

# The Contribution of Foreign Direct Investment to Growth and Stability

## A Post-Crisis ASEAN-5 Review

Xiaoqin Fan and Paul M. Dickie

*The Asian financial crisis has raised doubts about the role of foreign capital in future economic development of ASEAN. This article looks at the FDI component of foreign capital and examines its contribution to growth and stability in the ASEAN-5 economies. Based upon a simple growth accounting framework, the findings indicated that FDI directly accounted for 4 to over 20 per cent of GDP growth in the ASEAN-5 during the 1987–97 period. Moreover, FDI inflows were found to be a stabilizing factor during the Asian financial crisis. These positive results need to be factored into future policy deliberations on the appropriate role of foreign capital in ASEAN development.*

### I. Introduction

The rapid growth enjoyed by the Association of Southeast Asian Nations (ASEAN) was interrupted by the Asian financial crisis in 1997. To date, the ASEAN members are still grappling with the economic challenges. The crisis has also aroused doubts and confusion about the past strategy and future direction that economic development should take.

In particular, the Asian financial crisis has created confusion about the role of foreign capital in the development of ASEAN. Since the crisis, there has been heated debate on how beneficial foreign capital is in promoting economic growth, given that it also created systemic risks that were a key to the Asian financial crisis. This paper contributes to the debate by assessing the role of

foreign direct investment (FDI)<sup>1</sup> in generating sustainable growth. Though there has been a large number of studies of FDI, few have gone beyond qualitative assertions regarding FDI and economic growth. This study makes some attempt at rectifying this lacuna by quantifying the contribution of FDI to growth within a growth accounting framework. This study also attempts to investigate a second important aspect of FDI: its relative stability in relation to other forms of foreign capital and its contribution to mitigating external shocks experienced during the Asian financial crisis.

The discussion will focus on the five founding members of ASEAN<sup>2</sup> for two important reasons. The economies of these members had undergone a most dramatic experience from high growth to crisis. Also the minimum requirements for data

availability are met for these members. This article is organized as follows: Section II provides a brief introduction to FDI inflow into ASEAN-5. Section III analyses the contribution of FDI to growth within a growth accounting framework, Section IV examines the relative stability of FDI flows during the Asian financial crisis, and Section V completes the study with some overall conclusions.

## II. FDI Inflows in Asean-5 Prior to the Financial Crisis

The last two decades have witnessed sustained expansion in FDI inflow into the ASEAN-5 economies (Figure 1). However, the magnitude of FDI inflow has changed over time. FDI inflows only increased gradually from US\$1.3 billion in 1975 to US\$2.2 billion in 1985. From 1986, however, FDI increased rapidly. The 1996 FDI figure of US\$23 billion is more than eight times the 1986 level.

This take-off of FDI inflow in ASEAN-5 largely reflects the receptive policies adopted by these members. While Singapore practised liberal trade and investment policies from the early 1970s, other Southeast Asian nations followed policies of protecting manufacturing activities from foreign competition before mid to late 1980s. This was influenced by the fact that they were largely

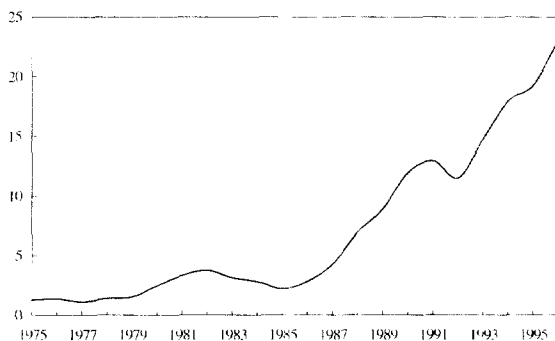
commodity exporters. Since mid to late 1980s, these economies have embarked upon extensive trade and investment liberalization. This has resulted in accelerated FDI inflow (Chen and Drysdale 1995). In addition to a liberal investment regime, the ASEAN-5 economies also possessed locational advantages that included low costs of inputs, large domestic markets, high growth rates, and flexible labour markets. Some members, such as Indonesia and Malaysia, are also endowed with natural resources such as oil and minerals.

Although overall FDI inflow into ASEAN-5 had been growing rapidly prior to the crisis, the scale and trend of the inflow varied across economies (Figure 2). Singapore has received the largest amount of FDI inflow, followed by Malaysia and Indonesia. By comparison, the inflow into Thailand and the Philippines was relatively moderate.

The success of Singapore and Malaysia in attracting FDI relates to their stable macroeconomic conditions, high quality infrastructures, and the availability of skilled labour. These conditions are not as profound in other members of ASEAN-5. For example, the unstable political situation within the Philippines in the 1980s was a major deterrent to FDI inflow.

