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A Re-Evaluation of the Determinants of FDI in Malaysia

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ABSTRACT

This paper examines the key determinants of foreign direct investment (FDI) in Malaysia using time series analysis techniques that address the problem of non-stationarity. Specifically, variables such as trade openness, infrastructure quality, market-size, human capital and natural resource are tested using the ADF and cointegration tests to ensure that the regression is not spurious. In line with several other empirical studies, results obtained confirm that traditional factors such as market size are still dominant factors shaping the distribution of FDI in Malaysia, while the natural resource availability is the only insignificant variable. However, other non-traditional factors such as trade openness, agglomeration and human capital are also greatly increasing in importance, especially during this era of globalisation. Besides that, the complex global integration strategies adopted by multi-national companies (MNCs), which favour the presence of sophisticated and created assets in host countries over most other determinants also play an important role. Therefore, it is crucial that developing countries formulate policies that improve local infrastructure, local skills and build up their human resource capabilities to increase competition for FDI.

ABSTRAK

Artikel ini mengkaji penentu utama pelaburan langsung asing dengan menggunakan analisis siri masa yang mengambil kira masalah ketakpegunan. Secara spesifik pemboleh ubah seperti keterbukaan perdagangan, kualiti infrastruktur, saiz pasaran, modal manusia dan sumber asli diuji menggunakan ujian ADF dan kointegrasi untuk memastikan regresi yang dijalankan bukanlah palsu. Selaras dengan kajian empirik lain, hasil kajian mengesahkan faktor tradisional seperti saiz pasaran masih merupakan faktor utama yang menentukan agihan pelaburan langsung asing di Malaysia manakala kesediaan sumber asli merupakan faktor tidak signifikan. Walau bagaimanapun faktor bukan tradisional lain seperti keterbukaan perdagangan, agglomerasi dan modal manusia menjadi semakin penting terutamanya di era globalisasi masa kini. Selain itu, strategi integrasi global yang kompleks oleh MNC, yang gemar kepada kehadiran sofistikated aset di negara hos juga memainkan peranan penting. Dengan itu, adalah penting negara membangun merancang dasar untuk memperbaiki infrastruktur dan kemahiran tempatan dan membina keupayaan sumber tenaga manusia untuk meningkatkan persaingan terhadap FDI.

INTRODUCTION

Foreign direct investment (FDI) has increased significantly over the past two decades and has grown at an unprecedented pace for more than a decade with the exception of the brief interruption during the world recession in the 1990s. Multi-national corporations (MNCs) from developed countries are expanding abroad through direct investments more than ever before, and almost all developing countries are competing to attract these investments. At the same time, various experts argue that the determinants of FDI have changed in the process of globalisation. As a consequence, it would be no longer sufficient to offer promising markets in order to induce FDI inflows. Policy makers now face rather complex challenges in striving for locational attractiveness to FDI (Kokko, 2002). Despite the abundance of studies on the determinants of FDI, the vast majority of them consist of analyses involving multiple countries and thus render them unsuitable for analysing single country based determinants. This also makes the used measurement standards such as social, cultural, economic and political factors difficult to delineate. The main purpose of this study is to identify and clarify the determinants of FDI in a single country, namely Malaysia, which are based on easily measurable and quantifiable economic indicators and suitable proxies, and is conducted over a significant period of time.

While the vast majority of the literature consists of examples taken from other countries, there are nevertheless a few examples of studies that refer to Malaysia. A study done by Shakrani, Zainol and Sahlan (2002) has indicated a strong positive correlation between economic growth and FDI inflow, which in turn justifies the liberal trade, and capital inflow policies adopted by the Malaysian government. While this study does not focus on the specific determinants of FDI but focuses on the causality relationship between economic growth and inward FDI, the results achieved is nevetheless consistent with the need for stable governance and liberal trade policies found in the non-traditional FDI variables. Another study which focuses on FDI in the Malaysian context is the study done by Sahlan, Suffian and Annuar (2000) which focuses on FDI inflows into Malaysia using the Investment Development Path (IDP). The results of this study indicates that Malaysia is still located in the stage 1 and 2 of the IDP which means that much of the FDI into Malaysia is still to serve the local markets and is still very much import subsitution oriented with the export based industries still very much dependent on favourable government policies and incentives. This in turn, indicates a lack of quality human capital and technical know how among Malaysian companies. Thus, in order to proceed into the third stage of the IDP whereby there are equal levels of inward and outward FDI within the host country, Malaysia would have to enhance its competitive base through better infrastructure and human capital coupled with transparent and stable political policies.

