DOES AFTA AND CHINA'S ENTRY INTO WTO AFFECT FDI IN ASEAN COUNTRIES?

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ABSTRACT

Foreign direct investment (FDI) plays an important role in the rapid economic development of the newly industrializing and developing economies of Southeast Asia. In terms of the regions attractiveness, ASEAN region is a leading recipient of FDI flows in the developing world, with five ASEAN countries in the top 20 developing-countries recipients of long-term global capital flows from 1997 to 1998. While the creation of AFTA may help FDI inflows to ASEAN countries, China's entry into World Trade Organization (WTO) will be the opposite and has caused a great deal of worry to ASEAN countries. The objective of this paper is to empirically determine the effect of ASEAN Free Trade Area (AFTA) and China's entry into WTO on the inflows of FDI into ASEAN countries. To achieve the objectives, Seemingly Unrelated Regression (SUR) method was used to estimate the FDI equation. In general, the results indicate that the establishment of AFTA had a positive effect on FDI inflows to ASEAN countries while China's entry into WTO is the opposite.

Keywords: Foreign Direct Investment, AFTA, WTO, Seemingly Unrelated Regression (SUR)

INTRODUCTION

Foreign direct investment (FDI) plays an important role in the rapid economic development of the newly industrializing and developing economies of Southeast Asia. Among the components of resource flows to the ASEAN countries, FDI constitutes a considerable share, indicating the importance of FDI as a major source of finance for economic development. Between 1990 and 1997, FDI represented an annual average of 40% of the net resource flows to the ASEAN countries, with Malaysia, Myanmar and Vietnam having more than 50% FDI composition (United Nations, 2001a). A high percentage of FDI to net private capital flows in the 1990s is almost the norm for many developing countries, and this is true for ASEAN. This suggests the increasing importance of net private capital flows, particularly FDI, to official flows for development finance.

The ASEAN region is a leading recipient of FDI flows in the developing world, with five ASEAN countries in the top 20 developing-countries recipients of long-term global capital flows from 1997 to 1998. Between 1993 and 1998, ASEAN received about 17.4% of the US$760 billion in cumulative global net FDI flows to developing countries. Over the same period, ASEAN received an annual average of US$22 billion in net FDI flows, compared with an annual average of US$7.8 billion in the period between 1986 and 1991. FDI flows in ASEAN increased on average by about 14% annually from 1996 to 1998, while FDI stock in ASEAN grew tenfold from US$23.8 billion in 1980 to US$233.8 billion in 1998 (United Nations, 2001b).

Despite the region's successes in attracting sizeable FDI flows, the countries in the region continue to undertake collective as well as individual measures to further liberalize their investment regimes and to provide competitive and attractive investment environments. Further policy measures have been introduced to attract greater FDI flows as a means to helping the countries recover from the economic crisis that beset the region in 1997–1998.

For instance, Indonesia offers qualified investors 100% foreign-equity ownership in wholesale and retail trading companies, in addition to 100% foreign-equity ownership in all areas of the manufacturing sector. Indonesia has reduced the processing time required for the approval of investments of less than US$100 million to 10 working days. Listed Indonesian banks are now open to 100% foreign-equity ownership.

Similarly, Malaysia offers 100% foreign-equity ownership in the manufacturing sector, with no export conditions imposed on new investments, expansions and diversifications. With limited exceptions, foreigners can also own land in Malaysia. Meanwhile, the Philippines has opened its retail and distribution sectors to foreign equity, and allowed foreign companies to compete in the domestic private construction sector.

Singapore has reduced business costs significantly as part of a cost-reduction package amounting to savings of US$10 billion, in addition to extending a 30% corporate investment tax allowance on a liberal basis to industrial projects and to selective service industries. These activities span manufacturing, engineering and technical services and computer-related services. One hundred percent foreign-equity ownership for manufacturing projects regardless of location is now also allowed by Thailand. In addition, agricultural projects that export 80% of sales receive import-duty exemptions on machinery regardless of location.

In addition to these individual actions, the member economies are collectively promoting ASEAN as a single investment area. Regional cooperation will

facilitate more cost-effective industrial and production activities in ASEAN, providing firms with greater synergy and competitive edge in servicing both global and regional markets. The major ASEAN economic integration schemes include the ASEAN Investment Area (AIA), ASEAN Free Trade Area (AFTA) and the ASEAN Industrial Cooperation (AICO) scheme.

While the creation of AFTA, which creates a free trade area with a market of half a billion population and thus are supposed to attract foreign investors, may help FDI inflows to ASEAN countries, China's entry into World Trade Organization (WTO) will be the opposite and has caused a great deal of worry to ASEAN countries. During the 1980s and 1990s, Southeast Asia benefited from the wave of outsourcing that companies from the developed world engage in. But, anecdotal evidence indicates that, now, much of that investment is being wound down in Southeast Asia and transferred to China due to its cheaper labor cost combine with huge domestic market. Hence, the objective of this paper is to empirically analyze the impact of AFTA and China's entry into WTO on FDI inflows to selected ASEAN countries.