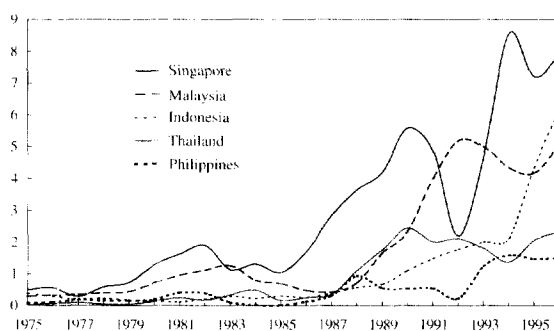
Another noticeable feature is that, with the exception of Indonesia, the growth in FDI inflow

FIGURE 1  
Annual FDI Inflow into ASEAN-5  
(In US\$ billions)



SOURCE: IMF, *Balance of Payments Yearbook*, various issues.

FIGURE 2  
FDI Inflow into ASEAN-5  
(In US\$ billions)



SOURCE: IMF, *Balance of Payments Yearbook*, various issues.

---

in these countries has eased in recent years. One important reason behind this pattern is changes in the relative attractiveness of other countries and destinations for FDI. Many countries have carried out fundamental economic reform programs over the last two decades. An UNCTAD (1998) analysis concluded that of the 151 major policy changes implemented in developing economies during the period 1991 to 1997, 94 per cent were designed to create more favourable conditions for FDI. These market-oriented reforms not only led to more liberal trade and investment policies, but also improved general economic conditions, making these countries more conducive and accommodating environment for FDI inflow.

In particular, the ending of economic isolation in some formally centrally planned economies, such as China, has opened the door to foreign investors. China has received unprecedented FDI inflows since the initiation of its reform program in 1978. In 1983, while FDI inflow into China was only US\$636 million, in 1996, it reached over US\$ 40 billion, more than the total inflow into the ASEAN-5. The increased appeal of FDI in countries such as China draws potential investment away from ASEAN-5.

### **III. Accounting the Contribution of FDI to Growth**

#### *III(i) FDI and growth*

FDI contribute to growth through several channels. It directly affects growth through being a source of capital formation. Capital formation refers to net additions to the capital stock of an economy, including the creation of factories, new machinery, and improved transportation. As a part of private investment, an increase in FDI will, by itself, contribute to an increase in total investment. An increase in investment directly contributes to growth.

FDI also contributes to growth indirectly. FDI beneficially influences other macroeconomic variables, such as employment, exports, consumption, and savings. These, in turn, enhance growth.

FDI not only affects the level of investment, but also the quality of investment. In the view of industrial organisation theory of FDI (Hymer 1976), multinational companies (MNCs) face some disadvantages imposed by both geographic and cultural distances when competing with indigenous firms. To overcome these inherent disadvantages, MNCs must possess some kind of ownership advantage in order to compete with local enterprises. These ownership advantages can be expressed as technology, cost effectiveness, established market, and financial strength. These advantages enable them to operate in a foreign market. As such, FDI also consists of a bundle of intangible assets, including capital, new technology, management skills, and market channels. The inflow of FDI can therefore contribute to improved technology, equipment, and infrastructure in host economies.

Related to the technological advantages of FDI is the benefit accruing to domestic firms through the "spillover effect" (Caves 1974, Globerman 1979, Blomstrom and Persson 1983, Athukorala and Menon 1996). When foreign direct investment flows into a host economy, there is a potential for FDI to act as a vehicle through which new ideas, technologies, and best working practices can be transferred to domestic firms. During this process, domestic firms can gain through several channels. The technology of local firms may improve as foreign firms demonstrate new technologies, provide technological assistance to their local suppliers and customers, and train workers whom local firms may later employ. Furthermore, the competitive pressure exerted by foreign affiliates may force local firms to operate more efficiently, and stimulate them to introduce new technologies. Because foreign firms are not able to extract the full value of these gains, they are often called "externalities" or the "spillover effect" from foreign direct investment (Kokko 1994).

FDI also strengthens the capability of a host economy to reach international markets through its international links (Chia 1995). Many MNCs use global trading and distribution channels established by parent firms to procure capital goods and intermediate inputs, and to export their

---

products. New FDI inflow often come in the form of import of capital equipment. Imports by affiliates of MNCs can increase productive capacity and improve the technological competitiveness of a host economy. Such imports are often required when an economy is going through the process of upgrading industries. The inflow of new production facilities enabled the receiving Southeast Asian economies to grow faster.<sup>3</sup>

There is also evidence that foreign affiliates in developing economies often demonstrate a high propensity to export, and tend to be more export orientated relative to domestic firms. This is because one motivation for investing in developing economies is to enhance multinational firms' export competitiveness through the use of cheaper labour inputs. Petri (1995) found that the export to sales ratio for foreign affiliates in East Asia was 63 per cent in the 1990s. UNCTAD (1993) reported that investment flows to developing East Asia had been directed at the creation of export-oriented industries. This had led to rapid growth in the region's manufacturing exports.

