The Impact of Domestic and Foreign Direct Investments on Economic Growth: Evidence from ASEAN Countries

Suleiman W. Almasaied[1], Ahmad Zubaidi Baharumshah[1*] and Salim Rashid[2]

[1]*Faculty of Economics and Management, Universiti Putra Malaysia*
43400 UPM, Serdang, Selangor, Malaysia
[2]*Department Economics, University of Illinois at Urbana-Champaign*
309 Wohlers Hall, MC 706, 1206s sixth, Champaign, Il 61820
*E-mail: zubaidi@putra.upm.edu.my

ABSTRACT

In this paper, the dynamic relationships between foreign direct investment (FDI), domestic investment and other determinants of economic growth were examined. Both the short-run and long-run growth processes were modelled using the ARDL approach to carry out cointegration analysis for five ASEAN countries. The main results included (i) domestic investment, FDI, human capital and financial intermediation significantly affected economic growth; (ii) FDI had a positive and significant effect on growth but this was of lesser magnitude as compared to domestic investment; and (iii) a strong support was found for an export-led-growth hypothesis, and the impact of technology transfer from international trade was larger than direct technology transfer from FDI. All in all, our empirical results from the ASEAN countries confirm the view that investments and exports are the engines of growth and it is worthwhile for the authorities to encourage domestic as well as foreign capital to put these countries back on their pre-crisis growth paths.
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INTRODUCTION

Foreign capital has started to flow into Malaysia and its neighbour countries (Singapore, Thailand, Indonesia and the Philippines) at accelerating rates since the early 1980s. Investors were attracted to these countries because of their sound macroeconomic fundamentals[1]. These dynamic economies of the Association of Southeast Asian Nations (ASEAN) had small fiscal deficits, stable exchange rates, high saving rates, and not to mention, the highly regarded labour work force. Other domestic factors which could have significantly contributed to the surge of this foreign capital included the widespread deregulation in the financial markets and the easing of restrictions on capital inflows. More than two decades of rapid economic progress had made the region an attractive location for foreign

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[1] The five countries, Singapore, Malaysia, Indonesia, the Philippines and Thailand, are the founding members of the ASEAN. In a seminal paper, Sachs (2000) found these five countries as belonging to the list with the most successful export-promotion policies and attractive FDI. They had also won the race of absorbing technologies from abroad. Singapore has grown rapidly in term of its GDP per capita and stands out in the world economy. Except the Philippines, the other ASEAN-5 economies grew well above the world average (Hsiao and Hsiao, 2003).

capital, particularly the FDI. Beside these factors, various external factors, like low world interest rates and economic recession in the industrial countries, had contributed to the massive influx of the foreign capital inflows. In addition, the strong yen-dollar rate had also propelled Japanese investment into the region. Since the ASEAN currencies of these countries were more or less tied to a basket of currencies, primarily to the US dollar, Japanese companies found that they could use them as a low-cost substitute for their US manufacturing base.[2]

The objectives of this paper were two-fold: One, to investigate the long- and short-run impacts of the FDI, domestic investment, financial intermediation, exports and human capital on the economic growth, using data gathered from five ASEAN countries (ASEAN-5: Singapore, Malaysia, Thailand, Indonesia and the Philippines). These countries were selected because of their high domestic investment rates and the massive influx of the FDI in the last two decades or so. Much of the FDI is export-oriented and these countries were used by the Japanese and American firms as a platform for exports. Two, the research attempts to seek evidence in support of the domestic investment-led growth and export-led growth hypotheses. The remarkable growth records over the three decades, driven by exports and private investments, have offered a remarkable opportunity to test some of the well-known hypotheses in the growth theory. The researchers believe that the empirical findings, based on the ARDL approach, could complement those provided in the earlier studies.