The rest of the paper is organized as follows. The next topic provides a background on AFTA and China's entry into WTO follows by a review on the existing literature on determinants of FDI. Next is an explaination on the econometric model and the data used follows by the empirical results and lastly conclusion of the article.

AFTA AND CHINA'S ENTRY INTO WTO

AFTA was established in 1992 with the prime objective of increasing ASEAN region's competitive advantage as a production base geared for the world market. A vital step in this direction is the liberalization of trade through the elimination of tariffs and non-tariffs barriers among the ASEAN members. AFTA creates a free trade area with a market of half a billion population. As such, AFTA are supposed to attract foreign investors who like big, integrated, and efficient compared to small, scattered, and inefficient markets.

On the other hand, China's entry into WTO caused a great fear in Southeast Asia. Investment has already dropped sharply from the heady levels of the early and mid-1990s. Yet ASEAN projects that at least another 10% of the foreign investment still destined for the region will be diverted to China. Cheap as labor costs are in Southeast Asia, they are even cheaper in China.

In a study released in late 2000, the ASEAN Secretariat fretted over the future of FDI in the region. With a huge and dynamic market, arguably, China commands

a distinct advantage over ASEAN. The liberalization of her market is bound to further enhance investor confidence and lower the cost of doing business in the country. In contrast, ASEAN is a regional grouping with diverse members, cultures and economic systems.

According to United Nations (2001b), FDI inflows into China rose by 12% during the first few months of 2001 ($11 billion), compared to the corresponding period in 2000. It is noteworthy that tax contributions by foreign affiliates accounted for 18% of the country's total corporate tax revenues in 2000 ($27 billion) harvesting some of the benefits created by some $15 billion of annual average FDI inflows during the first half of the 1990s. It is also noteworthy that the portfolio of FDI in China has been broadening over the past years. In its effort to become a member of WTO, China is considering to adopt a number of new policy measures relating to FDI. China is also in the process of formulating policies to encourage cross-border merger and acquisitions (M & As). This is different with FDI inflows into ASEAN-10 remaining below the pre-crisis level. The sub-region's share in total FDI in developing Asia continued to shrink, from over 30% in the mid-1990s to 10% in 2000. This was largely due to significant divestment in Indonesia since the onset of the financial crisis.

REVIEW OF LITERATURE

Theories of FDI

The neoclassical theory of capital movement or foreign investment is part of the theory of international factor movements. Based on the Hecksher-Ohlin-Samuelson (HOS) model, international movements of factors of production, including foreign investment, are determined by the different proportions of the primary production inputs available in different countries. International capital movement implies a flow of investment funds from countries where capital is relatively abundant to countries where capital is relatively scarce. Effectively, capital moves from countries with low marginal productivity of capital to countries with high marginal productivity of capital (Bos, Sanders, & Secchi, 1974). Such international investment (or capital movement) may benefit both the investing and host countries. The host country may benefit from investment to the extent that the productivity of the investment, as reflected in the income created, exceeds what foreign investors take out of the host country in the form of profit and interest.

Hymer (1960) pioneered the explanation of FDI using Industrial Organization theory. He pointed out that the movement of capital associated with FDI is not a response to higher interest rates in "host" countries but takes place in order to

finance international operations. His explanation of why firms move abroad and establish international production is based on a theory of the firm and industrial organization. He argued that there are two major reasons for firms to control their enterprises in a foreign country; to remove competition between enterprises established in more than one country and to exploit advantages in particular activities.

Location theory places emphasis on country-specific characteristics. It explains FDI activities in terms of relative economic condition in source and host countries, and considers locations in which FDI activities operate. This approach includes two subdivisions – "input-oriented" and "output oriented". Input-oriented factors are associated with supply variables such as relative costs of inputs including labor, raw materials, energy and capital. Output-oriented factors focus primarily on the determinants of market demand (Santiago, 1987, p. 318). These include the population size, income per capita, and the openness of the markets in host countries. The country-specific factors not only determine where Multinational corporations (MNCs) make direct investment, but can also be utilized to account for the different types of FDI such as domestic-market-oriented investment and export-oriented-investment.