By frequently engaging in trade, affiliates in host economies gain access to these complex marketing and distribution networks. This, in turn, can create market opportunities for other firms in the host economy. Inter-firm linkages through subcontracting networks increase domestic firms' access to international markets. This applies especially to suppliers of parts and components, and of producer services. Thus, even firms who are not members of a MNC system can gain advantages in accessing international markets.

Even though FDI augments growth through direct as well as indirect channels, it is intrinsically difficult to quantitatively measure the contribution of FDI to growth. This is especially true for the indirect effects of FDI. While there are various studies on FDI and spillovers, most are focused on testing the existence of spillover effect. Even then, they encounter difficulties in defining variables to proxy the spillover effect and in establishing reliable models. Measuring the

overall macroeconomic effect of FDI is also not attainable without setting up multi-country general equilibrium models. However, the development of the growth accounting method in recent years has provided a framework to evaluate the direct contribution of FDI through being a source of capital formation. This study makes use of the growth accounting framework to measure the direct contribution of FDI to growth through being a source of capital formation.

It is worth noting that the contribution estimated from the growth accounting method only provides a partial indicator on the true contribution of FDI, as this method is not able to capture the indirect contribution arising from FDI. Nevertheless, these indirect contributions of FDI are even more important than its direct contribution as a source of capital formation. This is because such indirect effects can be potentially larger than the direct effect. For example, FDI may spur on significant growth given the large component of sales to the export market.

More importantly, there are profound flow on effects arising from the indirect contribution of FDI to host economies. FDI can contribute to the upgrading of the whole industrial structure of economies through affecting macroeconomic variables such as employment, exports, consumption, and savings. This, together with the contribute of FDI to technological progress and efficiency improvement, not only stimulate economic growth, but also directly contribute to raising living standards within host economies. Therefore, the true contribution of FDI is dynamic and can be far greater than the results based upon the growth accounting exercise.

Therefore, the results from the growth accounting method can only serve as a partial indicator for the contribution of FDI to growth and the host economies. Despite this, the results from growth accounting can provide useful policy parameters. Until more sophisticated general equilibrium models are constructed, results from growth accounting exercises will continue to serve as useful indicators in quantifying the role of FDI on growth.

*III(ii) Accounting the contribution of FDI to growth in ASEAN-5*

*FDI and gross fixed capital formation.* The ratio of FDI to gross fixed capital formation provides an indication of the role of FDI in capital formation. Table 1 presents the share of annual FDI inflow in gross fixed capital formation in the ASEAN-5 economies.

The magnitude of the share of FDI inflow in gross fixed capital formation varies from economy to economy, ranging from around 5 per cent to over 30 per cent. In Singapore, FDI represents an annual average of more than 30 per cent of gross fixed capital formation from 1987 to 1997. The share is around 15 per cent in Malaysia, 7 per cent in the Philippines, and 5 per cent in Thailand and Indonesia.

As shown in Table 1, the share of FDI in gross fixed capital formation increased in all the economies from 1996 to 1997. Some of these increases, such as for Thailand from 3.1 per cent to 10.3 per cent, were very substantial. These increases are closely related to the fact that while other sources of investment decreased from 1996 to 1997, FDI maintained a stable level or even

increased.<sup>4</sup> The stable inflow of FDI reduced the fluctuation of domestic investments and helped the economy to stabilise in a year of crisis.

Over the period under review, FDI financed a significant portion of gross fixed capital formation in all the ASEAN-5 economies. The role of FDI as a source of capital formation in these economies has been enhanced as FDI inflows have increased over time. Clearly, the economies that are able to attract large FDI inflow stand to gain most. Moreover, the continued inflow of FDI during the Asian financial crisis reduced the extent of the fall in investment in the crisis-hit economies.

*Accounting for the contribution of FDI on growth: method and data.* The economic theory underlying growth accounting measurement is closely related to the theory of cost and production. Growth accounting attributes growth of output to input growth and total factor productivity (TFP) growth, where TFP growth is often considered as an indication of technological progress and efficiency change (Solow 1956; Huang and Kalirajan 1996).

This relationship is captured by the Divisia index (Diewert 1981). The deviation of this index

TABLE 1  
Share of Annual FDI Inflow in Gross Fixed Capital Formation  
(In percentages)

<i>Year</i>	<i>Indonesia</i>	<i>Malaysia</i>	<i>Philippines</i>	<i>Singapore</i>	<i>Thailand</i>
1987	2.1	5.8	5.7	39.7	2.5
1988	2.6	8.9	14.1	46.8	5.8
1989	2.6	15.0	6.6	43.5	7.1
1990	3.5	16.8	6.0	46.8	7.0
1991	4.4	22.6	5.8	33.6	4.9
1992	5.0	25.3	2.0	12.4	4.9
1993	4.9	21.3	9.8	23.0	3.7
1994	4.4	14.6	9.7	36.1	2.4
1995	7.8	11.3	9.2	25.6	3.0
1996	9.4	12.2	7.8	23.1	3.1
1997	12.1	16.9	8.2	27.5	10.3
Average (1987–97)	5.3	15.5	7.7	32.6	5.0

