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Panel Analysis of FDI in Fast Emerging ASEAN Countries

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Abstract

This paper investigates significant determinants of foreign direct investment (FDI) in five ASEAN countries namely Indonesia, Malaysia, the Philippines, Singapore and Thailand from 1975 to 2009. It applies both individual and panel data analyses on these fast emerging countries and findings depict that the rate of economic growth and degree of openness significantly affect FDI flows in the majority of these countries. The Malaysian exchange rate directly affects FDI flows into the country while manufacturing output attracts FDI into the Philippines. Inflation rate plays a significant role on FDI flows for Thailand. The model for country specific factors indicates that different factors are more important for counties in differing stages of development. For the panel of ASEAN countries, consumer income and employment emerged as significant drivers of foreign investments. In Indonesia and the Philippines employment negatively affects investments, while tourism positively affects FDI in the Philippines and Malaysia. Other significant factors include the level of consumer income, skill and knowledge, and infrastructure development. Results from this study should provide policy makers with the latest information to attract FDI.

Keywords*: Foreign investment, Exchange rate, Economic growth, Trade openness*

1. INTRODUCTION

Foreign direct investment (FDI) is considered to be an important driver of economic growth in emerging and developing countries. The internationalization of production helps to better exploit the advantages of enterprises and countries, increase competitive pressure in international markets and stimulate technology transfer and innovative activity resulting in improved economic growth. In many developing countries, FDI is considered to be an important component of their development strategies. Policies are designed accordingly in order to attract flows of FDI. A strong motivation for this interest is the possible existence of FDI productivity determinants that would affect the entry strategy by multinational enterprise (MNE) towards entering or investing in a particular country. Essentially, FDI creates an important role in the development of an economy as well as to promote opportunities in various industries.

The purpose of this study is mainly to examine the determinants of FDI inflows in five major ASEAN countries including Malaysia, Indonesia, Thailand, Philippines and Singapore. The availability and capabilities of the technology and knowledge could provide a significant contribution to the development of growth for these domestic economies. FDI also provides an impact to the organizational and financial resources, namely capital, market demand, labor and infrastructure of individual economies. Several countries have struggled in their anticipation and encouragement of FDI which furnishes the vehicle for economic development in most Asian countries. The recent plight of Asian nations and other less developed countries provides examples of the problems faced by these countries. This can be explained by the movement of most Asian countries towards democratic government with market economies. Macroeconomic management in many of these countries has improved.

Their banking systems have been strengthened and the investment environment in many of these countries has been liberalized.

In essence, the effect of FDI has resulted in more integration among emerging and developing nations. At the same time, capital and labor markets have been linked more closely to productivity. As well, economic growth in these Asian countries has improved tremendously. Much of this improvement in the economic environment can be attributed to several multilateral agencies established since the end of World War Two to foster growth in these nations. Despite these improvements, several of the emerging and developing countries with the highest economic growth rates are facing domestic issues. Some countries in the region are losing out in term of foreign investments to others who are considered the new haven for investors. It is therefore essential that they understand this issue in order to strengthen their competitive position. Fortunately, the recent crisis has not affected them drastically relatively to the Asian crisis more than ten years ago.

From this point of view, FDI inflow could make significant contributions to these countries by providing additional equity capital, transfer of patented technologies, access to scarce managerial skills and creation of new jobs. Overseeing these contributions of FDI, a long run effect could take place which creates many externalities in the form of benefits available to the whole economy. FDI in services affects the host country's competitiveness by raising the productivity of capital and enabling the host country to attract new capital as well as reducing the flight of domestic capital abroad. Moreover, host countries also benefit from FDI which include overcoming barriers to foreign markets and securing raw material supplies at a lower cost. With such exposures, host countries could create a reinforcement of global marketing strategies of their principal exporters.