The third school of FDI theories is referred to variously as the transaction cost or internalization approach. Major advocates in this school are Vernon (1966), Caves (1982), Rugman (1981), Buckley and Casson (1985), and Hennart (1982). This approach interprets the FDI activities of MNCs as a response to market imperfection, which causes increased transaction costs. Applying the transaction cost theory proposed by Williamson (1973), this approach explains why the firm by internalizing economic activities may provide more efficient outcomes than the market in minimizing transaction costs. Through FDI, two types of market imperfection may be internalized. The first one is structural (or institutional) market imperfection associated with regulatory aspects such as tariffs or subsidies, foreign exchange controls, import quotas, income taxes, restrictions on profit repatriation and other restraints. MNCs tend to internalize this type of market imperfections for a rent-seeking purpose. The other type is market failure imperfections associated with externalities, public goods and economies of scale.

The eclectic theory of international production developed by Dunning (1977, 1981, 1988), combines the industrial organization approach with both the location theory and internalization theory to explain FDI and international production activities. Dunning sees three conditions as indispensable for FDI. First, a firm must possess net ownership advantages over rival firms in the host country's market. Second, it must be more profitable for the firm to maintain these advantages internally, rather than to sell or lease them to foreign firms. Finally, the firm must believe that its advantages can be better exploited by using

location-specific factors such as (labor and market) in the host countries than by simply exporting to foreign markets (Santiago, 1987). Since the eclectic theory of international production encompasses complementary aspects of each of the industrial organization approach, internalization theory and location theory, it provides a more comprehensive explanation of the nature and characteristics of FDI initiated by a MNC.

Empirical Study on FDI

Most of the empirical analyses on the determinants of FDI use cross country regression to identify country characteristics such as market size, corporate tax, openness and infrastructure development that attract or deter FDI. Table 1 presents six variables that have been widely used in the literature in influencing FDI (Chakrabarti, 2001; Aseidu, 2002). Clearly the results of these studies are conflicting. The objective of this paper is not to focus on the conflicting results but to use them as a control in examining the effect of AFTA and China's entry into WTO to inflows of FDI in ASEAN countries.

TABLE 1
EFFECT OF SELECTED VARIABLES ON FOREIGN DIRECT INVESTMENT

Determinants of FDI	Positive	Negative	Insignificant
1. Market size	Bandera &White (1968) Schmitz & Bieri (1975) Root & Ahmed (1979) Kravis & Lipsey (1982) Nigh (1985) Schneider & Frey (1985) Culem (1988) Wheeler & Mody (1992) Sader (1993) Tsai (1994) Shamsuddin (1994) Pistoresi (2000)		Loree & Guisinger (1995) Wei (2000)
2. Openness	Kravis & Lipsey (1982) Culem (1988) Gastanaga, Nugent, & Pashamova (1998) Edwards (1990) Pistoresi (2000)		Wheeler & Mody (1992)

(Continued on next page)

TABLE 1 – *(Continued)*

Determinants of FDI	Positive	Negative	Insignificant
3. Taxes and Tariffs		Hartman (1984) Loree & Guisinger (1995)	Root & Ahmed (1979) Wheeler & Mody (1992) Lipsey (1999)
4. Infrastructure quality	Wheeler & Mody (1992) Kumar (1994) Loree & Guisinger (1995)		
5. Exchange rate	Edwards (1990) Culem (1988)	Caves (1982)	Sader (1993) Tuman & Emmert (1999)
6. Labor cost	Caves (1982) Wheeler & Mody (1992)	Schneider & Frey (1985) Culem (1988) Shamsuddin (1994) Pistoresi (2000)	Sader (1993) Tsai (1994) Loree & Guisinger (1995) Lipsey (1999)

To review the literature on empirical study on the determinants of FDI, we will review variables that were usually included as the explanatory variables.

Market Size

Market size has, by far, been the single most widely accepted significant determinant of FDI flows. The market size hypothesis upholds that a large market is necessary for efficient utilization of resources and exploitation of economies of scale: as the market size grows to some critical value, FDI will start to increase thereafter with its further expansion (Scaperlanda & Mauer, 1969).

Schmitz and Bieri (1972) in their analyses of a single equation model using aggregate data on US direct investment in the European Economic Community (EEC) over the period 1952–1966 found market size to be an important determinant of FDI. Similarly, Root and Ahmed (1979) in their econometric analysis of a single equation model employing aggregate data on 58 developing economies over the period 1966–1970 demonstrated that per capita gross national product (GNP) to be the most dominant variable in determining per capita FDI. This result is further supported by Nigh (1985) in an econometric analysis using pooled aggregate data on US manufacturing investment in 24 countries over the period 1954–1975. He found per capita gross domestic product (GDP) of the country to be an important factor determining FDI. Furthermore, Kravis and

Lipsey (1982) observed a significantly positive impact of the host country's market size on the location decision of US multinationals in the 1960s. Schneider and Frey (1985), conclude that real per capita GNP is the most significant determinant of per capita FDI. Sader (1993), Tsai (1994), Shamsuddin (1994), and Pistoresi (2000) also draw similar conclusions. Wheeler and Mody (1992) demonstrate that market size as determinants of multinational investor response plays even more significant role in the developing economies than in the industrial economies. On the other hand, Loree and Guisinger (1995) and Wei (2000) found an insignificant relationship between GDP and FDI. In their study on the determinants of US direct investments abroad, Loree and Guisinger (1995) attributed this insignificant result due to the segmentation by market orientation of FDI flows in their study.