SOURCES: IMF, *Balance of Payments Yearbook*; International Finance Statistics; UN, *Statistical Yearbook for Asia and the Pacific*.

starts from a general form of the production function  $Y = Y(K, L, t)$ , where  $Y$  is value added, and  $K$  and  $L$  denote capital and labour inputs respectively. Taking the logarithm form and totally differentiating the production function with respect to time, it becomes,

$$\begin{aligned} \frac{d \ln Y}{dt} &= \left( \frac{\partial \ln Y(K, L, t)}{\partial Y} \right) * \left( \frac{\partial Y(K, L, t)}{\partial t} \right) \\ &+ \left( \frac{\partial \ln Y(K, L, t)}{\partial K} \right) * \left( \frac{dK}{dt} \right) \\ &+ \left( \frac{\partial \ln Y(K, L, t)}{\partial L} \right) * \left( \frac{dL}{dt} \right) \\ &= \left( \frac{1}{Y} \right) * \left( \frac{\partial Y}{\partial t} \right) \\ &+ \varepsilon_k \left( \frac{dK}{dt} \right) / K + \varepsilon_l \left( \frac{dL}{dt} \right) / L, \end{aligned} \quad (1)$$

where  $\varepsilon_k$  and  $\varepsilon_l$  are the output elasticities of capital and labour, and  $(1/Y)(\partial Y/\partial t)$  is often called the Divisia index of TFP growth. It is defined as follows:

$$\begin{aligned} TFPG &= \left( \frac{1}{Y} \right) * \left( \frac{\partial Y}{\partial t} \right) \\ &= \frac{d \ln Y}{dt} - \varepsilon_k \left( \frac{dK}{dt} \right) / K - \varepsilon_l \left( \frac{dL}{dt} \right) / L \\ &= \frac{d \ln Y}{dt} - \varepsilon_k \frac{d \ln K}{dt} - \varepsilon_l \frac{d \ln L}{dt} \end{aligned} \quad (2)$$

Equation (1) and (2) eventually accounts growth as the contribution of input growth and TFP growth, indicated by equation (3) below:

$$\frac{d \ln Y}{dt} = \varepsilon_k \left( \frac{d \ln K}{dt} \right) + \varepsilon_l \left( \frac{d \ln L}{dt} \right) + TFPG. \quad (3)$$

Under discrete time:

$$\begin{aligned} (\ln Y_t - \ln Y_{(t-1)}) &= \left( \frac{1}{2} \right) (\varepsilon_{kt} + \varepsilon_{k(t-1)}) (\ln K_t - \ln K_{(t-1)}) \\ &+ \left( \frac{1}{2} \right) (\varepsilon_{lt} + \varepsilon_{l(t-1)}) (\ln L_t - \ln L_{(t-1)}) \\ &+ TFPG, \end{aligned} \quad (4)$$

where  $t$  and  $(t-1)$  refer to the current and previous periods.

The first step in applying the growth accounting method is to find the output elasticity of each input. Two methods are often used to measure the output elasticity of input. The first is the econometric estimation of the production function, in which the parameters are estimated statistically. The second is the non-econometric method which assigns output elasticity of inputs according to the cost share of each input by taking additional assumptions. The main assumptions are that output and factor markets are competitive, and that firms maximise profit subject to constant returns to scale. Under these conditions, the first order condition of profit maximisation leads to the equalisation of output elasticity for each input to the cost share of each input, that is:

$$\varepsilon_i = \left( \frac{\partial Y}{\partial X_i} \right) / \left( \frac{Y}{X_i} \right) = \frac{P_i X_i}{P Y}, \quad (5)$$

where  $P_i$  is the price of input  $i$ ,  $X_i$  is input  $i$ ,  $P$  is the price of output, and  $Y$  is output.

The advantage of the non-econometric method lies in its simplicity and the possibility to apply the growth accounting method even when data is limited. However, the use of factor shares as a substitute for elasticities assumes that capital and labour markets are perfectly competitive. It also assumes that the adjustment of output and input levels is instantaneous. These assumptions are questionable in most countries. Moreover, these assumptions cannot be tested statistically using the non-econometric method. The production function used in the non-econometric method is usually a simple Cobb-Douglas production function with constant returns to scale. Given these shortcomings of the non-econometric method, the econometric method is often a preferred way. The advantage of the econometric approach also lies in its ability to perform statistical tests with regard to the various assumptions such as constant returns to scale, neutrality, and the form of the production function.