This paper contributes to the existing literature in the following ways: first, a large body of the literature on the "Asian miracle" has emphasized on the vital role of the FDI inflows, as the main vehicle of economic growth, i.e.

the FDI-growth link (for recent survey, *see* Lim, 2001). They found the positive effects of the FDI on the economic growth, through capital accumulation and knowledge transfers, especially for countries with open trade regimes (Basu *et al.*, 2003). Although the general consensus suggests that FDI is crucial for a successful development, a more important question in the wake of the financial crisis, which broke out in 1997 in Asia, is that which investment has contributed more in the process of economic growth, FDI or domestic investment? Based on the cross-country evidence, most of the earlier studies concluded that the FDI promoted economic growth and spread the benefits throughout the economy. Contrary to this hypothesis, several authors have also argued that foreign capital crowded out the domestic investment (McCombie and Thirwall, 1994; Carkovic and Levine, 2005).[3] This argument applies to not only the short-term external debt or 'hot money' (mainly bank loans in the case of the ASEAN countries), but also to FDI.[4] Another way to present the issue is the fact that the flows in the FDI may well flow out under disguise. In what follows, FDI is not 'bolted down' although the physical asset it finances is. This is a little stretched as it suggests the loan will not come at sharp discount. For these reasons, some authors hold the view that the distinction between the short- and long-term capital is not important (Bird and Rajan, 2002). In assessing the impact of private capital inflows, Eichengreen (1991) pointed out that the global factors affecting capital inflows (including FDI) tended to have an important cyclical component. This has led to the repeated boom and bust in the capital inflows to the developing economies. Thus, developing countries face the challenge of having to design policies and institutional structures that could secure the most benefits from capital

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[2]   The inflow of FDI to these countries accelerated with the yen appreciation because production and investment in Japan itself became relatively more expensive.

[3]   In our review of the literature, we find that not all empirical evidence supports the hypothesis that FDI play an important role in diffusing technology and stimulating economic growth. Rodrik (1999), for example, summarized this view. Rodrik wrote that: "today's policy literature is filled with extravagant claims about positive spillovers from FDI but the evidence is sobering".

[4]   This is also in line with the argument by Alam *et al.* (1995) who argued in today's highly mobile international markets, long-term assets are almost liquid as short-term assets; hence, they are regarded as close substitutes. In contrast, authors like Sarno and Taylor (1999) and Chuhan *et al.* (1996) found that unlike the "hot money", the degree of reversibility of the FDI inflows is low as they contain large permanent component. In other words, countries which financed their current account deficits mainly via FDI are less likely to be susceptible to a crisis.

inflows (especially the short-term capital), while reducing the risk associated to sudden reversal and shrinking source of external funds. For these reasons and in the aftermath of the financial crisis, the attention in some of the ASEAN has shifted to domestic investment as the main engine of its economic growth.

Second, the idea that financial development can affect economic growth has long been conjectured by economists and policymakers (financial-led growth hypothesis). In addressing the issue, several papers have provided persuasive evidence that financial deepening contributes positively to growth (*see* Beck and Levine, 2004, for the survey of the literature). However, most of these papers did not emphasize on the possible contrasts between the short- and long-run impacts of financial development on growth. The few studies which have looked at the short- and long-term impacts of this variable on economic activities are inconclusive, and as such further research is warranted.[5] In our view, this distinction is important since the benefits of higher levels of financial development could be realized in the short-run; while in the long-run, as the economy grows and become more mature, these effects may be of lesser importance or simply disappear as suggested by some recent literatures (Fase, 2001; Darrat, 1999). The policy which is concerned with this finding in the post-crisis era is clear; if it is positive both in the short and long-run, as shown by the current results than the financial development may lead to capital inflow. Thus, it is important for the host countries to restructure and develop a financial structure to undertake more efficient investment allocation, and cater for an external capital market which shows a greater interest in emerging market economies.

Although many empirical studies have been carried out on the relationship between growth and its determinants, the results are mixed. The ambiguous results of the existing studies, mainly stemming from the use of inappropriate econometric methods, call for further investigation. This is specifically to reduce the possible heterogeneity problem among the countries, in which the researchers relied on pure time-series method. The results from the bounds tests and the autoregressive distributed lag (ARDL) approaches, suggested by Pesaran *et al.* (2001), are more likely to be more persuasive than their predecessors. The use of the bounds tests is necessary because the power of the conventional unit root tests may be low for a time span typically available for empirical works (Narayan and Narayan, 2005; Akinlo, 2004; Alam and Quazi, 2003). The approach also allowed the researcher to take on the estimation problem of the data non-stationarity and differentiate between the long- and short-run relationships.