The purpose of this paper is to examine the significant determinants of FDI in Malaysia using a time series data from 1970 to 2000 with respect to infrastructure, trade openness, human capital, natural resource availability and market size, all of which are represented by their respective proxies via econometric methods. The main contribution of this article is the first time utilisation of several variables that have not been previously examined in the Malaysian context. While there have been many articles that have examined the determinants of FDI, some of the variables examined have yet to be tested in the Malaysian context. Thus, this study seeks to re-evaluate the determinants of FDI by using the traditional determinants of FDI alongside the non-traditional variables in order to ascertain whether the traditional determinants of FDI in Malaysia are still relevant or are declining, in line with the importance of the non-traditional variables. It is hoped that the information derived from this study will enable further research into the ever-changing determinants of FDI in Malaysia for it to remain competitive in this era of globalisation.

LITERATURE REVIEW

The empirical evidence on the determinants of FDI flows is extensive as it is controversial. These

studies have evaluated the determinants of inbound FDI based on three main approaches, namely micro-oriented econometric study, survey data analysis and aggregate econometric analysis. Despite the large number of econometric studies done, a broad consensus on the major determinants of FDI remained elusive. This problem is chiefly due to the lack of available and accurate data on FDI flows and its potential determinants particularly at the sectoral level. This flaw is further compounded by the tendency of many studies, which attempted to analyse FDI determinants by pooling together a group of countries, all of which are structurally diverse.

Among the more traditional FDI determinants, market related factors clearly stand out. In a frequently quoted survey of the earlier literature on FDI determinants, Agarwal (1980) found that the size of the host country markets to be the most popular explanation of a country's propensity to attract FDI, especially when FDI flows to developing countries are considered[1]. Even current authors who dismissed earlier studies as seriously flawed came up with results supporting the relevance of market related variables such as GDP, population, GDP per capita and GDP growth (Wheeler & Moody, 1992; Tsai 1994; Loree & Guisinger, 1995; Chakrabarti, 2001;Noorbakhsh *et al.*, 2001; Asiedu, 2002).

Against this backdrop, the most obvious question is whether the dominance of market related factors still remains significant in this age of globalisation and whether less traditional FDI determinants have become more important. With regard to market related variables, Loree and Guisinger (1995) found that the GDP per capita variable of host countries seems to be a major determinant of FDI from the United States in 1977, but not in 1982. Both authors presumed that this was due to a shift from local market-seeking FDI towards a more world market oriented FDI. This evidence suggests that motives for FDI inflows may have changed even before the globalisation wave even began. However data constraints prevented both authors from testing this preposition further in order to determine whether the change in motives apply to both industrialised and developing host countries[2]. The result by Tsai (1994), whose sample consisted of exclusively developing countries indicated that the importance of market related variables did not decline in the 1980s compared to the 1970s. Econometric tests performed by UNCTAD (1998: 135-140) indicated that market size related variables remained a dominant influence on inward FDI through the mid 1990s. Tsai (1994) also indicated that while FDI and the growth of host country exports were positively correlated in the 1970s, the same was no longer applicable in the 1980s.

This was contrary with the earlier motives of world market oriented FDI as most of the FDI seemed to be headed towards developing countries. The analysis by Lucas (1993) of the determinants of FDI in East and South East Asian countries corroborated with this view. Lucas suspected that the importance of local market size may be overstated by the various empirical studies since they omitted export markets as a determinant of FDI. Other studies which emphasise on trade related determinants, found that export orientation was the strongest variable for explaining why a country attracted FDI, while the sensitivity analysis done by Chakrabarti (2001) found that openness to trade (proxied by exports plus imports to GDP) had the highest likelihood of being positively correlated with FDI. Asiedu (2002) used the same proxy for openness and came to a similar conclusion when separating Sub-Saharan host countries from host countries in other regions. This by itself is significant as African countries differ significantly from non-African sample countries with regard to other FDI determinants except for trade openness, which was only slightly weaker.

