysia: Gross National Savings and Capital Formation, 1966-96

| Year | GNS/GNP | GDI/GNP | Resource Gap |
|---|---|---|---|
| 1966 | 16.8 | 16.3 | 0.4 |
| 1967 | 16.4 | 16.6 | -0.2 |
| 1968 | 17.5 | 16.6 | 0.9 |
| 1969 | 21.0 | 14.3 | 6.7 |
| 1970 | 18.1 | 17.9 | 0.2 |
| 1971 | 18.7 | 21.4 | -2.6 |
| 1972 | 17.1 | 22.1 | -5.0 |
| 1973 | 25.9 | 24.5 | 1.4 |
| 1974 | 23.8 | 29.8 | -6.0 |
| 1975 | 18.7 | 24.2 | -5.5 |
| 1976 | 28.2 | 22.7 | 5.5 |
| 1977 | 27.9 | 24.4 | 3.5 |
| 1978 | 28.6 | 27.9 | 0.7 |
| 1979 | 34.8 | 30.3 | 4.6 |
| 1980 | 30.4 | 31.6 | -1.2 |
| 1981 | 26.1 | 36.3 | -10.1 |
| 1982 | 25.0 | 39.1 | -14.1 |
| 1983 | 28.0 | 40.4 | -12.4 |
| 1984 | 30.7 | 36.0 | -5.3 |
| 1985 | 27.6 | 29.7 | -2.1 |
| 1986 | 27.4 | 27.9 | -0.5 |
| 1987 | 33.8 | 24.9 | 8.9 |
| 1988 | 33.4 | 27.6 | 5.7 |
| 1989 | 29.9 | 30.3 | -0.4 |
| 1990 | 30.3 | 32.1 | -1.8 |
| 1991 | 28.0 | 38.1 | -10.1 |
| 1992 | 32.3 | 35.4 | -3.1 |
| 1993 | 34.7 | 36.8 | -2.1 |
| 1994 | 34.4 | 39.2 | -4.8 |
| 1995 | 35.2 | 45.5 | -10.3 |
| 1996 | 38.5 | 45.1 | -6.6 |
| **Five Year Annual Averages** | | | |
| 1966-70 | 18.1 | 16.4 | 1.7 |
| 1971-75 | 21.2 | 24.9 | -3.7 |
| 1976-80 | 30.4 | 28.1 | 2.2 |
| 1981-85 | 27.7 | 36.1 | -8.4 |
| 1986-90 | 31.0 | 28.9 | 2.1 |
| 1991-96 | 33.9 | 40.0 | -6.2 |

Sources: Ministry of Finance, *Economic Report*, 1966 to 1996.

Table 4.2 Past Findings Showing Negative Relationships between Savings and Foreign Capital Inflows (t statistics given in brackets)

1. Rahman (1968), cross-sectional data for 31 LDCs:

$$S/Y = 0.1427 - 0.2473\ FCI/Y$$
$$(-2.568)$$

2. Leff (1968), Brazilian data (1940-60):

$$S(t) = 1.78 + 0.1545\ Y(t-1) - 0.1560\ F(t)$$
$$(0.38) \quad (7.73) \quad (-0.47)$$

$R^2 = 0.839$ D.W = 2.06

3. Griffin and Enos (1970), cross-sectional data for 32 LDCs (1962-1964)

a. Total sample:

$$S/Y = 11.2 - 0.73\ F/Y$$
$$(-6.64)$$

$R^2 = 0.54$

b. Asian sample:

$$S/Y = 16.3 - 1.14\ F/Y$$
$$(-2.92)$$

$R^2 = 0.90$

4. Weisskopf (1972), 17 LDCs classified as affected by a savings constraint:

$$S = a + 0.183\ Y - 0.227\ F + 0.176\ X$$
$$(65.9) \quad (-5.3) \quad (4.6)$$

$R^2$ (not available)

5. Papanek (1973), cross-sectional data for LDCs (1950s, 1960s):

$$S/Y = -13.3 + 3.69\ \ln y + 1.60\ \ln pop - 0.64\ F/Y + 0.28\ Xp/Y + 1.13\ Xo/Y$$
$$(3.2) \quad (5.7) \quad (4.3) \quad (-7.5) \quad (7.3) \quad (5.7)$$