This paper proceeds in the following manners. Section 2 provides a summary of the empirical issues and Section 3 contains a description of the model and the data used in the analysis. The estimation technique is given in Section 4. Section 5 presents the results, while Section 6 summarizes the principal findings and draws some policy implications.

EMPIRICAL EVIDENCE

The extent to which FDI contributes to development process depends on a wide range of factors in the host country. These include the rate of savings in the host country, the degree of openness as well as the level of technological development, among others. Empirical studies revealed that the FDI would have a positive effect on the growth prospect of the recipient economy, if the host country had a high savings rate, an open trade regime and high technology (Akinlo 2004).[6] Most studies also reported that the FDI inflows led to higher per capita income increase,

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[5] It is worth mentioning that cross-country studies suffer from a high correlation between financial, institutional, legal and regional factors, making it difficult to clearly identify the effect of financial development on growth. Several recent studies showed that the results from cross-country studies might be picking up legal, social and institutional features of the countries under investigation rather than the positive impact of finance on growth. Driffill (2003) provided an excellent survey of this literature.

[6] Akinlo (2004) made a clear distinction between FDI concentrated on manufacturing industries (manufacturing FDI) and the FDI that focused on extraction industries. In this article, he argued that the FDI flows to Nigeria (mostly in the oil sector), which belonged to the latter category, did not enhance growth as much as those to the manufacturing.

an increase in economic growth and higher productivity growth. Other channels through which FDI may enhance growth include higher exports, apart from the spill-over effects on the rest of the economy in the host country.

In a panel data study of a group of 69 developing countries, Borensztein *et al.* (1998) uncovered the following evidences. First, the FDI is an important vehicle for transfer of technology and matters for economic growth. Second, the FDI is more productive than domestic investment, contributing more growth than domestic investment. These results, however, are conditional on the minimum threshold stock of human capital available in the recipient country, that is, there is a minimum level of education for which the effects of FDI turn positive. Indeed, the authors went on to say that FDI would contribute to economic growth only when a sufficient absorptive capability of advance technologies was available in the host country. In other words, the positive correlation between the FDI and economic growth is dependent on the availability of the human capital stocks, and the FDI alone might not play an ambiguous role in contributing to economic growth. All in all, the statistical evidence from their study revealed that the economic growth, FDI and human capital had a robust relationship.

Although most studies have predicted the positive impacts of the FDI, a few studies have attempted to quantify the short- and long-run effects of FDI on growth. These authors have argued that while there is a possible short-term positive impact on economic growth, there can also be a negative impact of the FDI on the longer-term growth prospects, due to intervening mechanisms of dependence, particularly "decapitalization" and "disarticurlation" (lack of linkages). Thus, unlike the modernization hypothesis which predicts that FDI promotes economic growth, the so-called dependency hypothesis predicts a negative correlation between the stock of FDI and growth rate. In this paper, the researchers explicitly looked at the short- and long-run impacts of the FDI on economic growth using the ARDL modelling approach.

The sign on financial depth can either be positive or negative, depending on whether financial development reduces or increases capital flight. If it reduces the capital flight, it will then have a positive sign; otherwise, the variable will carry a negative sign. Levine *et al.* (2000) showed that there was a strong positive relation between financial intermediary development and long-run economic growth. In a related work, Beck *et al.* (2000) showed a robust, positive link between financial intermediary development and both real per capita GDP growth and total factor productivity. Several studies have also highlighted the short- and long-run impacts of financial development on growth which showed contradictory results. For example, Darrat (1999) and Fase (2001), in their articles, argued that the benefits of higher levels of financial development could be realized in the short-run, whereas when the economy becomes more mature these effects somewhat disappear in the long-run. The findings from these two studies suggested that in order to examine the effects of financial development on economic growth, one needed to consider the both the short- and long-run relationships.