This study explores several major determinants that will affect FDI in ASEAN countries namely Malaysia, Indonesia, Thailand, Philippines and Singapore. Extensive data is used to analyze and examine the significant impact of the variables towards FDI inflows for selected ASEAN countries. Twelve variables: FDI, economic growth, manufacturing output, exchange rate, inflation rate, degree of openness, infrastructure development, telecommunication, consumer income, tourism, employment and skill and knowledge, are employed to examine and analyze the relationship. The data are collected from various sources which consist of the International Financial Statistics (IFS) of the International Monetary Fund (IMF), Global Market Information Database (GMID), United Nation Statistics Division (UNdata), Department of Statistics of each country and sources from Bloomberg. The macroeconomic data are from 1975 to 2009 while the country specific data ranges from 1980 to 2009. Valuable information for market seekers from MNEs and international firms are provided for making investment decisions or establishing physical presence abroad. These factors may affect investment returns and performances in the long term and it is vital for the survival and growth of the firms. It also assists the authorities in consideration for policies to promote FDI flows to stimulate and sustain economic growth of the country.

2. LITERATURE REVIEW

The tendency for a firm to engage in foreign production depends on a combination of various elements including ownership-specific advantages, internalization opportunities and location advantages in the target market. According to Cassidy and Andreosso-O'Callaghan (2006), the positive significant determinants of FDI flows into China were tertiary education and infrastructure. On the other hand, Chidlow *et al.* (2009) found that the main drivers for investors to invest in Poland are knowledge and market factors depending on whether these MNEs have low capacity or low input costs. Their findings confirmed that availability of labor

and resources, quality of the infrastructure and geographical factors are significant motives for investment decisions in Poland.

Artige and Nicolini (2006) showed that there is positive and statistically significant relationship between GDP and FDI inflows for three European regions which consist of Baden-Wurttemberg, Catalunya and Lombardia. According to Kolstad and Villanger (2008), FDI is attracted and stimulated in the service sector with higher Gross Domestic Product (GDP) per capita. In a different perspective, Xing (2006) stated that variables such as rising GDP could not explain short-term fluctuations of FDI inflows, in particular the downturn of outward FDI from Japan to China. According to Erdal and Tatoglu (2002), the size of domestic market is positively related to FDI inflows in the host country. As market size increases, the number of customers and opportunities for foreign investors would increase. Another study by Ali and Guo (2005) stated that China's large market and high growth rates are crucial and significant factors in stimulating FDI into the country. Their study concluded that these two determinants are key points that influence foreign investor's investment decision. According to Chidlow *et al.* (2009), market size is tested to be related to FDI inflows in Poland. It indicated that FDI inflows are influenced by market-seeking foreign investors to establish their business or investments out of the parent country.

FDI by multinational enterprises is one of the recent features of global economic development and Kang and Lee (2007) asserted that FDI inflows are considered to be one of the most important channels for economic development in most developing countries. Their study proclaimed that the significant determinants of FDI inflows include regional income, labor quality and infrastructure. Another study conducted by Mina (2007) concluded that trade openness, infrastructure development as well as institutional quality as measured by skill and knowledge are factors that encourage FDI to the Gulf Cooperation Council (GCC) countries. The study also concluded that human capital exerts a sizable negative influence on FDI inflows. A study by Russ (2007) on the endogeneity of the exchange rate as a determinant of FDI had indicated that variances in exchange rate impacted the decisions of MNEs. Artige and Nicolini (2006) studied the euro-effect on FDI for three European countries and concluded that exchange rate is an important criterion to attract foreign investors. Erdal and Tatoglu (2002) also claimed that the instability of exchange rates has negative effects on FDI inflows of Turkey.

Marial and Ngie (2009) stated that Malaysia had consistently maintained sustainable economic growth from 1980s until 1990s along with low inflation rate. The effects of low inflation rate had resulted in the economy undergoing a period of broad diversification, sustaining rapid economic growth as well as low unemployment rate. They found that low inflation is one of the factors that make Malaysia attractive to foreign investors. Kiat (2008) also confirmed that inflation has negative impact on FDI inflow in South Africa but not necessarily in developed market. The results of another study by Mercereau (2005) indicated that low inflation is associated with an increase in FDI inflows in Asian countries. Asiedu (2002) examined the determinants of FDI in Africa and concluded that low inflation rates promote FDI. The benefit of investing would fall in the event of rising inflation rate as it erodes purchasing power of consumers in the host country. Most empirical studies have found that inflation rate has a negative influence on FDI Inflows. It implies that the role of government to improvise the macroeconomic stabilizing policies is crucial in order to attract and stimulate more FDI inflows. Despite most of the studies which found inflation to be significant, Kolstad and Villanger (2008) concluded that inflation has no significant association with FDI in the service industry.