$R^2 = 0.72$

6. Gupta (1970), data for 50 LDCs:

$$S/Y = 0.11083 + 0.0310\ F/Y$$
$$(12.6) \quad (0.39)$$

$R^2 = 0.055$

7. Ghazali Atan (1990), Malaysian data for 1961-86:

$$S/Y = -12.95 + 5.076\ y + 68.9\ \ln y + 0.496\ X/Y - 0.130\ (I - \pi) - 0.319\ FCI/Y$$
$$(-2.72) \quad (7.40) \quad (4.23) \quad (3.91) \quad (-1.09) \quad (-2.41)$$

$R^2 = 89.4$ D.W. = 1.45

Notes on variables:

S = domestic savings. F = foreign capital inflows. Y = GDP.
y = GDP per capita. g = GDP/GDP i.e. the rate of growth. M = imports.
X = exports, subscripts "p" refers to primary and "o" to other non-primary exports.
pop = population size.

Table 4.3 Regression Results: Effect of FCI and Its Components on the Malaysian Domestic Savings Rate, 1966-96 (explained variable: S/Y)

| Regression | c | FCI/Y | DEBT/Y | FDI/Y | CX | ln y | Δ L/L | $R^2$ | D.W. |
|---|---|---|---|---|---|---|---|---|---|
| 4) | -2.59 | -0.3046 | | | 0.0084 | 11.167 | 0.486 | 86.3% | 1.882 |
| t value | (-0.47) | (-3.78) | | (9.57) | (4.79) | (2.59) | | | |
| 5) | -2.24 | | -0.269 | -0.249 | 0.02 | 10.8 | 0.424 | 86.2% | 1.833 |
| t value | (-0.35) | | (-3.44) | (-2.24) | (8.53) | (4.68) | (2.43) | | |

Explanations of variable abbreviations:

S/Y = domestic savings rate as a proportion of GDP,
FCI/Y = foreign capital inflow as a proportion of GDP,
DEBT/Y = external debt as a proportion of GDP,
FDI/Y = foreign direct investment as a proportion of GDP,
CX = change in exports as a proportion of GDP,
ln y = real GDP growth,
Δ L/L = labour force growth rate as a proxy for change in the population structure.

Table 4.4 Net Financial Contribution of FDI, 1970-96 (RM million)

| Year | Net FDI | Factor Payments | Estimated Dividend Outflows | Net Financial Effect |
|---|---|---|---|---|
| 1970 | 287 | 590 | 466 | -179 |
| 1971 | 306 | 628 | 492 | -186 |
| 1972 | 320 | 586 | 433 | -113 |
| 1973 | 420 | 915 | 742 | -322 |
| 1974 | 1374 | 1386 | 1277 | -1103 |
| 1975 | 837 | 1091 | 966 | -127 |
| 1976 | 969 | 1531 | 1355 | -386 |
| 1977 | 999 | 1898 | 1544 | -545 |
| 1978 | 1158 | 2581 | 2240 | -1082 |
| 1979 | 1255 | 3195 | 2774 | -1519 |
| 1980 | 2033 | 3428 | 2910 | -877 |
| 1981 | 2914 | 3661 | 2904 | 10 |
| 1982 | 3262 | 4196 | 3085 | 178 |
| 1983 | 2926 | 5513 | 3968 | -1042 |
| 1984 | 1869 | 6693 | 4316 | -2447 |
| 1985 | 1725 | 6901 | 3928 | -2203 |
| 1986 | 1262 | 6012 | 3038 | -1776 |
| 1987 | 1065 | 6837 | 3566 | -2501 |
| 1988 | 1884 | 7594 | 4124 | -2240 |
| 1989 | 4518 | 7901 | 4724 | -206 |
| 1990 | 6309 | 9858 | 6840 | -531 |
| 1991 | 10996 | 9250 | 6573 | 4423 |
| 1992 | 13204 | 9965 | 7641 | 5563 |
| 1993 | 12885 | 12900 | 8174 | 4711 |
| 1994 | 10798 | 15400 | 9386 | 1412 |
| 1995 | 10464 | 16800 | 10562 | -98 |
| 1996 | 10464 | 17800 | 11430 | 1347 |

Sources: Ghazali Atan (1990); EPU; Bank Negara, *Annual Report*, 1988 to 1996.