In the case of exports, the empirical evidence clearly suggests that countries, which experience phenomenal growth rates, are also those which are successful exporters. Exports are expected to play an important role in all the five economies. A visual inspection of the data, on the country-to-country basis, reveals that the export performances of the ASEAN countries were remarkable between 1981 and 1995. Starting from 1995, however, the export growth rates declined, the exports became virtually stagnant in 1996 and 1997, declined in 1998, and were only recovered after the second half of 1999. The researchers have also noticed that the decline in the export activities also lead to economic slowdown in all the countries under current investigation.[7]

The theoretical argument is that export orientation increases the openness of the economy, and by exposing it to foreign technology and foreign competition, provokes a rapid rate of technological progress. Export-promotion policies have been advocated as a superior development

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[7] Except for the Philippines, the correlation between the GDP and exports shows that they are strongly correlated.

strategy for developing countries by many scholars. There are plenty of empirical evidences to support of the export-led growth hypothesis (Bahmani-Oskooee and Alse, 1993; Sachs and Warner, 1999; Esfahani, 1991). An important conclusion which emerged from all these studies was that countries with a higher export growth, over an extended period, tended to grow faster than others. For example, Esfahani (1991) suggests that the export promotion policies supply foreign exchange resources to semi-industrialized countries, which relieves import shortages and allows output expansion.

THE THEORETICAL MODEL AND SOURCE OF DATA

In this study, the researchers adapted the theoretical exposition of Borensztein *et al.* (1998) and more recently Akinlo (2004), in specifying a model to identify determinants of economic growth. However, the researchers also considered an open economy where technical progress was the result of foreign and domestic capital deepening and human capital. The economy produces output according to the following technology:

$$Y_t = AH_t^{\alpha}K_t^{1-\alpha} \tag{1}$$

where, *A* represents the exogenous state of environment, *H* denotes the human capital, and *K* stands for physical capital. The total capital is composite of a continuum of varieties of capital goods *x(j)*, and this is given by:

$$K = \left\{ \int_o^N x(j)^{1-\alpha} dj \right\}^{\frac{1}{1-\alpha}} \tag{2}$$

Suppose the domestic firms invest (*k*) out of total capital (*K*), and foreign firms invest (*k**), the total capital invest is then: *K=k+k**. Taking the differential of Eq.1 and rearranging the result, yielding the demand for *m(j)* each variety of capital goods x (j):

$$\frac{\partial Y_t}{\partial K} = (1-\alpha)AH^{\alpha}K^{-\alpha} \text{ Or } m(j) = A(1-\alpha)H^{\alpha}x(j)^{-\alpha} \tag{3}$$

To start the production, requiring a fixed set-up cost (*F*) is needed. Assume that fixed set-up cost depends negatively on the ratio of the foreign capital to the total capital investing in the host country (*k*/K*) and also negatively to domestic capital compared to the rest of the world's capital, $K^*,(k/K^*)$. That is, the higher the domestic capital, (k/K^*) the lower the cost of adopting new technology will be. Thus, the set-up cost function is: $F = F(k^*/K,k/K^*)$; where: $\dfrac{\partial F}{\partial (k^*/K)} < \dfrac{\partial F}{\partial (k/K^*)} < 0$

Following Borensztein *et al.* (1998), by assuming that there is constant marginal cost of production of *x(j)* equals to 1, and the capital goods depreciate fully and assuming a steady state where the interest rate *(r)* is constant, profits for the producer of new variety of capital *j* are:

$$\prod(j)_t = -F(k_t^*/K_t, k_t/K_t^*) + \int_t^{\infty} [m(j)x(j)]e^{-r(s-t)}ds \tag{4}$$

The maximization of Eq. (4) subjects to the demand Eq. (3) generates the following equilibrium level for the production of each good *x(j)*:

$$x(j) = HA^{1/\alpha}(1-\alpha)^{2/\alpha} \tag{5}$$

Substituting Eq. (5) into the demand function Eq. (3), the researchers obtained the following expression for the rental rate: $m(j)=1/(1-\alpha)$. Assuming that there is a free entry, and the rate of return *(r)* will be such the profits are equal to zero, and solving the zero profits condition, the researchers would yield:

$$r = A^{1/\alpha} \phi \ F \ (k^*/K, k/K^*)^{-1} \ H, \text{ where } \phi = \alpha (1-\alpha)^{(2-\alpha)/\alpha} \tag{6}$$