The world is rapidly moving towards an economic system based on continuous availability of information and telecommunication technology as one of the important vehicles of

transferring information. A study by Gholami *et al.*(2003) found that recent advances in telecommunication industry are important in permitting information exchange to develop as a valuable commodity. Countries that are equipped with these telecommunication technologies and systems have been rapidly moved into post-industrial, growth oriented information-based economy. Their study also concluded that the rapid expansion of world FDI is resulted from several factors including technical progress in telecommunication services and major currency realignment.

According to Mina (2007), institutional quality also positively influenced FDI inflows, as expected, reflecting the importance of this determinant in attracting FDI flows to the GCC countries. Cassidy and Andreosso-O'Callagan (2006) concluded that institutional quality proved to be significant and positive related to FDI. Their study suggested that high quality education is an extremely important determinant of inward FDI and that tertiary educated workers provide further incentives to locate in specific provinces in China. Transportation infrastructure is related to the nature of production, which requires the availability of adequate roads, railways, ports and other facilities for the purpose of operational efficiency. This infrastructure allows investors to decrease their setup costs for new local establishment (Kang and Lee, 2007). Erdal and Tatoglu (2002) suggested that foreign investors prefer to invest in a country with established infrastructure. Their study indicated that infrastructure development is positively significant in explaining the movement of FDI. A well-developed transportation system reduces production costs by reducing the costs of importing components and machinery and exporting outputs.

From the perspective of the foreign investor, the cost of labor has been highlighted by Cassidy and Andreosso-O'Callagan (2006) as an important determinant of FDI. Their study indicated that disparities in the cost of labor between and within countries are apparent in market economies. Chidlow *et al.* (2009) also suggested that low input costs and labor productivity are positively significant in explaining the FDI inflows in Poland. Bitzenis *et al.* (2009) found that labor market structure tend to be one of the primary barriers of FDI inflows in the case of Greece. In addition, Chidlow *et al.* (2009) claimed that the level of knowledge is statistically significant but the relation is negative in explaining the movement of FDI inflows in Poland. Their study assessed the number of foreign investors for whom knowledge-seeking is an important motive for establishing their business. Kolstad and Villanger (2008) found evidence of a relationship between institutional quality and FDI in transport industry. This means that the quality of knowledge in a country stimulate FDI growth and is statistically significant in explaining the changes in FDI for the transport industry.

3. DATA AND METHOD

The time series data are collected from International Financial Statistics (IFS) of the International Monetary Fund (IMF) and the Global Market Information Database (GMID). The macroeconomic fundamentals include gross domestic products (GDP), manufacturing output, exchange rate, consumer price index (CPI), total exports and total imports. Other country specific data are collected from GMID, the database of Department of Statistics for each country: Malaysia, Indonesia, Thailand, Singapore and Philippines.
The list of variables and their proxies are listed in Table 1. The changes in the variables are computed as a measure of the variables in order to avoid spurious analysis of results. Unit test results for individual countries and panel are shown in Tables 2 to 4. This study applied both ADF unit root tests as well as KPSS tests in order to check robustness of the results. All the macroeconomic and country specific time series are transformed to ensure there is no unit-root problem and that all the time series used in the tests are stationary.

Table 1: Macroeconomic and country specific variables

Variable	Measurement
Foreign Direct Investment (FDI)	$(FDI_1-FDI_0)/FDI_0$
Economic Growth (ECOG)	$(GDP_1-GDP_0)/GDP_0$
Degree of Openness (DOP)	$(TotalTrade_1-TotalTrade_0)/TotalTrade_0$
Inflation (INF)	$(CPI_1-CPI_0)/CPI_0$
Exchange rate (EX)	$(EX_1-EX_0)/EX_0$
Manufacturing Output (MO)	$(MO_1-MO_0)/MO_0$
Consumer Income (CONY)	Changes in GDP per Capita
Infrastructure (INFRA)	Changes in Merchant Shipping Fleet
Telecommunication (TELE)	Changes in Number of Mobile Phone Subscribers
Employment (EMP)	$(EMP_1-EMP_0)/EMP_0$
Tourism (TRM)	Changes in Number of Tourists Arrival
Skills & Knowledge (S&K)	Adult Literacy Rate

The two models investigated in the study include one model on macroeconomic fundamentals effects on FDI as in equation 1 (E1) below and another model on country specific factors as in equation 2 (E2).