Table 4.5 Malaysia: Imports of Intermediate and Investment Goods, 1970-96 (RM million)

| Year | Total Investment Goods | As % of Imports | Total Intermediate Goods | As % of Imports |
|---|---|---|---|---|
| 1970 | 1,079.2 | 25.2 | 1,515.1 | 35.3 |
| 1971 | 1,203.2 | 27.3 | 1,596.7 | 36.2 |
| 1972 | 1,383.9 | 30.5 | 1,726.5 | 38.0 |
| 1973 | 1,795.8 | 30.3 | 2,333.6 | 39.3 |
| 1974 | 3,300.9 | 33.4 | 3,920.8 | 39.6 |
| 1975 | 2,705.7 | 31.7 | 3,527.0 | 41.3 |
| 1976 | 3,061.3 | 31.5 | 4,235.6 | 43.6 |
| 1977 | 3,450.1 | 30.9 | 5,013.1 | 44.9 |
| 1978 | 4,042.8 | 29.6 | 6,253.8 | 45.8 |
| 1979 | 5,129.4 | 29.9 | 8,252.6 | 48.1 |
| 1980 | 7,030.0 | 30.0 | 11,752.0 | 50.1 |
| 1981 | 7,512.7 | 28.2 | 13,569.5 | 51.0 |
| 1982 | 9,038.0 | 31.1 | 14,168.1 | 43.6 |
| 1983 | 9,810.2 | 31.9 | 14,919.1 | 48.4 |
| 1984 | 10,804.7 | 32.8 | 15,633.4 | 47.5 |
| 1985 | 9,481.1 | 31.3 | 14,518.8 | 47.7 |
| 1986 | 8,043.2 | 28.8 | 13,735.5 | 49.2 |
| 1987 | 9,128.8 | 28.6 | 16,028.8 | 50.2 |
| 1988 | 12,814.3 | 29.6 | 21,568.0 | 49.8 |
| 1989 | 20,824.6 | 34.2 | 28,414.0 | 46.7 |
| 1990 | 29,658.2 | 37.5 | 35,904.0 | 45.4 |
| 1991 | 40,042.5 | 39.7 | 43,142.0 | 42.8 |
| 1992 | 42,185.9 | 41.6 | 41,388.1 | 40.8 |
| 1993 | 47,678.5 | 40.6 | 50,177.6 | 42.7 |
| 1994 | 64,488.1 | 41.4 | 67,821.9 | 43.5 |
| 1995 | 78,776.4 | 40.5 | 86,916.6 | 44.7 |
| 1996 | 78,933.0 | 40.0 | 89,163.9 | 45.2 |

Sources: Mohamed Aslam (1996); *Malaysia: International Trade and Industry Report, 1996/97*.

Table 4.6 Malaysia: Share of Exports to Gross Domestic Product, 1966-96

| Year | Exports/GDP (percentage) |
|---|---|
| 1966 | 39.68 |
| 1967 | 37.96 |
| 1968 | 38.86 |
| 1969 | 43.72 |
| 1970 | 41.27 |
| 1971 | 39.00 |
| 1972 | 34.62 |
| 1973 | 40.73 |
| 1974 | 46.69 |
| 1975 | 41.52 |
| 1976 | 47.86 |
| 1977 | 46.26 |
| 1978 | 47.07 |
| 1979 | 53.73 |
| 1980 | 52.85 |
| 1981 | 47.05 |
| 1982 | 44.92 |
| 1983 | 46.86 |
| 1984 | 48.58 |
| 1985 | 49.02 |
| 1986 | 49.24 |
| 1987 | 57.17 |
| 1988 | 60.86 |
| 1989 | 66.86 |
| 1990 | 69.40 |
| 1991 | 71.28 |
| 1992 | 68.77 |
| 1993 | 73.18 |
| 1994 | 79.97 |
| 1995 | 84.66 |
| 1996 | 77.07 |

Sources: Mohamed Aslam (1996); Ministry of Finance, *Economic Report, 1996/1997*.