Individuals maximize their utility due to the standard inter-temporal utility function, and the rate of consumption growth must, in a steady

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[8] Borensztein *et al.* (1998) included interactive effect between school enrolment and FDI, initial conditions and government consumption, among others, in the growth equations. The authors went on to argue that greater government consumption is associated with a less efficient allocation of resources. In this study the effect of exports and gross domestic saving on the growth process in the ASEAN countries was considered. Ideally, the researchers would have liked to include all these variables; however, due to the small sample size, they were unable to include them all in the growth equation.

state, be equal to the rate of growth of the output. Given a rate or return equals to r, the optimal consumption path is given by the a standard condition:

$$\frac{C_t}{C} = \frac{1}{\sigma}(r = \rho) \text{ Or } g = \frac{1}{\sigma}(r = \rho) \qquad (7)$$

Substituting Eq. (6) with Eq. (7), the researchers obtained the following expression for the rate of economic growth:

$$g_y = g_c = \frac{1}{\sigma}[A^{1/\alpha}\phi F(k^*/K, k/K^*) - 1 \, H - \rho] \qquad (8)$$

Eq. (8) shows the factors which affect the economic growth. In this model, the FDI and domestic investment are the important factors which have a positive impact on the growth processes measured by the foreign capital (k^*/K) and domestic capital (k^*/K) invested to produce products (k^*/K), the FDI and domestic investment reduce the cost of introducing new varieties of capital goods, thus increasing the rate at which new capital goods are introduced. Furthermore, the effects of foreign and domestic investment, on the growth rate of the economy, are positively associated with the level of human capital, that is, the higher the level of human capital (H) in the host country, the higher the effects of the foreign and domestic capital on the growth of the economy.

In this line of research, most earlier studies have included all or a subset of the following variables as the exogenous variables in the growth equation: FDI, domestic investment, financial intermediation, exports and human capital (Romer, 1990; Levine and Zervos, 1998; Borensztein *et al.*, 1998; Beck *et al.*, 2000). Besides the above variables, Eq. (8) introduces a set of variables (A) which affect the economic growth

rate in developing countries. Among the set of the variables, financial intermediation, initial GDP per capita and exports of goods and services are the most variables which encourage the economic growth in the ASEAN-5. In specific, the model used is:

$$g_t = \alpha_o + \alpha_1 FDI + \alpha_2 FI_t + \alpha_3 GDI_t + \alpha_4 X_t + \alpha_5 H_t + \varepsilon_t \qquad (9)$$

where, g denotes the growth rate and as usual, it is measured as by the real GDP per capita growth rate. The *FDI* denotes the logarithm of foreign direct investment, *FI* denotes the logarithm of financial intermediation (M2/GDP), *GDI* denotes the logarithm of the gross domestic investment, *X* is the logarithm of export of goods and services as a share of the GDP (to measure openness), and *H* denotes secondary school attainment as a proxy of human capital.[9] The residual term ε is added to the model to capture the unobserved effects and is assumed to be white noise. In this paper, the researchers used the FDI flow data instead of the FDI stock. Using the FDI flow in the empirical estimation is logically more comparable to measure the trade flows. At the same time, the researchers also included both trade and FDI in the model, since the two variables were expected to play important roles in promoting the international technology diffusion.[10] More importantly, this also allowed the researchers to compare the impact of the two variables on the economic growth. The parameters of the model in Eq. (9) are given by α's, and $\alpha_1 \, \alpha_2 \, \alpha_3 \, \alpha_4 \, \alpha_5 > 0$. For this, the researchers noted that the choice of variables was guided by some previous studies and the availability of data for the sample period.

In order to carry out the cointegration analysis, the researchers formulated the variable space as [*g, FDI, FI, GDI, X, H*]. There are a number of concerns with regards to previous

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[9] Levin and Zervos used bank credit, stock market capitalization and stock market value traded as indicators of financial development. The choice of proxy used in this study (M2/GDP) provided the researchers with considerable more observations to estimate Eq. (9) for the countries under investigation.