Despite the importance of studies using trade related variables, there are also inherent flaws related to using the ratio of exports plus imports to GDP, namely the large country bias. An alternative approach was undertaken by Taylor (2000), whom used survey results from the World Competitiveness report published by IMD and the degree to which government policy discourages imports. This measure of trade openness was shown to be positively correlated to FDI undertaken by MNCs from the United States. By contrast, alternative proxies of openness (tariff rates and coverage of non-tariff barriers) turned out to be insignificant when correlated with FDI. Though this study indicated a globalisation-

induced increase in the level of openness, it had a key weakness, namely it did not assess changes over time. Finally, the study by Noorbakhsh, Paloni and Youssef (2001) offered insights on non-traditional determinants of FDI in developing countries by using non-trade related variables such as human capital (proxied by the secondary school enrolment to population ratio and the number of accumulated years in secondary education present in the working age population). Their study indicated that there was a positive and significant correlation between human capital and FDI since the estimated coefficients of the variables used as proxies of human capital as well as their t-ratios increased in magnitude over the period of the study. Both authors attributed this finding explicitly to the process of globalisation. However, limitations of this study are twofold: the period of observation was restricted from 1983-1994 and changes over time are not used for FDI determinants other than human capital.

ANALYTICAL METHODS AND DATA

Traditional determinants consist of the proxy variables that have been extensively tested and mostly pertain to market seeking variables such as GDP, population, GDP per capita and GDP growth. While these variables are relevant to the studies on FDI, it is clear that the nature of determinants are slowly changing in line with the process of globalisation. As a result, it would be no longer sufficient for countries to offer promising markets in order to induce FDI inflows since a large market is no longer the sole criteria for determining locational attractiveness to FDI. Apart from unilateral liberalisation, successive rounds of multilateral trade liberalisation have reduced the relevance of market access through FDI for many products (UNCTAD 1998:115). Recent studies have also suggested that FDI is increasingly used to by some industries to slice up the value chain and to outsource less human capital intensive stages of the process to lower income countries offering the relevant comparative advantages.

Non-traditional determinants of FDI consist of the newer variables that have become important with the rise of globalisation. Examples of such variables consist of proxies for human capital, quality of political governance and trade openness. Among these are total real education expenditure, real trade share and real government consumption per GDP. This is also consistent with the two main waves of revolution, which swept the world. One is the rapid evolution in information and communication technology (ICT) which is facilitating a global shift in service industries worldwide while since the early 1980s, a "third wave" of democratisation has pushed aside many authoritarian regimes which in turn has led to economic reforms which favor investors. These two waves, one technological and one political, are interacting to shape trade and capital flows, including FDI.

Model Specification

$$\begin{aligned} LnFDI &= \beta_0 + \beta_1 LnEDUEX_t + \beta_2 LnIMPEXP_t \\ &\quad + \beta_3 LnRGDPCAP_t + \beta_4 LnGOVGDP_t \\ &\quad + \beta_5 LnRESOURCE_t + \mu_t \end{aligned} \quad (1)$$

Where:

FDI	=	Total foreign direct investment in Malaysia
β_0	=	Constant
$EDUEX_t$	=	Total real education expenditure
$IMPEXP_t$	=	Real trade share (import + export) per real GDP
$RGDPCAP_t$	=	Real GDP Per Capita
$GOVGDP_t$	=	Real Government expenditure per real GDP
$RESOURCE_t$	=	Total crude oil consumed domestically per total production.
μ_t	=	Error term

The study uses annual time series data for the period 1970 – 2000; all variables are converted into natural log form. Data for various variables were obtained from the Malaysian Department of Statistics annual economic statistics publication for the year 2000, the various issues of International Financial Statistics published by the

International Monetary Fund and various issues of the Monthly Bulletin published by Bank Negara Malaysia (Malaysian Central Bank).