Data on output, labour and capital inputs are obtained from the United Nation's *Statistical Yearbook for Asia and the Pacific*. The output and

capital input are measured by 1995 constant prices. Labour input is measured in terms of total numbers of employment. Data from 1985 to 1997 for the five ASEAN countries are pooled together to increase degree of freedom. There are 65 observations in the sample.

The growth accounting method has been extensively used in research and policy analysis over the past decade. This approach, however, has its limitations. In particular, growth accounting method is unable to account for the qualitative improvement in inputs. Consequently, economic growth that is attributable to the quality improvement of capital input can be under estimated.

This problem can be a potentially severe impediment to correctly accounting for the contribution of FDI in ASEAN-5. All the five countries have experienced rapid industrialization. FDI has been an important vehicle for capital input upgrading. Such technological change embodied by foreign direct investment is not likely to be fully accounted for by the growth accounting method. In addition, this method is not able to capture the indirect contribution of FDI as discussed earlier. All this suggests that the result from growth accounting may substantially underestimate the true contribution of FDI to growth.

This limitation should be borne in mind when interpreting results obtained using of the growth accounting method. Nevertheless, the results from this method have proven to be useful as policy parameters. This approach makes it possible to summarise detailed information about the complex process of economic growth within a simple framework. It provides a filing system that is a complete balance sheet of the production framework. Even though the growth accounting method is likely to under state FDI's contribution to growth, results based on this method still represent a step forward in quantifying the contribution of FDI to growth.

*Empirical investigation.* The empirical investigation starts by identifying the production function and output elasticity of each input.

Several functional forms can be assumed for the production function. There are no theoretical guidelines as to what production function to apply in ASEAN-5. One method to determine which production function is appropriate is to choose a more general functional form and test whether one or more alternatives forms holds. The test therefore started from the flexible translog production function without constant returns to scale constraints. The translog production is expressed as follows:

$$\begin{aligned} \ln Y = & \alpha \ln K + \beta \ln L + \frac{1}{2} (\beta_{KK}) (\ln K)^2 \\ & + \frac{1}{2} (\beta_{LL}) (\ln L)^2 + (\beta_{KL}) (\ln K) (\ln L) \end{aligned} \quad (6)$$

The Wald test shows that the joint products of the translog production function are not significantly different from zero (Table 2), that is

$$\beta_{KK} = \beta_{LL} = \beta_{KL} = 0,$$

This reduces the production function to a Cobb-Douglas form. The regression is run again using the Cobb-Douglas form. Four country dummy variables are included to capture the country specific effect in both the translog and the Cobb-Douglas production functions. The Durbin-Watson test reveals that there exists auto correlation. In order to overcome the auto correlation problem, the sample is taken first order difference. This reduces the observation to 60. Therefore, the function estimated is:

$$\begin{aligned} \ln y = & \alpha \ln k + \beta \ln l + d1*dumThai \\ & + d2*dumSing + d3*dumPhi \\ & + d4*dumMal, \end{aligned}$$

where  $\ln y = (\ln Y_t - \ln Y_{(t-1)})$ ,  $\ln k = (\ln K_t - \ln K_{(t-1)})$ , and  $\ln l = (\ln L_t - \ln L_{(t-1)})$ , *dumThai*, *dumSing*, *dumPhi*, and *dumMal* refer to the country dummy variables.

Various heteroskedasticity tests also show the presence of the heteroskedasticity problem. White's heteroskedastic consistent covariance matrix estimation is used to correct the heteroskedasticity. The existence of the constant returns to scales is also verified. The regression results are presented in Table 2.

TABLE 2  
Estimation of production function — ASEAN-5

Variables	Translog production function		Cobb-Douglas production function	
	Coefficient	t-statistics	Coefficient	t-statistics
Ln k	0.647	13.285	0.634	8.091
Ln l	0.353	7.248	0.366	4.670
(Ln k) <sup>2</sup>	0.228e-16	0.122e-8		
(Ln l) <sup>2</sup>	0.167e-16	0.528e-9		
Ln k Ln l	0.665e-16	0.134e-8		
DumThai	-0.010	-0.558	0.013	0.498
DumSing	0.057	2.378	0.057	2.378
DumPhi	0.033	1.937	-0.009	-0.347
DumMal	-0.0310	-1.811	0.004	0.133
Constant	-0.019	-1.135	-0.006	-0.216
Wald X <sup>2</sup> test for $\beta_{kk} = \beta_{ll} = \beta_{kl} = 0$	0.378e-14	with 3 d.f.	F test for CRS	2.912 (df1 = 1, df2 = 52)
R <sup>2</sup> adjusted	0.7712		0.7551	

*The contribution of FDI to growth.* The estimated coefficients are then used to calculate the contribution of FDI to growth. This involves two steps. The first step is to estimate the contribution of total capital input to growth by applying the growth accounting framework. The output elasticity of labour and capital obtained from the production function estimate are used as the weights for labour and capital inputs. The second step is to find the contribution of FDI to growth through its role as a source of capital formation, by relating the proportion of FDI in gross fixed capital formation. The results are presented in Table 3.