Appendix 4.1 Regression Results: Effects of FCI on the Malaysian Domestic Savings Rate, 1966-96

LS // Dependent Variable is X4
Date: 04/27/98 Time: 21:11
Sample: 1966 1996
Included observations: 31

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | -2.589341 | 3.361896 | -0.770202 | 0.4481 |
| X5 | -0.304599 | 0.183659 | -1.658505 | 0.1092 |
| X9 | 0.008423 | 0.105317 | 0.079978 | 0.9369 |
| X2 | 0.485917 | 0.572701 | 0.848465 | 0.4039 |
| Y22 | 11.16633 | 2.537419 | 4.400665 | 0.0002 |

| | | | |
|---|---|---|---|
| R-squared | 0.862669 | Mean dependent var | 31.00323 |
| Adjusted R-squared | 0.841541 | S.D. dependent var | 7.114937 |
| S.E. of regression | 2.832233 | Akaike info criterion | 2.228821 |
| Sum squared resid | 208.5602 | Schwartz criterion | 2.460109 |
| Log likelihood | -73.53382 | F-statistic | 40.83096 |
| Durbin-Watson stat | 1.882061 | Prob (F-statistic) | 0.000000 |

Appendix 4.2 Regression Results: Effects of External Borrowings and FDI on the Malaysian Domestic Savings Rate, 1966-96

LS // Dependent Variable is X4
Date: 04/27/98 Time: 21:13
Sample: 1966 1996
Included observations: 31

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | -2.243755 | 3.577774 | -0.627137 | 0.5363 |
| X6 | -0.268863 | 0.212314 | -1.266345 | 0.2171 |
| X7 | -0.248860 | 0.335297 | -0.742208 | 0.4649 |
| X9 | 0.019913 | 0.119612 | 0.166483 | 0.8691 |
| X2 | 0.423803 | 0.585615 | 0.723690 | 0.4760 |
| Y22 | 10.80678 | 2.519235 | 4.289708 | 0.0002 |

| | | | |
|---|---|---|---|
| R-squared | 0.862331 | Mean dependent var | 31.00323 |
| Adjusted R-squared | 0.834797 | S.D. dependent var | 7.114937 |
| S.E. of regression | 2.891879 | Akaike info criterion | 2.295798 |
| Sum squared resid | 209.0741 | Schwartz criterion | 2.573344 |
| Log likelihood | -73.57196 | F-statistic | 31.31894 |
| Durbin-Watson stat | 1.832895 | Prob (F-statistic) | 0.000000 |

# 5. CONCLUSIONS

## Overall Impact of FCI on the Malaysian Economy

Bringing together the findings of the previous chapters, the overall impact of FCI on the Malaysian economy may be summed up as follows:

a) FCI has augmented domestic savings for investment.
b) FCI has augmented foreign exchange, e.g. for the purchase of imported inputs.
c) FCI has indirectly affected the domestic savings rate.
d) FCI affected factor payment outflows, export and import propensities, terms of trade and capital flight — which all affect the balance of payments.

The first three effects influence the direction and size of FCI's effect on investment while the second and fourth effect the balance of payments. FCI, by influencing these two variables, thus influences Malaysian growth. These various effects of FCI on the Malaysian economy are also shown in Figure 5.1.

## Overall Findings

This study examines the role of FCI in Malaysian economic growth development between 1966 and 1996. High and growing investment rates in Malaysia during this period were mainly financed by domestic savings, but FCI also played an important role in financing investments. During 1991-96, the share of FCI in investment financing was equivalent to 6.2 per cent of GNP on average, compared to an average of 3.7 per cent of GNP during 1971-75. The main features of FCI into Malaysia during 1966-96 can be summarised as follows:

a) From 1966 to 1986, official long-term capital flows were most significant, while official aid flows moderated, private capital flows were insignificant due to various government policies to limit foreign equity ownership in the country.
b) Since 1989, long-term private capital has become the major type of inflow while the share of official long-term capital has decreased.
c) As private capital inflows continued to increase, short-term capital inflows have also increased proportionately since 1991.