Model 1: Macroeconomic Factors

$$FDI_{IT} = A_{I0} + B_{I1}ECOG_{IT} + B_{I2}MO_{IT} + B_{I3}EX_{IT} + B_{I4}\,INF_{IT} + B_{I5}\,DOP_{IT} + E_{IT} \quad (1)$$

Model 2: Country Specific Factors

$$FDI_{IT} = B_{I0} + A_{I1}CONY_{IT} + A_{I2}INFRA_{IT} + A_{I3}TELE_{IT} + A_{I4}EMP_{IT} + A_{I5}TRM_{IT} + A_{I6}S\&K_{IT} + \mu_{IT} \quad (2)$$

Note: i = Country
t = Time period

Table 2: Unit root test results for macroeconomic and country specific variables for Indonesia, Malaysia and Philippines

	Indonesia			Malaysia			Philippines		
	ADF Test		KPSS Test	ADF Test		KPSS Test	ADF Test		KPSS Test
	t-stats	Model (lag)	KPSS statistic	t-stats	Model (lag)	KPSS statistic	t-stats	Model (lag)	KPSS statistic
Foreign Direct Investment	-5.42***	C(1)	0.47**	-7.51***	C(0)	0.05	-8.09***	C(0)	0.50**
Economic Growth	-4.43***	C(0)	0.14	-4.16***	C(0)	0.14	-3.58**	C(6)	0.61**
Degree of Openness	-7.09***	C(0)	0.09	-3.68***	C(0)	0.41*	-3.06**	C(0)	0.43*
Inflation	-4.96***	C(0)	0.08	-2.89*	C(4)	0.27	-2.01	C(3)	0.44*
Exchange Rate	-6.23***	C(0)	0.07	-4.64***	C(0)	0.08	-3.82***	C(0)	0.16
Manufacturing Output	-4.24***	C(0)	0.27	-4.45***	C(0)	0.21	-4.61***	C(1)	0.56**
Consumer Income	-4.26***	C(0)	0.1	-4.03***	C(0)	0.07	-4.59***	C(6)	0.55**
Infrastructure	-4.54***	C(0)	0.14	-2.37	C(0)	0.2	-2.06	C(0)	0.52**
Telecommunication	-4.30***	C(0)	0.14	-2.48	C(0)	0.64**	-2.14	C(0)	0.49**
Employment	-4.48***	C(0)	0.35*	-4.24***	C(0)	0.29	-9.05***	C(0)	0.36*
Tourism	-3.55**	C(0)	0.16	-3.56**	C(0)	0.11	-4.11***	C(3)	0.16
Skill & Knowledge	-19.42***	C(0)	0.68**	-28.83***	C(0)	0.70**	-10.45***	C(1)	0.29

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

Table 3: Unit root test results for macroeconomic and country specific variables for Singapore and Thailand

	Singapore			Thailand		
	ADF Test		KPSS Test	ADF Test		KPSS Test
	t-stats	Model (lag)	KPSS statistic	t-stats	Model (lag)	KPSS statistic
Foreign Direct Investment	-5.20***	C(1)	0.39*	-5.61***	C(0)	0.13
Economic Growth	-3.28**	C(0)	0.36*	-1.79	C(1)	0.45*
Degree of Openness	-3.34**	C(0)	0.26	-3.29**	C(0)	0.35*
Inflation	-3.76***	C(0)	0.37*	-2.54	C(0)	0.37*
Exchange Rate	-3.41**	C(0)	0.08	-4.43***	C(0)	0.11
Manufacturing Output	-4.96***	C(0)	0.43*	-5.14***	C(0)	0.43*
Consumer Income	-3.38**	C(0)	0.29	-2.36	C(1)	0.35*
Infrastructure	-3.10**	C(0)	0.35*	-3.35**	C(0)	0.09
Telecommunication	-2.92*	C(0)	0.62**	-4.73***	C(0)	0.43*
Employment	-3.34**	C(0)	0.40*	-4.73***	C(0)	0.43*
Tourism	-4.75***	C(0)	0.08	-3.92**	C(3)	0.24
Skill & Knowledge	-113.16***	C(0)	0.26	-4.01***	C(2)	0.71**