The dependent variable for this study is the FDI flows into Malaysia measured in millions of U.S. dollars, which are then converted into Malaysian Ringgit based on the IMF's official exchange rate for that year (henceforth referred to as FDI).

The second variable selected is trade openness, which is measured using the trade share (Import plus Export) of GDP (IMPEXP) as a proxy. This proxy has been proven to be positively significant in studies done by Edwards (1990) and Hausmann and Fernandez-Arias (2000). Studies done by Chakrabarti (2001) and Asiedu (2002) also showed a positively correlated and significant relationship between trade openness and FDI using this proxy. There are two reasons for selecting import per GDP as a proxy for trade openness. Firstly, there is widespread perception that "open" economies encourage more confidence and increase foreign investment. Secondly, there is no better measurement of trade openness than trade share per GDP as it is a measure of the amount of foreign goods and services brought into Malaysia as well as the amount of Malaysian goods and services sold overseas.

Real Gross Domestic Product Per Capita (RGDPCAP) is used as a proxy for market demand and market size in Malaysia. It is calculated by dividing GDP per capita with the GDP deflator for 1995, then times 100 ((GDP per capita / 1995 deflator) x100)). The use of Real GDP per capita of host countries for measuring market size and demand has been proven by Loree and Guisinger (1995) to be a significant determinant of FDI from the United States. Schneider and Frey (1985) and Tsai (1994) also found that there is a positive relationship between real GDP per capita and FDI. Generally, the main argument is that a higher GDP per capita implies better prospects for FDI in the host country and is valid for market seeking FDI, hence a positive and significant result is expected.

Agglomeration refers to the concentration and location of economic activities that give rise to economies of scale and positive externalities. According to Wheeler and Moody (1992), the level of agglomeration is positively correlated to FDI. With regard to infrastructure, real government expenditure per real GDP (GOVGDP) will be used. A high expenditure rate may indicate stability in expenditure patterns since part of government expenditure is invested in infrastructure, thus a positive and significant relationship is expected.

The next variable to be analysed is the availability of natural resources with the proxy being the ratio of crude petroleum consumed to the amount produced domestically (per '000 tonnes) also known as (RESOURCE). One of the factors that is often cited to explain a MNC's location decision is the availability of natural resources. This especially applies to less developed countries which are more concerned with relative costs rather than "created assets" such as technology and skilled labour. A study done by Lim (1983) found that the coefficient of natural resource to FDI to be positive and significant for 27 least developed countries from 1965-1973, however this finding is no longer applicable for the 1980s and 1990s. Broadly speaking, until the late 1970s, FDI was concentrated in the primary sector and resource-based manufacturing making the availability of natural resources the most important host-country determinant for FDI. While oil-producing countries accounted for half of the FDI flows to developing countries in 1979-1981, they only managed to account for one-fifth of total FDI to developing countries in 1995-1996 (UNCTAD, 1998). With the exception of certain natural resource seeking FDIs the vast majority of total global FDI is now concentrated in services and manufacturing. Thus, this proxy is expected to be insignificant as shown in the study by Noorbakhsh, Paloni and Youssef (2001), using the proxy consisting of the exports of metals and minerals as a percentage of merchandise exports. Despite this relative shortcoming, the result for this variable is expected to be similar to the study mentioned above as Malaysia is no longer dependent on natural resource seeking FDI as before, thus an insignificant and negative correlation is expected.