Openness of the Host Country

Most evidence suggests that openness (measured mostly by the ratio of exports plus imports to GDP) positively influences FDI. The maintained hypothesis is, given that most investment projects are directed towards the tradable sector, a country's degree of openness to international trade should be a relevant factor in the decision. Kravis and Lipsey (1982), Culem (1988), Edwards (1990), and Pistoresi (2000) reported a strong positive effect of openness on FDI. Wheeler and Mody (1992) observed strong support for the hypothesis in the manufacturing sector but a weak negative link in the electronics sector.

Singh and Jun (1995), and Balasubramanyam et al. (1996) suggested that foreign investors prefer countries with a liberal trade regime. Most of the countries considered have signed free trade agreements with the European Union (EU) and adopted the international standard obligations required for WTO membership. The degree of openness of the host economies is measured by the ratio of bilateral trade with EU to GDP.

Other Variables

Edwards (1990) reported a significant positive effect of the exchange rate on FDI. Sader (1993) and Tuman and Emmert (1999) observed that the exchange rate has an insignificant effect on FDI in a share regression but a significantly negative in a per capita regression.

Aliber (1970) proposes a currency preference theory based on a distinction between hard and soft currencies. He argues that a multinational firm in a hard currency area is able to borrow at lower rates in a soft currency country than local firms are, based on reputation effects. We would expect, therefore, that FDI flows from hard to soft currency areas. A broader and closely related consideration is

the general state of the openness of the host country's economy. If the host country is relatively closed on the current account, incentives are created for FDI as a means of circumventing the barriers to trade. On the other hand, a relatively closed capital account (such as tight restrictions on foreign ownership) may make FDI difficult and discourage foreign investment. Much empirical work has been carried out in this general area of FDI and openness.

Tallman (1988) study on economic determinants of FDI in developed economies found that inward investment was positively related to exchange rate, industry specific growth and domestic investment of the host countries. Other literature examining the determinant factors of FDI inflow to developing economies such as studies undertaken by Klein and Rosengern (1994), Froot and Stein (1991), and Goldberg and Kolstad (1995) found that strong GDP growth and exchange rates of the host country are significant variables which helped explain the trend of foreign capital inflow into countries such as Singapore, Thailand, Myanmar, Malaysia and Indonesia. Culem (1988) studied all bilateral flows of FDI between six middle-income countries in the Asian region and found that host country market size and currency value are important determinants of FDI.

The literature remains fairly inconclusive as to whether FDI may be sensitive to tax incentives. Hartman (1984) and Loree and Guisinger (1995) observed that host country corporate taxes (corporate and income) have a significant negative effect on FDI flows. On the other hand, Root and Ahmed (1979) and Wheeler and Mody (1992) concluded that tax does not have significant effect on FDI.

We conclude from our discussion of theories and empirical work on the determinants of FDI by listing the variables that most influence FDI on the basis of the literature reviewed: market size, measures of openness such as the ratio of trade to GDP, the host country exchange rate, the ratio of government consumption to GDP, infrastructure development, corporate tax and inflation rate.

METHODOLOGY

Our method involved estimation of the following reduced-form equation.

$$Y = \beta_0 + \beta_1 X + \beta_3 Z + \varepsilon \tag{1}$$

Y represents the ratio of net FDI flows to GDP. X represents the set of explanatory variables that are significant determinants of FDI and are included in most studies of determinants of FDI. Z represents dummy variables that are used

to determine the impact of AFTA, and China's entry into WTO on FDI inflows to ASEAN countries.

Seemingly Unrelated Regression (SUR) method of estimation was employed to estimate the above model. The final equation to be estimated is as follows:

$$FDI_{it} = \beta_0 + \beta_1 RGDP_{it} + \beta_2 OPEN_{it} + \beta_3 CTAX_{it} + \beta_4 INFRA_{it} + \beta_5 INF_{it} + \beta_6 GC_{it} + \beta_7 ER + DAFTA_{92} + DWTO_{99} + DCRISIS_{97} + u_{it}$$