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

Table 4: Panel unit root test results for macroeconomic and country specific variables (ASEAN 5)

	Levin, Lin & Chu t*	Im, Pesaran and Shin W-stat	ADF - Fisher Chi-square	PP - Fisher Chi-square
Foreign Direct Investment	-10.4342***	-10.7241***	105.174***	133.174***
Economic Growth	-4.40307***	-4.74968***	42.7490***	48.2647***
Degree of Openness	-5.58137***	-6.49135***	58.7273***	56.3754***
Inflation	-3.59466***	-5.01113***	44.4565***	45.3639***
Exchange Rate	-8.07215***	-7.53482***	69.0384***	69.2516***
Manufacturing Output	-9.73352***	-8.1602***	74.8904***	73.7684***
Consumer Income	-5.42182***	-5.40288***	47.8527***	49.7119***
Infrastructure	-3.60665***	-3.92961***	34.4137***	34.1551***
Telecommunication	-5.98231***	-4.33253***	37.3632***	38.4652***
Employment	-10.3958***	-9.33772***	83.9372***	84.6997***
Tourism	-5.23418***	-5.37222***	46.1074***	44.8416***
Skill & Knowledge	-31.7055***	-30.5481***	79.1045***	122.698***

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

4. FINDINGS

4.1 Macroeconomic fundamentals

The results for Model 1 of FDI inflows for individual countries are shown in Table 5. The findings for Indonesia indicate that degree of openness is positively statistically significant at 10 percent level. When the country's degree of openness improves, it would attract more FDI inflows to the country. Similar findings are found for the Philippines, Singapore and Thailand whereby degree of openness was found to be statistically significant in explaining and influencing the changes in FDI inflows in each country. According to Artige and Nicolini (2006), there is significant relationship between FDI and export performance which indicates that FDI has contributed to the changes in export performance. The theoretical justification for such cases can be narrated to the type of country concern. For emerging or developing countries, degree of openness can influence FDI inflows in both directions, either positively or negatively. The movements of exports in these countries can still increase in value regardless of the size or level of FDI inflow into a particular country. The rationale behind this trend in these economies is generally due to cheaper price of products and undervalued currency. Emerging countries will tend to have a lower production costs compared to those developed countries. Mina (2007) found positive and statistically significant influence of trade openness on changes in FDI in GCC countries which is reinforced by the results in this study. A country which has a more open market policy will attract and stimulate more FDI inflows as there are opportunities for larger economies of scale as well as spill-over effects.

Table 5: Model 1 - Macroeconomic individual country results

	Indonesia	Malaysia	Philippines	Singapore	Thailand
Economic Growth	-4.3444	-4.6358	-76.1347	-0.2965	-3.4307
	(0.0014)***	(0.0293)**	(0.0294)**	(0.8853)	(0.2406)
Degree of Openness	2.6222	1.9504	10.4256	2.6691	2.7690
	(0.0513)*	(0.1693)	(0.0435)**	(0.0327)**	(0.076)*
Inflation	-3.2212	4.5985	15.0304	-1.5687	8.6291
	(0.3975)	(0.1823)	(0.3165)	(0.6674)	(0.0219)**
Exchange Rate	-0.8756	-2.1076	-7.2933	0.5497	0.9948
	(0.4175)	(0.0076)***	(0.1286)	(0.7599)	(0.5227)
Manufacturing	0.6261	3.6426	48.6470	-0.0280	-0.0871
Output	(0.4545)	(0.1284)	(0.0107)**	(0.6118)	(0.7971)
Constant	0.8791	-0.1721	2.0900	-0.0632	-0.1571
	(0.0017)***	(0.3522)	(0.0752)*	(0.6188)	(0.4702)
Adjusted R^2	0.2465	0.1210	0.4124	0.0752	0.2741
F-prob	0.0687	0.1441	0.0021	0.2292	0.0210

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

According to Table 5, the only country where exchange rate is statistically significant in influencing FDI inflow is Malaysia where FDI inflows would increase when the value of its currency increase. It is also interesting to note that economic growth is found to be statistically significant for Indonesia, Malaysia and the Philippines but the estimated coefficient is not of the expected theoretical sign. The results showed negative relationship between economic growth and FDI inflows. This may be due to multinational corporations attracted by lower cost of production when economic activity of the host country is lower.