The decline of natural-resource seeking FDI and the rise of the service and manufacturing seeking FDI has brought a shift in FDI towards

capital, knowledge and skill-intensive industries making the presence of a well educated pool of labour being more attractive for MNC's relative to low labour costs by themselves. With regard to this, high levels of education are regarded as the most important element in human resources development (UNCTAD, 1994; World Bank, 1999). Efficient education systems may result in a labour force that is literate, numerate and skilled in the use of modern production facilities and techniques. In this respect, it has been argued by Meier (1995) that, "the most critical manpower requirement tends to be people with a secondary education who can be managers, administrators, professional technicians, or sub professional technical personnel". While a study done by Schneider and Frey (1985) utilised the proxy of secondary school enrolment ratio for human capital, one would ideally want to employ a measure of the stock of human capital rather than its flow. Thus, we will use the proxy of real total education expenditure in Malaysia measured in real terms to measure human capital (EDUEXP). It should also be noted that in many developing countries, the cost of labour is still an important consideration for labour intensive, efficiency seeking FDI since, for a given level of productivity, labour typically costs less in developing countries. This is echoed by Lucas (1993) and Wheeler and Moody (1992), whom had found that the wage cost variable, is a significant determinant of FDI flows. Taking this result into consideration and the fact that much of the FDI in Malaysia is labour intensive and efficiency or cost seeking, we would expect that our result would have a significant and negative relationship since higher levels of human capital would imply better skills and higher labour costs.

Method of Estimation

The unit root test using a standard Augmented Dicky Fuller (ADF) is performed to determine whether all variables are stationary and to determine the orders of integration of the variables. Should all the variables be tested as stationary, then the regression using the ordinary least squares method (OLS) with the standard White (1980) Heteroskedasticity-Consistent Variances and Standard Errors can be proceeded to correct for bias due to non-constant variance. To ensure that the regression is not spurious, the cointegration test in which the residual of the regression using the Engle-Granger approach is also employed to prove the existence of a meaningful long-term relationship.

EMPIRICAL RESULTS

Unit Root Test and Cointegration Test

The Augmented Dickey Fuller (ADF) test was used in this study to test for integration levels. These are both t-tests and rely on rejecting the hypothesis that the series is a random walk in favour of stationarity. The ADF test for the unit roots for all variables are shown in Table 1. The null hypothesis of a unit root in the first difference with and without trend can be rejected for all variables. Thus, all variables are non-stationary and are integrated in the order of one I[1].

Value in bracket is optimal lag length, i.e. (1) means lag 1. (These are the results of trial and error whereby the variables are run through several lags ranging from one to four. The results are more significant and in accordance to the literature).

(OLS) with White Heteroskedasticity-Consistent Variances and Standard Errors and the Engle Granger (EG) Test

The results of the OLS regression using the Heteroskedastic and Standard Error Consistent White test are shown in Table 2. Based on the result we can apply it into equation 1 as follows.

$$\begin{aligned} \text{LnFDI} &= 7.51075 - 0.6128\text{EDUEX} \\ &\quad (2.36) \quad (-2.5667) \\ &+ 2.5963\text{IMPEXP} + 2.2645\text{RGDPCAP} \\ &\quad (3.0637) \quad (2.2454) \\ &+ 2.6350\text{GOVGDP} \\ &\quad (2.7718) \\ &- 0.1048\text{RESOURCE} \\ &\quad (-0.5974) \end{aligned} \qquad (2)$$

R^2= 0.8771
Adjusted R^2 = 0.8526
Durbin Watson Statistic = 0.9684

Although it was proved that all variables are non-stationary, the Engle-Granger (EG) test is employed to confirm that the regression is not spurious. The following results are obtained.

$\mu_t = 0.5099\ \mu_{t-1}$
t = (-3.26260)
Durbin Watson Statistic = 1.6710
R^2 = 0.2670

The EG 1% critical t-value is -2.6423, therefore the residuals from the regression of FDI on the various variables are I(0); that is, they are stationary. It is proved that all the independent variables in this equation have a long-term equilibrium relationship.

The P value of the ratio of real trade share per real GDP (IMPEXP) is significant at 1%. The coefficient value is 2.596 and has a positive relationship with the FDI. This finding is very much similar to the findings of many studies, (Chakrabarti, 2001; Asiedu 2002) as they also use a similar proxy. This is a very strong signal that trade openness is still a very important determinant of FDI inflow to Malaysia.