[10] In fact, previous findings suggest that the high degree of openness has led countries like Singapore and Korea to experience successful growth in the past few decades. For more detailed discussions on the R&D-based growth models, see Grossman and Helpman (1991) and Romer (1990). It is also noted that the labour input is an important variable in the neoclassical growth models; nevertheless, for the purpose of simplicity, the researchers followed Levine and Zervos (1998), and Borensztein *et al.* (1998) and excluded this variable in the estimated model used in the current study. This might lead to an omitted variable bias in the empirical result of this study.

empirical works which have attempted to model Eq. (9) or its variants. First, while the nature of the $I(1)$ variable has received due recognition, and proper estimation techniques have been used, the short data span typically used in these studies, might distort the power of standard tests, and lead to misguided conclusions. Second, a time series analysis of individual country data could be much more insightful than a cross-country growth equation, because it allowed for different economic structures and rule of law. Third, it is important to distinguish between the long- and short-run relationships. The distinction is important as some variables, mentioned in the earlier section, could be important in the short-run, but as the economy grew and became more matured in the long-run, these effects might slowly disappear. Finally, the researchers split the investment into FDI and all other capitals (domestic or non-FDI). The purpose was to show the impacts of the domestic versus foreign capital on the economic growth. This approach had also been adopted by Most and Van Den Berg (1996) in examining whether the source of investment financing mattered in the developing economies.

The sample of the current study consisted of five ASEAN countries (ASEAN-5: Indonesia, Malaysia, the Philippines, Thailand and Singapore). The study covered the period from 1968 to 2002. The annual data were drawn from two main sources: a) the International Financial Statistics database, the International Monetary Fund (IFS, IMF various issues) and the Asian Development Bank database (ADB, various issues).

ESTIMATION TECHNIQUES

To shed light on the dynamic relationship, between the growth rate and its determinants, the researchers deployed the ARDL cointegration procedure introduced by Pesaran *et al.* (1996, 2001). One important difference between the ARDL and other cointegration techniques, such as Johansen's procedure, is that the procedure does not require pre-testing for unit roots. Hence, the ARDL has the advantage as it obviates

the need to classify of variables into $I(0)$ or $I(1)$.[11] Furthermore, Pesaran and Shin (1999) demonstrated that the appropriate lags in the ARDL model corrected both the serial correlation and endogeneity problems.

To highlight the procedure, consider a model with two variables $[y, x]'$. The variables can be distinguished by estimating each equation considering each of the variables as a dependent variable, as shown in the following equations:

$$\Delta y = \alpha_{0y} + \sum_{i=1}^{n} b_{1y} \Delta y_{t-i} + \sum_{i=0}^{n} b_{2y} \Delta x_{t-i} + \gamma_{1y} y_{t-1} + \gamma_{2y} x_{t-1} + \varepsilon_{1t} \quad (10)$$

$$\Delta x = \alpha_{0x} + \sum_{i=0}^{n} b_{1x} \Delta y_{t-i} + \sum_{i=1}^{n} b_{2x} \Delta x_{t-i} + \gamma_{1y} y_{t-1} + \gamma_{2x} x_{t-1} + \varepsilon_{1t} \quad (11)$$

Here, γ's are long-run multipliers, α's are the drift terms and n is the order of the underlying model. Notice that the lagged values of Δy and the current and lagged values of Δx in Eq. (10) model the short run dynamic structure of the model. Similarly, the lagged values of Δx as well as the current and lagged values of Δy in Eq. (11) capture the short run dynamics of Δx. To test the existence of a long-run relationship between y and x in the above setting, the researchers might rely on the standard *t*- or *F*-statistics (Pesaran *et al.*, 2001; Banerjee *et al.*, 1998). The bound tests (BT) for the absence of any level relationship between x and y, might be tested through the exclusion of the lagged variables y_{t-1} and x_{t-1} in the error-correction model given by Eq. (10). The hypothesis could therefore be examined using the standard *F*-test (or the Wald test). The *F*-test had a non-standard distribution and the critical values were tabulated in Pesaran *et al.* (2001). If the computed *F*- and *t*-statistics are shown to be higher than the upper bound of the critical values, the null hypothesis of the no cointegration could then be rejected. Nevertheless, if the data supports the existence of a long-run relationship, the second stage, a further two-step procedure to estimate growth model is then carried out. In the first step, the researchers utilized the Akaike Information Criteria (AIC) and Schwartz Bayesian Criteria (SBC) to select the order of the lags to