The results for Thailand indicate that Inflation is statistically significant at 5% level and is positively related to FDI inflows. Only two variables, degree of openness and inflation rates are found to be statistically significant in affecting FDI in Thailand. The estimated coefficient for inflation does not meet the expected sign and simultaneously violates the theoretical justification. Changes in inflation are generally influenced by market supply and demand of goods and services in a particular economy. Inflation causes an increase in current consumption which reflects the opportunity costs of investments and simultaneously erodes purchasing power. As a result of this, it creates uncertainties in the net returns of investment and labor. As domestic inflation increases domestic consumption, it reduces the costs of FDI.

Similarly, an increase in foreign inflation reduces the cost of domestic investment, thus, shifting investments from the foreign economy to the domestic economy. This mechanism shows that multinational corporations would tend to shift their investments as a response to changes in inflation.

The Philippines was found to be the only country where manufacturing output is found to be statistically significant in influencing FDI inflow positively. Manufacturing output has a huge impact on market behavior and is considered to be a leading indicator of economic health. An increase in manufacturing output would simultaneously increase FDI inflows into the Philippines. According to Kang and Lee (2007), a country with high manufacturing output would stimulate more FDI inflows as foreign investors and output support and serve existing domestic manufacturers. This helps to explain the theoretical justification of significant positive relationship between manufacturing output and FDI inflow in the Philippines.

In summary, degree of openness, economic growth, exchange rate, manufacturing output and inflation rates are found to be some of the macroeconomic fundamentals that drive FDI flows in emerging markets in Asia.

4.2 Country specific factors

The output for the country specific determinants of FDI inflows is shown in Table 6. The results for Indonesia indicate that the level of consumer income, infrastructure, employment and skill and knowledge are some of the country specific factors that are significant in affecting FDI flows.

The interpretation is such that lower consumer income encourages FDI flows. In addition, lower employment level also indirectly affects FDI inflows. However, any improvement in skill and knowledge in Indonesia seem to attract FDI inflows. This is in accordance with theory where both there positive relation between FDI and labour skills in many emerging countries. The results for Indonesia also indicate that Infrastructure is negatively related to FDI inflows. The result has violated the expected sign which was anticipated to be positively related to FDI inflow. According to Kang and Lee (2007), a well- developed transportation system reduces production costs; hence this will reduce the costs of importing components, machinery and exporting outputs.

Table 6: Model 2 – Country specific individual country results

	Indonesia	Malaysia	Philippines	Singapore	Thailand
Consumer Income	-32.5475	13.9188	-2.0399	3.1266	-1.5456
	(0.0393)**	(0.0156)**	(0.8467)	(0.4617)	(0.5807)
Infrastructure	-17.1671	-1.0124	-1.4826	-0.4279	0.0160
	(0.039)**	(0.6249)	(0.7868)	(0.8892)	(0.9866)
Telecommunication	0.4746	-3.0946	-0.9147	0.0921	-0.0537
	(0.3598)	(0.0147)**	(0.1924)	(0.8633)	(0.921)
Employment	-45.8721	-38.5384	-21.3104	2.1548	-6.0554
	(0.0646)*	(0.1101)	(0.0335)**	(0.7434)	(0.6554)
Tourism	-1.7914	1.1279	7.7362	0.2624	-2.5168
	(0.4393)	(0.0845)*	(0.019)**	(0.9091)	(0.201)
Skill & Knowledge	34.9189	-23.0728	-93.5421	-5.2373	1.6126
	(0.0546)*	(0.0504)*	(0.1603)	(0.5573)	(0.9086)
	-22.6649	21.5553	87.5695	4.8175	-1.0207
Constant	(0.0724)*	(0.0571)*	(0.1611)	(0.5679)	(0.9381)
Adjusted R^2	0.6804	0.2036	0.4633	-0.2751	-0.3605
F-prob	0.2211	0.2423	0.0594	0.8211	0.8715

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

Similar to Indonesia, employment is also found to be negatively related to FDI inflows in the Philippines. As employment decreases, the level of wage cost in a particular country would also be drastically affected. Inexpensive labor force is decisive in stimulating and attracting FDI inflows in a particular country. Hence this would attract more FDI inflows as some investors and foreign firms would prefer investing in a country which has a relatively low wage cost.