The real government consumption per real GDP (GOVGDP) is significant at 1% level with the value of 2.635. This finding is consistent with the results of similar studies done by Wheeler and Moody (1992) and Loree and Guisinger (1995), which showed a strong positive correlation between FDI and agglomeration or infrastructure quality despite each using a different proxy. All the findings above are also consistent with current complex integration strategies being pursued by MNC's worldwide, i.e. "MNC's are increasingly seeking location where they can combine their own mobile assets most efficiently with the immobile resources they need to produce goods and services for the markets they want to serve," (UNCTAD, 1998:11).This means that countries

Table 1
The ADF Test for Unit Roots

Series	Levels		1st Differences	
	Without Trend	With Trend	Without Trend	With Trend
FDI	-1.4734 [1]	-2.4281 [1]	-3.3557 [1] **	-3.3155 [1]***
RESOURCE	-1.6839 [1]	-0.6076 [1]	-3.8749 [1]*	-6.2890 [1] *
IMPEXP	-0.0618 [1]	-2.6516 [1]	-5.7610 [1] *	-5.7124 [1] *
RGDPCAP	-0.9124 [1]	-2.5863 [1]	-3.7777 [1] *	-3.7310 [1]**
EDUEX	-0.3777 [1]	-2.3834 [1]	-3.8765 [1] *	-3.6290 [1] **
GOVGDP	-0.5893 [1]	-2.8198 [1]	-6.7152 [1] *	-6.6267 [1]*

Notes: *The crirical values for this table are based on Mc Kinnon (1991)*
* *significant at 1% level*
** *significant at 5% level*
*** *significant at 10% level*

Table 2
White Heteroskedasticity-Consistent Standard Errors and Covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.51075	3.177796	2.363509	0.0262
EDUEX	-0.61277	0.238741	-2.56668	0.0166
GOVGDP	2.635008	0.950656	2.771778	0.0104
IMPEXP	2.596279	0.847438	3.063682	0.0052
RESOURCE	-0.10482	0.175468	-0.59738	0.5556
RGDPCAP	2.264485	1.008488	2.245426	0.0338

R-squared	0.87714	Mean dependent var	8.27619
Adjusted R-squared	0.852567	S.D. dependent var	0.948372
S.E. of regression	0.364146	Akaike info criterion	0.98946
Sum squared residue	3.315052	Schwarz criterion	1.267006
Log likelihood	-9.33663	F-statistic	35.69659
Durbin-Watson statistic	0.968378	Prob(F-statistic)	0

with higher levels of agglomeration are more likely to attract FDI since better quality infrastructure would allow MNC's to operate at their optimal level of efficiency.

Meanwhile, the real GDP per capita (RGDPCAP) is also significant at 1% level with the coefficient of 2.264. The result obtained from this variable is also similar to studies done by Tsai (1994) and Schneider and Frey (1985). Both studies indicated that real GDP per capita as a proxy of market size has a strong positive relationship with FDI. However, it should be noted that while market size is still a significant variable, its importance has been slowly decreasing from its former position as the most important traditional determinant of FDI. This fact is evident by the first two variables, which are ranked more important than market size, especially the variable representing the quality of infrastructure. This result is also echoed by (UNCTAD 1996; 97) which found that FDI in developing countries are slowly shifting from resource and market seeking to more (vertical) efficiency seeking.

Human capital is significant with the value of 0.6128 and negatively correlated with FDI. This phenomenon may be explained by the point made previously with regard to the predominant types of FDI in Malaysia. At present, while Malaysia is striving to enhance its technological capability through R&D, better training and other types of created assets designed to enhance its competitiveness, much of the existing FDI in Malaysia consists of labour intensive and cost seeking FDI which is especially prevalent in the manufacturing sector. While higher levels of human capital may enhance the flow of FDI into more knowledge seeking and skills intensive industries, they also increase the wage cost which in itself is a significant determinant according to Lucas (1993), and Wheeler and Mody (1992), hence the negative relationship. Fortunately, this relationship is expected to be short term in nature since Malaysia is now moving rapidly along its development path into a more knowledge intensive and value added