The single equation analysis using the ordinary least squares (OLS) method, carried out in the previous chapters, showed FCI's direct and indirect effects on growth. The findings, as summarised in Table 5.1, support both the claims of positive effects of FCI, stressed by orthodox theory, and the undesirable side effects emphasised by the more critical literature.

The growth equation (equation 1 in Table 5.1) shows that Malaysian economic growth between 1966 and 1996 was positively affected by the increase in the investment rate. The labour force growth rate also contributed positively to the economic growth rate, even though this was relatively less significant statistically.

Despite the high gross national savings rate and net export earnings, Malaysia still has to depend on FCI to finance its high rate of capital formation. The growth equation (equation 2 in Table 5.1) shows that FCI contributed positively to Malaysian economic growth in the period under study such that every one per cent increase in FCI increased the economic growth rate by 0.019 per cent. In terms of relative efficiency, the analysis found that the domestic savings rate contributed more than FCI to the Malaysian economic growth rate with

a coefficient of 0.024. Manufacturing sector growth contributed strongly to overall growth with a coefficient of 0.056. This means that every one per cent increase in the domestic savings rate increased the overall growth rate by 0.024 per cent while every one per cent growth in the manufacturing sector increased the overall growth rate by 0.056 per cent. The labour force growth rate also contributed favourably to the output growth rate with a coefficient of 0.01, i.e. less significantly than FCI.

More detailed analysis in Chapter 3 distinguished two components of FCI, i.e. debt and FDI. The findings (equation 3 in Table 5.1) show that both debt and FDI contributed positively to output growth with coefficients of 0.02 and 0.01 respectively. These results suggest that debt induced more output growth than FCI.

Chapter 4 assessed the effects of FCI on the domestic savings rate and the country's balance of payments. (equations 4 and 5 in Table 5.1). The findings show that FCI had an overall negative effect on the domestic savings rate, with the coefficient bigger than minus unity in absolute terms. This suggests that FCI reduced the domestic savings rate, but not the total level of savings. The savings equation also found the export and income variables having strong positive effects on the savings rate. FCI also negatively influenced the balance of payments position, with destabilising effects on asset and stock markets.

Taking into account both the positive direct effects and the more negative indirect effects of FCI, the overall impact of FCI on growth was assessed by using the simultaneous equation approach proposed by Gupta and Islam (1983) (shown in Table 5.2). The negative effect of FCI on the domestic savings rate dampened the aggregate FCI effect on growth. Thus, the overall effect of FCI on growth is smaller than the direct effect, diminishing the growth-inducing effects of such inflows.

**Policy Implications**

The findings of this study have several policy implications for Malaysia. The most important implication is that if the country wishes to achieve rapid economic growth, efforts have to be directed towards increasing the country's internal strengths, which include manufacturing sector productivity and human resource, and mobilising domestic resources more effectively. Measures need to be designed to improve savings propensities, including the development of financial institutions, maintenance of financial stability as well as establishment and maintenance of an efficient tax regime, etc. Policies and efforts to increase export capabilities include human resource development, acquisition and development of new technology, provision of more appropriate incentives and development of new areas of potential comparative advantage. In other words, the focus needs to be shifted towards improving domestic economic fundamentals and enhancing the resilience of the financial system, while addressing structural weaknesses in the economy.

Considering both the positive direct effects and the negative indirect effects of FCI on growth, efforts need to be taken to derive maximum benefits from FCI. Indiscriminate reliance on FCI cannot guarantee net benefits. Heavy reliance on foreign capital to finance investment is not an unproblematic option — guaranteeing sustainable rapid growth for the recipient country. Malaysia should, therefore, continue to draw foreign direct investment in those areas where domestic resources cannot provide an adequate substitute. In other words, FDI should not only be sought to augment savings, but also to develop desired capabilities in ways which complement and enhance rather than replace domestic resources. This

underscores the need to continue to beef up domestic capital formation through increased savings.