Findings for Malaysia indicate that consumer income is positive and statistically significant in explaining changes in FDI inflows. This finding is similar to Artige and Nicolini (2006) which found that market size is the only determinant that has a positive and significant impact and contribution towards FDI inflows across all three European regions. It can be concluded that consumer income is one of the major or crucial determinants of FDI inflows in the case of emerging or developing countries. It is normally assumed that if a country has large market demand, it can grow quickly from an economic point of view and it is concluded that the investors would be able to make the most of their investment in that country. As consumer income of a developing country increases, the number of customers and opportunities for foreign investors would also increase hence stimulating FDI inflows. It can also be concluded that the income and population of a country plays an important role in attracting foreign direct investors to a country. In such cases, the investors are lured by the prospects of huge customer or client base. The study by Ali and Guo (2005) stated that China's large market and fast growth rate are crucial and significant factors in stimulating FDI into the country. In addition, it is well observed that if the country has a high per capita income or if the citizens have reasonably good spending capabilities, then it would attract more foreign direct investors with the scope of excellent performances. This is exactly the case where investors are pouring their money into China, India, Brazil and other populated developing countries.

Telecommunication and skill and knowledge are found to be negatively significant in influencing FDI inflows in Malaysia. However the results do not meet the theoretical expected sign of the estimated coefficient. Findings explain that improvement in telecommunication and skill and knowledge are inversely related to FDI flows. The justification may arise from the increase in

costs of labour as skills improved which might deter foreign investments. Moreover, FDI flows into Malaysia have decreased in recent years with more advanced telecommunication system. According to Mina (2007), institutional quality (skill and knowledge) positively influence FDI inflows, as expected, reflecting the importance of this determinants in attracting FDI flows to the Gulf Cooperation Council (GCC) countries. Nevertheless, skill & knowledge has become a key determinant that significantly influence FDI inflows in some of the countries assessed in this study. Foreign investors who are knowledge-seeking found skill and knowledge a very important motive for establishing their business in certain locations. This means that the quality of knowledge in a country should encourage or stimulate more FDI inflows and is statistically significant in explaining the changes in FDI inflows. Mina (2007) concluded that institutional quality (skill and knowledge) are the factors that encourage FDI inflows into a country.

One major fascinating finding in the analysis is the effect of tourism arrivals on FDI. There is positive significant relation between tourism arrival and FDI inflows in Malaysia and the Philippines. Generally, an increase in the number of tourist arrivals in a country will simultaneously attract and stimulate FDI inflows. Tourism industry is considered one of the drivers of the economic development in a country. In the cases of Malaysia and the Philippines, the results imply that both countries rely more on the tourism industry to generate national income and sustain the economy. In summary, country specific factors including consumer income, employment level, tourism and skill and knowledge of these emerging countries in the ASEAN region attracted FDI inflows.

The SUR and fixed effect panel analyses output for macroeconomic and country specific determinants of FDI inflows for the five ASEAN countries is reported in Table 7. SUR results indicate that null hypothesis is rejected for degree of openness at 1% statistical significant level. It confirms that degree of openness is positively related to FDI inflow where trade improvements would lead to positive changes in FDI flows into the countries. Similar finding is obtained for the fixed effect model whereby degree of openness is found to be statistically significant in explaining changes in FDI inflows and robustness of the finding is confirmed.

Economic growth is found to be statistically significant at 1% level and is the only macroeconomic variable that is negatively related with FDI Inflow. Other than these two macroeconomic variables, the others are not found to significantly affect FDI flows. The results for country specific variables for SUR found that consumer income and employment are statistically significant in affecting FDI flows. Consumer income is positively related to FDI inflow, whereas employment is negatively significant in explaining changes in FDI. This means that increases in consumer income that increases demand for goods and services and would attract more FDI while lower employment reduces the pressure on wage rate and made it attractive to foreign investors resulting in higher levels of FDI. However, none of the country specific determinants is found to be statistically significant in explaining FDI inflow in the fixed effect model.