economy as more Malaysians are better trained and educated. With respect to cost of labour as a location-specific advantage to developing countries, Pfeffermann and Madarassy (1992) argued that as a result of new technological advances and the concomitant shift of FDI towards more capital-knowledge and skill intensive industries, the presence of a well educated pool of labour has become increasingly attractive for MNC's relative to low labour costs by themselves. This shift has intensified with the globalisation process, which has led to new strategies by MNC's to enhance their competitiveness. That is, MNC's reorganise themselves functionally so that activities such as finance, research and development (R&D), accounting, training, parts production, distribution and etc. are carried out by affiliates in locations best suited to each particular activity (UNCTAD, 1994). This means that FDI can be regarded as a means for MNC's to access factors of production, particularly created assets in order to rationalize production internationally (UNCTAD, 1998). Thus, as more inflows of knowledge and capital seeking FDI enter Malaysia, this variable is expected to shift from significant but negatively correlated, to be significant and positively correlated with FDI.

Finally, the last variable is natural resource availability (RESOURCE), but will not be discussed in detail since it is insignificant as well as the fact that natural resource seeking FDI is only a small portion of total FDI to Malaysia in the 1990s. This relationship is also consistent with the result obtained by Noorbakhsh, Paloni and Youssef (2001).

CONCLUSION AND POLICY IMPLICATIONS

This study examines the key determinants of FDI into Malaysia from 1970 to 2000 with regard to trade openness, infrastructure quality, market-size, human capital and natural resource availability. In line with several other empirical studies, the results of this study confirm that traditional market-related factors such as market size are still dominant factors shaping the distribution of FDI in Malaysia with the natural resource availability being the only insignificant variable. However, other non-traditional factors such as trade openness, agglomeration and human capital are also greatly increasing in importance, especially during this era of globalisation. This shift is also due to the complex global integration strategies adopted by MNC's, which favours the presence of sophisticated and created assets in host countries over most other determinants. It is thus crucial especially in the context of increasing competition for FDI that developing countries formulate policies that improve local infrastructure, local skills and build up their human resource capabilities (World Bank, 2000). This is necessary not only to raise the volume but also the sophistication of FDI that a country can attract. Countries that rely exclusively on low-cost low-skill labour or natural resources to attract FDI will find it difficult to induce FDI into high value added industries and may suffer slower economic growth. It is argued that given a minimum level of skills and infrastructure, low labour costs may now matter only in a handful of low technology activities, such as low-end garments, since even semiconductors have become highly automated and capital intensive. With regard to all the determinants above, globalisation has made the role of the government more important than ever in facilitating the competitiveness of its domestic economy given the central role of technology.

Future research should aim at providing a more differentiated picture, notably by identifying different types of FDI within the manufacturing sector. For instance, industry-specific characteristics, such as factor intensities and export propensity, may be referred to in order to separate efficiency-seeking FDI from market-seeking FDI in manufacturing. Such an analysis can help clarify, *inter alia*, the relevance of an open trade policy environment for developing countries that are striving for higher levels of efficiency-seeking FDI in manufacturing, like Malaysia. Among FDI policies not covered in this study, non-traditional FDI incentives such as tax holidays and tariff concessions for import of intermediate products may be particularly relevant for future research. This is valid for two reasons: the use of such incentives has proliferated (UNCTAD, 1998:

102), and globalisation may have made such incentives a more important determinant of FDI as they are less costly to implement in the short-tern (Kokko, 2002).

Although the econometric results appear robust, it remains the case that variables used for human capital, infrastructure quality, trade openness and natural resource availability are only distant proxies. Moreover as often in econometrics, it is extremely difficult to attach causal meaning to correlations among variables since omitted variables may distort the true relationship between the dependent and independent/explanatory variables. Most empirical analyses have proceeded at an aggregate level. A more disaggregated analyses, i.e. at sectoral level may yield important insights not found using aggregate methods.

END NOTES

1. Shamsudin (1994) reiterated Agarwal's finding 15 years later. "Most empirical studies support the market size hypothesis"

2. The authors use detailed data from the benchmark surveys of the US Department of Commerce for 1987 and 1982 and their focus was on policy factors as investment incentives, performance requirements and tax rates.

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