The contribution of FDI to growth varies across economies and over time. FDI has played an indispensable role in growth in Singapore, where it accounted for more than 20 per cent of growth over the past decade. The contribution in Malaysia has been around 18 per cent in recent years, and 15 per cent for the Philippines. The contribution for Thailand is around 6 per cent, and for Indonesia is around 4 per cent. This relative importance of FDI in growth coincides with the

amount of FDI inflow into different economies. As FDI inflow increases, the contribution of FDI to growth has increased through time in all economies.

Nevertheless, the true contribution of FDI is greater than the results based on the growth accounting exercise imply. However, the significant contribution of FDI to growth is apparent even by analysing the partial indicators obtained from this study.

#### IV. Foreign Direct Investment in ASEAN-5 During the Asian Financial Crisis

In 1997, the economic activities of ASEAN were dominated by the Asian financial crisis. Growth in the region's fast growing economies was halted, and in some cases contracted abruptly. The ASEAN-5 economies were among the worst affected by the crisis.

Despite this, FDI in the ASEAN-5 continued to grow in 1997. As a group, they received US\$24.5 billion in FDI inflow, which represented a 6.3 per cent increase over the 1996 level. Among the



TABLE 3  
Real GDP Growth and Contribution of FDI to Growth in ASEAN-5  
(In percentages)

Year	Indonesia		Malaysia		Philippines		Singapore		Thailand	
	GDP growth	FDI share in GDP growth	GDP growth	FDI share in GDP growth	GDP growth	FDI share in GDP growth	GDP growth	FDI share in GDP growth	GDP growth	FDI share in GDP growth
1987	4.9	1.4	5.4	3.2	4.8	5.0	9.7	2.2	9.5	2.8
1988	5.7	1.6	8.9	9.4	6.2	22.4	11.6	6.5	13.3	6.8
1989	9.1	2.6	8.8	31.2	6.2	13.5	9.6	42.2	12.2	9.2
1990	9.0	3.8	10.0	22.0	3.0	17.6	9.0	28.9	11.2	10.9
1991	8.9	3.9	8.6	33.2	-0.6	14.0	7.3	36.4	8.6	4.2
1992	7.2	1.6	7.8	17.2	0.3	23.8	6.2	19.8	8.1	0.8
1993	7.3	2.8	8.3	26.7	2.1	24.5	10.4	11.1	8.4	2.4
1994	7.5	4.9	9.3	16.4	4.4	10.4	10.4	14.5	8.9	1.7
1995	8.2	8.2	9.4	14.5	4.7	7.6	8.6	14.8	8.8	2.9
1996	8.0	10.5	8.6	8.7	5.7	8.9	6.9	37.7	5.5	1.1
1997	4.6	6.9	7.7	11.7	5.1	12.1	7.8	15.5	-0.4	25.4
Average (1987-97)	7.3	4.4	8.4	17.7	3.8	14.5	8.9	20.9	8.6	6.2

individual members, FDI inflow recorded a fall of US\$1.5 billion in Indonesia, and US\$0.3 billion in the Philippines. However, there was an increase of US\$1.4 billion in Thailand, and US\$1.8 billion in Singapore. FDI to Malaysia maintained its 1996 level (Figure 3).

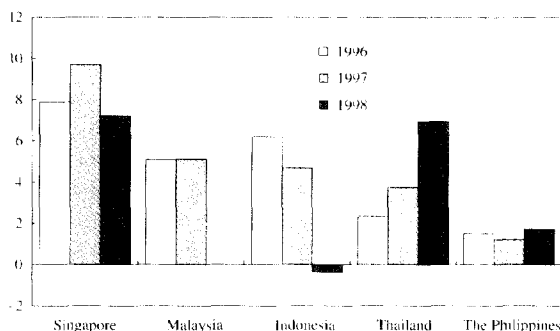
Despite the resilience of FDI in the face of the financial turmoil, it would be wrong to characterise FDI activities as totally insensitive to the crisis. FDI inflow into Indonesia and the Philippines did decrease in 1997. The impact also extended into 1998, by which time the crisis is commonly considered to have ended. Total inflow to Singapore, Indonesia, Thailand, and the Philippines<sup>5</sup> declined from US\$19.4 billion in 1997 to US\$15.5 billion. However, while inflow to Singapore and Indonesia decreased, inflow to Thailand and the Philippines increased (Figure 3). Overall, FDI exhibited greater stability compared to portfolio and other forms of capital inflow during the Asian financial crisis (Figure 4).

A similar phenomenon was observed during the financial crisis in Mexico in 1994, where the decline in portfolio investment was not matched by a similar drop in FDI flow. This is partly because some of the changes brought about by the financial crisis can even be considered conducive to increasing FDI flows. These factors include a decrease in the cost of assets, and improved competitiveness due to devaluation (UNCTAD 1998).