$$(2)$$

As is standard in the literature, the dependent variable FDI is the ratio of net FDI flows to GDP measured by 100*(FDI/GDP), where * denotes multiplication. RGDP is the Real GDP per capita which represents market size of the host country. OPEN represents trade openness of the host country measured by the ratio of trade (import + export) to GDP. CTAX represents corporate tax measured by ratio of taxes on income, profits and capital gains to current revenue. INFRA represents infrastructure development measured by telephone per 1,000 populations. INF represent inflation rate. GC represent government consumption measured by (Government Consumption/GDP) *100. ER is the exchange rate of the host countries currency measured by foreign currency per domestic currency. Hence, increase (decrease) in ER indicates appreciation (depreciation) of domestic currency. DAFTA is a dummy variable to determine the impact of AFTA on FDI inflows to ASEAN countries (DAFTA = 1, if observation in year 1993 to 2003 and DAFTA = 0, if observation in year 1976 to 1992). DWTO is a dummy variable to determine the impact of China's entry into WTO on FDI inflows to ASEAN countries (DWTO = 1, if observation in year 2000 to 2003 and DWTO = 0, if observation in year 1976 to 1999). DCRISIS is a dummy variable to control for the effect of economic crisis on FDI inflows in ASEAN countries.

The market size hypothesis upholds that a large market is necessary for efficient utilization of resources and exploitation of economies of scale: as the market size grows to some critical value, FDI will start to increase thereafter with its further expansion (Scaperlanda & Mauer, 1969). Schneider and Frey (1985) stated that real per capita GNP is the most significant determinants of per capita FDI. Some studies have used absolute GDP as an alternative measure. The absolute GDP is relatively poor indicator of market potential for the product of foreign investors particularly in many developing economies, since it reflects size of the population rather than income. To avoid statistical problem, market size has been measured in terms of GDP per capita and population, considered as proxies for actual demand and absolute market size, respectively. The expected sign is positive for both variables. In this study we use RGDP per capita as a proxy for market size in each of the five ASEAN countries.

Good infrastructure increases the productivity of investments and therefore stimulates FDI flows. As is standard in the literature, we use the number of telephones per 1,000 populations to measure infrastructure development. A good measure of infrastructure development should take into account both the availability and reliability of infrastructure. Clearly, infrastructure is of little use if it is not reliable. Hence, one would expect infrastructure reliability (e.g. how often the phone lines are down) to be more important to foreign investors than infrastructure availability (the number of telephones in a country). Since data on the reliability of telecommunication are not available, we use telephones per 1,000 population to measure infrastructure development, albeit imperfectly.

In the literature, the ratio of trade (imports + exports) to GDP is often used as a measure of openness of an economy. This ratio is also often interpreted as a measure of trade restrictions. Multinational firms engaged in export-oriented investments may prefer to locate in a more open economy since increased imperfections that accompany trade protection generally imply higher transaction costs associated with exporting. Therefore, we hypothesize a positive relationship between openness and FDI.

Past studies observed that host country corporate taxes (corporate and income) have a significant negative effect on FDI flows. Other studies have concluded that taxes do not have a significant effect on FDI. Swenson (1994) reported a positive correlation between taxes and FDI. In this study, we will use corporate taxes measured by taxes on income, profits and capital gains as a percentage of current revenue. It is hypothesized that tax has a negative relationship with FDI.

The exchange rate is often cited as a critical determinant of FDI. The currency area hypothesis runs as follows, the weaker the currency of a country the less likely it is that foreign firms will invest in that location. The crucial assumption of this theory is the existence of a bias in the capital market, the bias is assumed to arise because an income stream from a country with a weak currency is associated with an exchange rate risk and, therefore, an income stream is capitalized at a higher rate by the market when it is owned by a weak currency firm (Aliber, 1970). A more elaborate theory based on capital market imperfections with similar implications was developed by Froot and Stein (1991). Caves (1982), Froot and Stein (1991), Blonigen (1997), and Blonigen and Feenstra (1997) observed strong negative correlations between a country's exchange rate (foreign currency per domestic currency) and FDI.

Inflation rates have been used to capture the stability of macroeconomic policy by Schneider and Frey (1985) and Bajo-Rubio and Sosvilla-Rivero (1994). Both study found that inflation and FDI flows are negatively related. Government Consumption is measured by 100*(Government Consumption/GDP), where *

denotes multiplication. Smaller government reflects a country's positive stance towards private enterprise and hence is argued to foster FDI (Edwards, 1990).

Data

The data used for this study involves five ASEAN countries for the year 1976 to 2003 (28 years). The data used in this paper are extracted from World Development Report, ASEAN Selected Statistics, World Tables, The World Bank, Key Indicators of Developing Asian and the Pacific Countries, Government Finance Statistics Yearbook, International Financial Statistics IMF, Industrial Statistic Yearbook, and Statistical Yearbook for Asia and the Pacific. Data on FDI, trade openness, inflation rate, exchange rate and government consumption are collected from International Financial Statistics IMF, while data for RGDP per capita are collected from Key Indicators of Developing Asian and the Pacific Countries, Asian Development Bank. Data for Corporate taxes are collected from Government Finance Statistics Yearbook, International Monetary Fund. Data for infrastructure development measured by telephones per thousand populations are collected from Statistical Yearbook for Asia and the Pacific, United Nations. Summary statistics of the variables are reported in Table 2.