The Malaysian government should also be careful in deciding which types of foreign investment to encourage and the trade policy to adopt. The analysis in this study shows that both FDI and debt contributed almost equally towards the growth rate as well as the domestic savings rate. The government should continue to attract FDI and to rely relatively less on official long-term capital. This is because FDI motives ensure enterprise profitability thus disciplining the deployment of such investment. FDI also often brings in technology, managerial skills, international market access, marketing know-how as well as other benefits.

The limited gains from other FCI, or for that matter, from non-'greenfield' FDI (e.g. for mergers and acquisitions) underscore the need to maintain sound regulatory policies to limit problems arising from increased inflows of foreign capital.

Figure 5.1 Effects of FCI on Malaysian Economic Growth

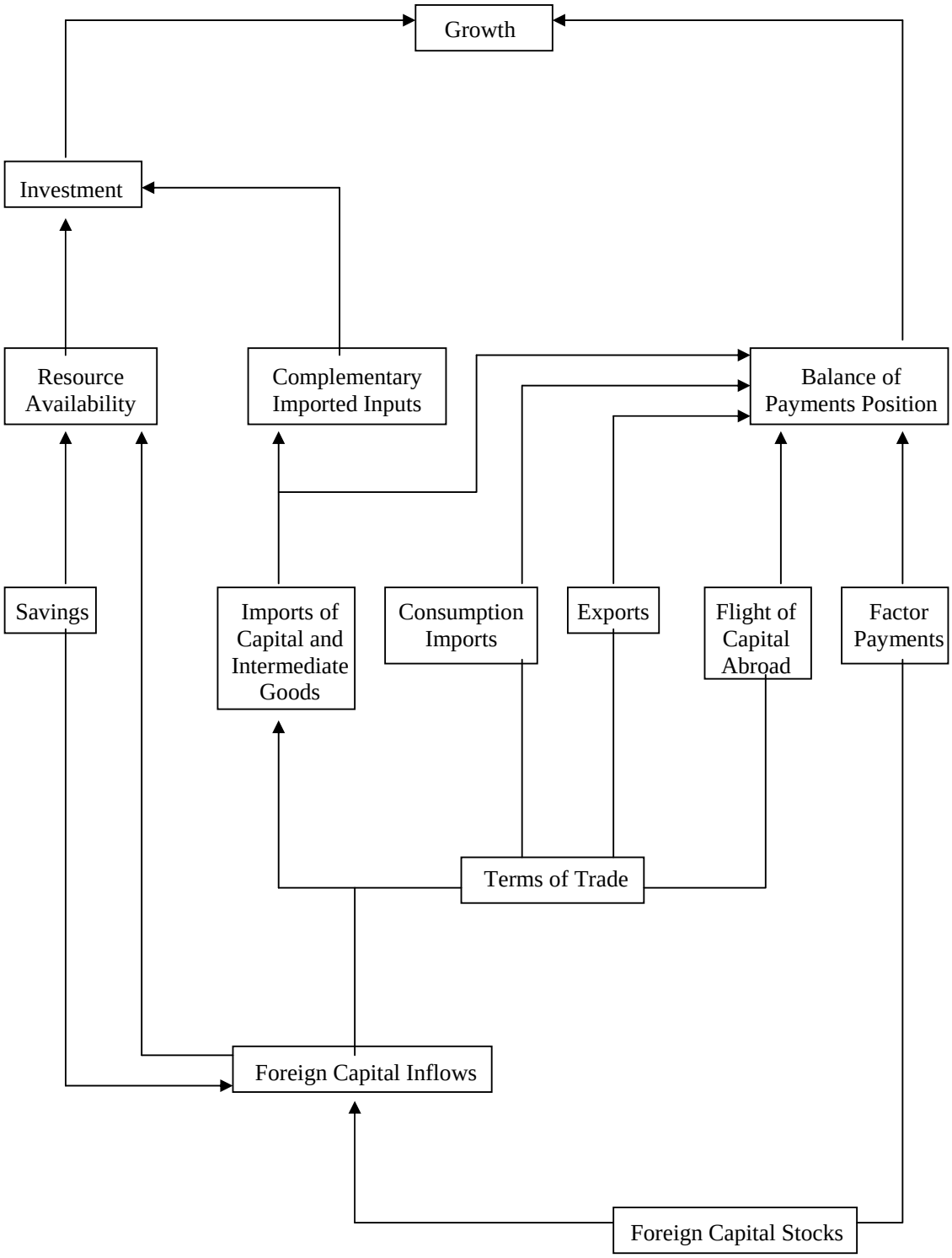

Table 5.1 Results of Ordinary Least Squares (OLS) Estimations Using Malaysian Data, 1966-96