The relatively stable performance of FDI flows during the Asian financial turmoil highlights the advantages of FDI as a form of external finance. The continuity of FDI inflow into the crisis-hit economies to some degree reduced the financial fluctuations and helped the economies to stabilise. The significance of this role should not be ignored, given the tremendous economic and social costs generated by events such as the Asia financial turmoil.

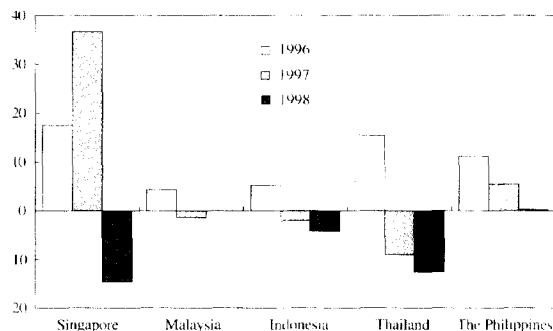
The continued FDI inflow into the crisis struck

**FIGURE 3**  
**FDI Inflow to the ASEAN-5 during the Asian Crisis**  
(In US\$ billions)



SOURCE: IMF, *Balance of Payments Yearbook*, various issues.

**FIGURE 4**  
**Portfolio and other capital Inflow to the ASEAN-5 during the Asian Crisis**  
(In US\$ billions)



SOURCE: IMF, *Balance of Payments Yearbook*, various issues.

economies demonstrates the long-term commitment underpinning foreign direct investment decisions. FDI is therefore more prone to the underlying economic fundamentals and less likely to be influenced by financial market inefficiencies such as herding effects. By comparison, short-term debt and portfolio flows are more volatile. This is related to "hot money",

a concept which refers to capital flows that can come and go quickly.

The "cool" nature of FDI has been confirmed by other empirical studies. For example, Sarno and Taylor (1999) examined the relative importance of permanent and temporary components of capital flows to eighteen Latin American and Asian developing countries over the period 1988 to 1997. Their study compared the degree of "hotness" (temporariness) or "coolness" (permanence) of five broad categories of capital flows in the financial account, including equity flows, bond flows, official flows, commercial bank credit, and foreign direct investment. The analysis suggests that FDI display the largest degree of permanence among all the categories of capital flows considered.

Hot money is characterised by the possibility of sudden reversal. It has been stressed that hot money flows to developing countries may have deleterious side effects on the recipient economies. The World Bank (1997), for example, has argued that strong surges in portfolio inflows to developing countries may generate asset market bubbles. The sudden reversal of capital inflows can also result in balance of payments problems. Given this, the stable nature of FDI has significant repercussions for the economic performance of a host economy. As such, the surge of FDI flows into developing countries has been considered to be the most beneficial development in the global capital market (Sarno and Taylor 1999).

## V. Conclusions

The article has assessed the contribution of FDI to the growth and stability of ASEAN-5 economies. The contribution of FDI in mitigating external shock is assessed by comparing the inflow before and during the Asian financial crisis. While there is broad awareness on the contribution of FDI to growth, due to the conceptual complexities and data availability, attempts to move beyond qualitative assertions on the contribution of FDI on growth encounter great difficulties. In an attempt to quantify the contribution of FDI to growth, this study applies a simple growth

---

accounting approach to analyse the importance of FDI in promoting growth through serving as a source of capital formation.

The result from the growth accounting exercise shows that FDI has made an important contribution to the economic development of ASEAN-5 economies. It has been a major source of capital formation and has played a significant role in augmenting growth. Because of different amounts of inflow, the contributions of FDI differ across economies. Singapore has gained most from FDI inflow, followed by Malaysia. The contribution of FDI in the Philippines, Indonesia, and Thailand, is relatively moderate. Clearly, members that are able to attract large FDI inflows stand to gain the most.

The occurrence of the Asian financial crisis should not distract us from the fact that these countries have achieved remarkable economic development over the last two decades. This achievement would not have been possible without the participation of foreign direct investment.

The results also show that FDI has played a significant role in averting external shocks during the Asian financial crisis. There has been a continuation of FDI inflow in ASEAN-5 during the crisis. This has reduced the economic and financial fluctuations in the ASEAN-5 countries. It is safe to infer that the decline in investment and growth would have been more severe without such continued inflow of FDI in a year of crisis.

The Asian financial crisis has posed economic challenges to the ASEAN-5 economies. It has in some degree dampened the confidence of foreign investors in investing in this region. Internationally, more and more countries are

implementing liberal investment policies. All this indicates that attracting FDI inflow has become a hard task for ASEAN economies. In order to regain the momentum in economic growth, it is important that ASEAN countries explore ways to attract sustained FDI inflow.