TABLE 2
SUMMARY STATISTICS FOR SAMPLE DATA (AVERAGE VALUES)

Variable	Country				
	Indonesia	Malaysia	Philippine	Singapore	Thailand
FDI per GDP (%)	0.14	10.70	6.30	13.70	4.70
Trade openness	1.30	2.10	1.60	4.40	1.40
Tax rate (%)	58.56	35.45	28.67	28.49	23.97
Government expenditure per GDP (%)	9.90	16.70	10.40	10.30	9.40
Telephone per thousand population	9.56	120.70	13.96	470.90	28.04
Inflation rate (%)	11.69	3.67	11.49	2.53	5.62
Real GDP per capita	450.7	1808.2	444.98	13278	921.25

RESULTS AND DISCUSSIONS

For model estimation, ordinary least squares (OLS) method was first used to check the goodness of fit and whether OLS assumptions were not violated. In all cases, the R^2 values suggest a reasonable overall fit. All the Box-Pierce statistics were insignificant indicating that the error terms were non-autocorrelated in

single equations (Greene, 1997, p. 595). Since time-series data were used, heteroskedasticity was not considered a serious problem. For multicollinearity, auxiliary R^2 and condition indices were computed for each regressor on the remaining regressors and the constant term. All the auxiliary R^2 and condition numbers (of < 20) were low indicating that collinearity among the various explanatory variables was not a significant problem (Greene, 1997, p. 422). There is a possibility that feedback causality exists between FDI and GDP due to the interdependence between these two variables. However, the F statistic for testing the null hypothesis that RGDP is exogenous cannot be rejected.

The SUR method was later used to estimate the FDI equations, as contemporaneous correlation of the disturbances across FDI equations could not be ruled out. SUR parameter estimates proved superior since the method is cognizant of this contemporaneous correlation. To further ascertain that SUR method was more appropriate, Breusch-Pagan LM tests were carried out to check for cross correlation across equations. The results indicated that the null hypothesis of diagonal covariance matrix could not be rejected at the 5% level. In fact, when the estimates of OLS and SUR models were compared, it was observed that SUR estimates were more efficient as they produced lower standard errors although the significance and impacts of estimated coefficients were similar in both OLS and SUR models.

Table 3 presents the results of estimating the model using SUR. The results reported in column two indicate that a large share of the variation in FDI rate in Malaysia can be explained by the explanatory variables. As a group, these factors account for about 83% of the variability in FDI/GDP.

The results show that FDI /GDP increases with the RGDP per capita, degree of openness, and infrastructure. The results are consistent with previous studies. The results also show that the coefficient of CTAX is statistically significant and has a negative sign. The results indicate that if RGDP per capita in the host country increase by 1USD, FDI per GDP will increase by 0.0023USD and if trade openness of the host country increase by 1% it will increase FDI per capita by 0.72USD. Dummy variable for AFTA show a significant positive effect on FDI meaning that Malaysia benefited from the establishment of AFTA by increasing the level of FDI compared with before AFTA. On the other hand, the coefficients of INF, GC, ER, DWTO and DCRISIS are not significant even at the 10% level of confidence.