Table 7: SUR and panel results for 5-ASEAN countries

	SUR		Fixed Effect	
	Macroeconomic	Country Specific	Macroeconomic	Country Specific
Economic Growth	-1.1141		-3.0036	
	(0.193)		(0.0056)***	
Degree of Openness	2.0699		2.5615	
	(0.0001)***		(0.0000)***	
Inflation	0.6147		1.3401	
	(0.657)		(0.372)	
Exchange Rate	-0.3125		-0.9088	
	(0.472)		(0.136)	
Manufacturing Output	-0.0125		0.0053	
	(0.822)		(0.961)	
Consumer Income		2.6059		3.2318
		(0.0227)**		(0.126)
Infrastructure		-0.0572		-0.9797
		(0.925)		(0.352)
Telecommunication		-0.0927		-0.0703
		(0.641)		(0.852)
Employment		-5.8510		-4.2103
		(0.0200)**		(0.293)
Tourism		0.2944		-0.0941
		(0.413)		(0.898)
Skill & Knowledge		0.0609		-2.5899
		(0.617)		(0.598)
Constant			0.1256	2.3936
			(0.192)	(0.596)
Adjusted R^2	0.1264	0.1224	0.0902	-0.0691
F-prob			0.0080	0.8539

Note: Significant at 10% significance level *, 5% significance level **, 1% significance level ***.

5. SUMMARY AND CONCLUSION

This study sets out to examine specifically the key determinants of FDI inflows in five major ASEAN countries which consist of Indonesia, Malaysia, the Philippines, Singapore and Thailand. It further aims to provide implications on the changes in future FDI inflows in these countries due to changes in fundamentals and country specific factors. This study is significant in providing policy recommendations to several ASEAN countries who have struggled in their anticipation and encouragement of FDI. It should be noted that the evolution of FDI has been seen as a potential vehicle for economic development in most of these countries. The most severe example is that of the Asian countries who suffered declining foreign exchange and capital market value during the Asian financial crisis. In addition, analysts had attributed that some of the effects of the Asian financial crisis could be neutralized by the consequences of FDI inflows into those countries.

The analysis in this study concludes that the major macroeconomic determinants that are statistically significant in influencing FDI inflows are economic growth and degree of openness. Degree of openness measured by total trade of a country is the key determinant which has a

significant positive influence in attracting FDI flows into Indonesia, the Philippines, Singapore and Thailand. The finding is similar to Artige and Nicolini (2006) who also found significant relationship between FDI flows and export performance.

Economic growth is also found to be significant but in a negative way where slower growth in the economy helps to attract foreign investment into a country. This is especially so for Indonesia, Malaysia and the Philippines. This is in contrast to Erdal and Tatoglu (2002) which suggested that size of a domestic market is positively related to FDI flows into the host country. A large market size could lead to more competitive environment and thus attract more FDI inflows into a country. Moreover, the results of this study show that there is another variable which serves as a key determinant of inward FDI: inflation. It is observed that inflation is statistically significant in influencing FDI inflows in Thailand. Inflation causes an increase in current consumption which reflects the opportunity cost of investment and it erodes the purchasing power of individuals, creating uncertainties in the net returns of investment. Another variable which was found to be positively significant is manufacturing output but only in the Philippines.

For the set of country specific determinants, consumer income and employment are found to be the major determinants of FDI flows into Indonesia, Malaysia and the Philippines. Other determinants which include employment and tourism were found to be statistically significant in explaining the movements of FDI inflows for the Philippines, Indonesia and Malaysia.

In summary, it can be observed that the analysis depends on the sample of data for each model or country and the effectiveness of data series. Furthermore, these country specific factors may produce contrary effects which could create difficulties in establishing robust results. Fortunately, the empirical results that relate to macroeconomic determinants and models are robust. Exploring these determinants is the subject for future research and extension this paper to another level. Empirical effort should be implemented for future studies by increasing the length of the data series and theoretical modelling in order to obtain significant empirical findings and robust results. As is standard in the literature, the choice of variables studied was constrained by the availability of data series. Unfortunately, data series on some important factors such as government and trade policies, tax and other legislations are not readily available for most of the ASEAN countries. The accessibility and availability of data might be the most crucial factor in limiting the set of country specific variables of this study and future studies should address this issue satisfactorily.

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