The financial crisis has also aroused confusion about the role of capital mobility. Among economists, Jagdish Bhagwati (1998), a free trade advocate, argues that while trade in goods and services undoubtedly boosts living standards, capital flows are characterised by "panics and manias". Countries such as Malaysia have also imposed capital controls as the solution to the crisis. The controversy has largely centred around short-term portfolio investments. However, imposing capital controls may also threaten the profits of multinational corporations (MNCs), and therefore discourage foreign direct investment. The benefit arising from foreign direct investment should be taken into consideration when such measures are assessed.

The results from the growth accounting method applied in this study serve as useful indicators for measuring the contribution of FDI to growth. However, a complete evaluation of the role of FDI on growth requires taking into account the direct contribution of FDI as a source of capital formation, as well as indirect effects arising from its overall macroeconomic and spillover effects. This goal cannot be achieved without the construction of a multi-country general equilibrium model. While a huge task, future research in this direction will definitely shed light on our understanding on the role of FDI in host economies.

#### NOTES

1. FDI is broadly defined as the establishment or acquisition of substantial ownership of an enterprise in a foreign economy. The International Monetary Fund defines FDI as enterprises in which non-residents hold 25 per cent or more of the voting share capital of an enterprise.
2. These five members are Indonesia, Malaysia, the Philippines, Singapore and Thailand.
3. Capital imports often occur in the early stages of FDI inflow. As operations mature, affiliates are likely to switch to greater use of local goods and services. Yue (1995) found that affiliates in the Asian Pacific region generally start to generate a positive trade balance after about four years of establishment.
4. The inflow of FDI in ASEAN-5 during the Asian financial crisis will be discussed in detail in Section IV.
5. Data for 1998 FDI inflow for Malaysia are not available.

---

## REFERENCES

- Athukorala, P. and J. Menon. "Foreign Investment and Industrialisation in Malaysia: Exports, Employment and Spillovers". *Asian Economic Journal* 10, no. 1 (1996): 29-44.
- Bhagwati, J. "The Capital Myth: The Difference Between Trade in Widgets and Dollars". *Foreign Affairs*, May-June 1998.
- Blomstrom, M. and H. Persson. "Foreign Investment and Spillover Efficiency in an Underdeveloped Economy: Evidence from the Mexican Manufacturing Industry". *World Development* 11 (1983): 493-501.
- Caves, R. E. "Multinational Firms, Competition and Productivity in Host Country Market. *Economica* 41 (1974): 176-93.
- Chen, Edward and Peter Drysdale. *Corporate Links and Foreign Direct Investment in Asia and the Pacific*. NSW: Harper Educational, 1995.
- Chia Siow Yue. "The International Procurement and Sales Behaviour of Multinational Enterprises". In *Corporate Links and Foreign Direct Investment in Asia and the Pacific*, edited by Edward Chen and Peter Drysdale. NSW: Harper Educational, 1995.
- Diewert, W. E. "The Theory of Total Factor Productivity Measurement in Regulated Industries". In *Productivity Measurement in Regulated Industries*, edited by T. G. Cowing and R. E. Stevenson. New York: Academic Press, 1981.
- Globerman, S. "Foreign Direct Investment and 'Spillover' Efficiency Benefits in Canadian Manufacturing Industries". *Canadian Journal of Economics* 12 (1979): 42-56.
- Huang, Y. and K. P. Kalirajan. "Did Policy Reform Improve Chinese State Enterprises' Technical Efficiency?" Mimeographed. Canberra: Australian National University, 1996.
- Hymer, S. *The International Corporations of National Firms: A Study of Direct Foreign Investment*, (1960), vol. 14. Cambridge, Mass.: MIT Monographs in Economics, 1976.
- Kokko, A. "Technology, Market Characteristics, and Spillovers". *Journal of Development Economics* 43 (1996): 279-93.
- Petri, P. "The Interdependence of Trade and Investment in the Pacific". In *Corporate Links and Foreign Direct Investment in Asia and the Pacific*, edited by Edward Chen and Peter Drysdale. NSW: Harper Educational, 1995.
- Sarno, L. and Mark P. Taylor. "Hot Money, Accounting Labels and the Permanence of Capital Flows to Developing Countries: An Empirical Investigation". *Journal of Development Economics* 59 (1999): 337-64.
- Solow, R.M. "A Contribution to the Theory of Economic Growth". *Quarterly Journal of Economics* 70 (1956): 65-94.
- United Nations Conference on Trade and Development (UNCTAD). *World Investment Report*, New York and Geneva: United Nations, 1993, 1998.
- World Bank. *Private Capital Flows to Developing Countries: The Road to Financial Integration*. World Bank Policy Research Report. Oxford: Oxford University Press, 1997.

**Xiaoqin Fan** is research economist at the New Zealand Institute for Economic Research.

**Paul M. Dickie** is Visiting Professor of International Finance at the Graduate School of Business and Government Management, Victoria University of Wellington, New Zealand.