TABLE 3
SEEMINGLY UNRELATED REGRESSION ESTIMATES OF THE FDI EQUATION

Variable	Country				
	Malaysia	Singapore	Thailand	Philippines	Indonesia
Constant	0.1981	0.2621**	0.1813***	–0.1201***	–0.2181
	(0.531)	(2.012)	(2.904)	(–8.328)	(–0.097)
RGDP	0.0023**	0.00021***	0.00020***	0.00019***	0.14E-05**
	(2.152)	(2.682)	(3.446)	(3.210)	(2.128)
OPEN	0.7164**	0.2103***	0.2345**	0.1201	0.8600***
	(2.127)	(6.911)	(2.203)	(0.532)	(11.356)
CTAX	–0.0032**	0.0018	–0.0069***	–0.2135***	–0.0041***
	(–2.087)	(1.398)	(–4.972)	(–8.352)	(–5.126)
INFRA	0.0811***	0.1398***	0.0035	0.0031***	0.0004***
	(4.831)	(8.122)	(0.501)	(5.213)	(4.381)
INF	0.0094	0.00001	–0.00008	–0.00641	0.22E-05
	(1.089)	(0.532)	(–0.654)	(–0.836)	(0.202)
GC	0.19E-09	–0.81E-08***	0.42E-08	–0.13E-08***	–0.63E-09***
	(1.278)	(–2.387)	(1.523)	(–6.456)	(–7.284)
ER	–0.0766	–1.4844***	–0.0889*	–6.1285***	–9.3132***
	(–1.398)	(–4.653)	(–2.010)	(–4.365)	(–5.239)
DAFTA	0.1276***	–0.1341***	0.0268*	0.0168**	–10.872
	(3.617)	(–4.997)	(2.012)	(2.298)	(–1.734)
DWTO	–0.2857	–0.0221**	–0.0356***	–0.0188**	0.0045***
	(––0.633)	(–2.674)	(–6.013)	(–2.112)	(–3.824)
DCRISIS	0.2365	–0.1031**	0.0036	–0.0019***	–0.0033***
	(1.598)	(–2.387)	(1.489)	(–3.763)	(–5.859)
R-square	0.83	0.91	0.87	0.71	0.70
Adj R-square	0.69	0.83	0.80	0.61	0.64
F statistics	6.12	12.78	8.96	12.06	11.73
Box-Pierce	1.13	0.91	1.23	0.86	1.22

Note: t-statistics are in parentheses
CTAX = Corporate tax   GC = Government consumption
DAFTA = Dummy variable for AFTA   INFRA = Infrastructure development
DCRISIS = Dummy variable for period of financial crisis   OPEN = Openness
DWTO = Dummy variable for China's entry into WTO   RGDP = Real GDP per capita
ER = Exchange rate
* Significance at the 0.10 level ** Significant at the 0.05 level *** Significant at the 0.01 level

The result reported in column three indicates that a large share of the variation in FDI rate in Singapore can be explained by the explanatory variables. As a group, R-square shows that 91% of the independent variables explain FDI/GDP. The results indicate that the coefficients of RGDP, OPEN, and INFRA are all positive and significant at the 5% level of confidence. On the other hand, the coefficients of GC, ER, DAFTA, DWTO, and DCRISIS are all negatively significant at the 5% level of confidence. There are two variables that do not have significant effect on FDI in Singapore namely, CTAX and INF. There are four variables that have a large effect on FDI. If trade openness in Singapore increased by 1%,

FDI per GDP will increase by 0.21USD and if ER in Singapore increased by a point, FDI per GDP will decrease by 1.48USD. The dummy variable, DWTO, is also significantly negative indicating that China's entry into WTO has a negative effect on foreign direct investment in Singapore. The dummy variable DCRISIS is significantly negative indicating that during the Financial Economic Crisis in 1997 and 1998 FDI in Singapore decreases. The dummy variable DAFTA is significant but have a negative sign. Perhaps, with the establishment of AFTA, foreign investors might prefer going to other ASEAN countries which have a lower labor cost but at the same time can access to the large ASEAN market.

The results reported in column four show that a large share of the variation in FDI rate in Thailand can be explained by the explanatory variables. As a group, these factors account for about 87% of the variability in FDI/GDP. The results show that FDI/GDP increases with the RGDP per capita and the degree of openness but decreases with exchange rate and corporate tax rate. If RGDP per capita increases by 1USD, FDI per GDP will increase by 0.0002USD. If CTAX in Thailand increase by 1%, FDI per GDP capita will decrease by 0.007USD and if ER in Thailand increases by a point, FDI will decrease by 0.09USD. Dummy variable for WTO is a significantly negative. This indicates that China's entry into WTO will have the effect of decreasing FDI flows to Thailand. However, dummy variable for AFTA is a significantly positive indicating that AFTA has a positive impact on FDI inflows to Thailand. The variables that do not have significant effect on FDI in Thailand are INFRA, INF, GC and DCRISIS.

Column five shows that a large share of the variation in FDI rate in the Philippines can be explained by the independent variables. As a group, these factors account for about 71% of the variability in FDI. The results indicate that FDI/GDP increases with increase in RGDP per capita and infrastructure development but decreases with CTAX, GC, and ER. The results show that if INFRA increase by a unit, FDI will increase by 0.003USD. All the dummy variables DAFTA, DWTO and DCRISIS are significant at the 5% level of confidence. These results indicate that with the establishment of AFTA, FDI inflows to the Philippines increases while FDI inflows to Philippines decreases with China's entry into WTO. Financial crisis in 1997 and 1998 also have a detrimental effect on FDI in Philippines. There are two variables that do not have significant effect on FDI in Philippines namely, OPEN and INF.