1. $\ln y = 1.16 + 0.023\ I/Y + 0.021\ \Delta L/L + 0.056\ SC$
   (8.72) (4.07) (0.70) (9.11)
   $R^2 = 95.6\%$ D.W. = 1.2215

2. $\ln y = 0.98 + 0.024\ S/Y + 0.019\ FCI/Y + 0.01\ \Delta L/L + 0.056\ SC$
   (6.65) (3.76) (2.57) (0.36) (9.12)
   $R^2 = 96.2\%$ D.W. = 1.8387

3. $\ln y = 0.91 + 0.03\ S/Y + 0.02\ DEBT/Y + 0.01\ FDI/Y + 0.006\ \Delta L/L + 0.05\ SC$
   (5.56) (4.53) (1.88) (0.84) (0.2) (7.47)
   $R^2 = 96.3\%$ D.W. = 1.538

4. $S/Y = -2.59 - 0.3046\ FCI/Y + 0.0084\ CX + 11.167 \ln y + 0.486\ \Delta L/L$
   (-3.78) (9.57) (4.79) (2.59)
   $R^2 = 86.3\%$ D.W. = 1.882

5. $S/Y = -2.244 - 0.269\ DEBT/Y - 0.249\ FDI/Y + 0.02\ CX + 10.8 \ln y + 0.424\ \Delta L/L$
   (-3.44) (-2.24) (8.53) (4.68) (2.43)
   $R^2 = 86.2\%$ D.W. = 1.833

Notes on variables:

| | | |
|---|---|---|
| I/Y | = | investments rate as a proportion of GDP, |
| S/Y | = | savings rate as a proportion of GDP, |
| SC | = | manufacturing sector growth rate, |
| $\Delta L/L$ | = | labour force growth rate, |
| FCI/Y | = | foreign capital inflow as a proportion of GDP, |
| DEBT/Y | = | external debt as a proportion of GDP, |
| FDI/Y | = | foreign direct investment as a proportion of GDP, |
| CX | = | change in exports as a proportion of GDP, |
| ln y | = | real GDP growth. |

Note: Values in parentheses are for t statistics.

Table 5.2 Simultaneous Equation Approach: Gupta and Islam, 1983

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$$\text{Growth } (G) = a_1 + b_1\, S/Y + c_1\, FCI/Y + d_1\, \Delta L/L + e_1\, SC \qquad \text{Equation 1}$$

$$S/Y = a_2 + b_2\, y + c_2\, G - d_2\, FCI/Y \qquad \text{Equation 2}$$

where $G$ = growth rate of output,
$S/Y$ = savings as a proportion of GDP,
$FCI/Y$ = FCI as a proportion of GDP,
$y$ = per capita income,
$\Delta L/L$ = labour force growth rate,
$SC$ = manufacturing value added as a proportion of GDP.

Substituting equation (2) into equation (1), giving

$$\text{Growth} = a_1 + b_1 a_2 + b_1 b_2\, y + b_1 c_2\, G - b_1 d_2\, FCI/Y + d_1\, \Delta L/L + e_1\, SC + c_1\, FCI/Y$$

Collecting terms and simplifying:

$$\text{Growth} = \frac{1}{(1 - b_1 c_2)} \left[a_1 + b_1 a_2 + b_1 b_2\, y + (c_1 - b_1 d_2)\, FCI/Y + d_1\, \Delta L/L + e_1\, SC\right]$$

The direct effect is given by c in equation (1). The total effect of FCI on growth is given by the expression:

$$\frac{1}{(1 - b_1 c_2)} * [c_1 - b_1 d_2]$$

In any event, the total effect on the growth rate, as long as foreign capital exercises a negative effect on the domestic savings rate, is going to be smaller than the direct effect.

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