For Indonesia, results in column six indicate that the explanatory variables account for about 70% of the variability in FDI/GDP. The coefficient of RGDP, OPEN, CTAX, INFRA, GC, ER, DWTO and DCRISIS are significant at the 1% level of confidence. The results show that FDI/GDP increases with RGDP per capita, OPEN and INFRA but decreases with CTAX, GC and ER. If OPEN in Indonesia increases by 1%, FDI per GDP will increase by 0.86USD. If CTAX

increase by 1%, FDI per GDP will decrease by 0.004USD. In addition, if INFRA increase by a unit FDI will increase by 0.0004USD. The dummy variables are also significant and have a correct sign as expected. DWTO and DCRISIS are significantly negative indicating that China's entry into WTO will be detrimental to FDI in Indonesia and the financial economic crisis also has a negative effect on FDI in Indonesia.

In general, from the above results, RGDP per capita as a proxy for market size in the host country is positively significant in all of the five samples country. This support the hypothesis that a large market is attractive for FDI since it is necessary for efficient utilization of resources and exploitation of economies of scale (Scaperlanda & Mauer 1969). Similarly, OPEN variable is positively significant in four out of the five-sample country. This support the argument that multinational firms engaged in export oriented investments may prefer to locate in a more open economy since increased imperfections that accompany trade protection generally imply higher transaction costs associated with exporting.

On the other hand, CTAX in four ASEAN countries namely, Malaysia, Thailand, Philippines and Indonesia have a significantly negative effect on FDI. INFRA also has significant effect on FDI in Malaysia, Singapore, the Philippines and Indonesia but it is not significant in Thailand. This is not surprising since good infrastructure increases the productivity of investments and therefore stimulates FDI flows. ER has a negative significant effect on FDI in Singapore, Thailand, the Philippines, and Indonesia but it is not significant in Malaysia. Meanwhile, GC has a negative significant effect on FDI in Singapore, the Philippines and Indonesia but is not significant in Malaysia and Thailand. INF, however, does not affect FDI in all of the sample countries.

The establishment of AFTA has a positive impact on FDI in Malaysia, the Philippines, and Thailand but have a significant negative effect on FDI in Singapore. In Indonesia, the dummy variable DAFTA is not significant. The results is supported by the Asian Development Bank (2002) report that indicates although Singapore is still the most attractive location for FDI among ASEAN countries, its share in total FDI to East Asia declines from 14.2% in 1990–1994 to 6.8% in 1998.

With respect to China's entry into WTO, it has a negative impact on FDI in Singapore, Thailand, Philippines and Indonesia. However, it does not have effect on FDI in Malaysia. The results support United Nations (2001b) contention that total FDI inflows into ASEAN have decline markedly from USD27.7 billion in 1997 to USD10.7 billion in 2001. Mirza (2003) argued that one of the reasons of the recent decline of FDI in ASEAN proportionally and in absolute amounts is the lure of China. The results also conform to the ASEAN study cautioning that

competition between China and ASEAN countries will be more intense in such labor intensive products as textiles, clothing, miscellaneous manufacturers and electronics and have important bearing on foreign investments.

CONCLUSION

In this study, we have addressed the question of whether AFTA and China's entry into WTO have affected FDI flows into five ASEAN countries namely Malaysia, Indonesia, Singapore, Thailand and Philippines.

Preliminary evidence suggests that China's entry into WTO have a detrimental effect on FDI inflows into ASEAN countries. While its still too early to gauge accurately the effects of China's entry into WTO, preliminary indication points to the diversion of FDI inflows from ASEAN countries to China. The results also show that the establishment of AFTA have a positive effect on most of the countries, although have a negative effect on some other countries in ASEAN. The results also indicate that a country's market size, openness, infrastructure, and corporate tax significantly affects FDI in ASEAN countries.

The results have some policy implications. First, to enhance FDI flows, ASEAN countries should enlarge their market. Through AFTA, ASEAN will have a very large market of about half a billion people. Policy makers in ASEAN countries should be fully committed to free market policies in ASEAN to make it an attractive area for foreign investors. ASEAN countries, having to compete with other regions especially China in terms of FDI, therefore needs to stress its critical mass as a community of closely cooperating economies as opposed to a club of individual and individualistic nation states. In this regard, promoting ASEAN as a single investment area is applauded.

Second, there is a large difference in labor cost between ASEAN countries and China. The attractiveness on cheap labor market in China will encourage foreign investors to move to China compared to the ASEAN countries. However, ASEAN countries can minimize the effect by focusing on capital intensive rather than labor-intensive industries to compete with China in terms of attracting FDI. Fourth, ASEAN countries should focus on building excellent infrastructure such as communication, electricity and water supply, roads and transportation to lower the costs of doing business.

Lastly, CTAX is one important aspect for each ASEAN countries to consider. Low CTAX in the host country can attract foreign investors to invest. Hence, government should ensure that CTAX rate is competitive enough to attract FDI.

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