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[11] This issue is relevant in the present context as several authors have pointed out some of the variables used in the growth equation are a mixture of stationary and non-stationary variables.

be employed in the ARDL model. In the second step, both the long- and short-run parameters of the model were estimated.

EMPIRICAL RESULTS

The results of the investigation are reported in Table 1 for each of the countries under investigation. The calculated $F_{\Delta GDP}$ statistics were found to be 9.555 (Indonesia), 6.456 (Malaysia), 3.388 (Philippines), 8.417 (Thailand) and 3.571 (Singapore). Notice that all of the statistics are higher than the upper bound CV (2.08-3.00), i.e. at 10% significance level or better. Meanwhile, the *t*-test tests showed that (with the exception of the Philippines) the calculated statistics were higher than the upper bound CV (-2.57, -3.86)

at 10% significance level. To investigate the uniqueness of the long-run relationship between the variables, the researchers repeated the same exercise by treating each of the variables in Eq. (9) as a dependent variable and computed the corresponding *F*- and *t*-statistics.[12] It is important to highlight that all the computed *F*-values for $F_{\Delta GDI}$, $F_{\Delta FDI}$, $F_{\Delta FI}$, $F_{\Delta X}$, $F_{\Delta H}$, and the *t*-values for $t_{\Delta GDI}$, $t_{\Delta FDI}$, $t_{\Delta FI}$, $t_{\Delta X}$, $t_{\Delta H}$ were found to be lower than the lower bound of CVs or fell within the inclusive range of the CVs. Additionally, the standard unit test (not reported) indicated that all variables which fell within the inclusive range were integrated at the order one, *I(1)*.[13]

To sum up, two important conclusions have emerged from the analysis so far; first, the test

TABLE 1
F-and t-statistic for the analysis of the existence of a long-run relationship

	Indonesia	Malaysia	Philippines	Thailand	Singapore
$F_{\Delta GDP}$(ΔGDP; GDI, FI, FDI, X, H)	9.5548***	6.4560***	3.3880**	8.4168***	3.5708**
$t_{\Delta GDP}$(ΔGDP; GDI, FI, FDI, X, H)	-5.2211***	-3.9810*	-2.0393	-3.9711*	-4.9131***
$F_{\Delta GDI}$(ΔGDI; GDP, FI, FDI, X, H)	1.1694	1.9238	2.3860	1.1892	2.5828
$t_{\Delta GDI}$(ΔGDI; GDP, FI, FDI, X, H)	-.02637	-0.2862	0.4415	-2.4407	-0.6017
$F_{\Delta FDI}$(ΔFDI; GDI, FI, GDP, X, H)	2.0895	2.2262	2.4407	2.3132	1.1833
$t_{\Delta FDI}$(ΔFDI; GDI, FI, GDP, X, H)	-2.2516	-1.9101	-2.6703	-2.8675	-2.1844
$F_{\Delta FI}$(ΔFI; GDI, FDI, GDP, X, H)	2.2407	2.8318	2.3887	2.3255	1.8097
$t_{\Delta FI}$(ΔFI; GDI, FDI, GDP, X, H)	0.2820	-0.4927	-1.1261	0.3657	-0.2801
$F_{\Delta X}$(ΔX; FDI, GDI, FI, GDP, H)	2.0043	2.1330	1.4246	2.8204	2.2792
$t_{\Delta X}$(ΔX; FDI, GDI, FI, GDP, H)	-3.0628	-2.3797	-2.0766	-1.6213	-1.0028
$F_{\Delta H}$(ΔH; FDI, GDI, FI, GDP, X)	2.0083	1.2928	1.0318	2.6996	2.0672
$t_{\Delta H}$(ΔH; FDI, GDI, FI, GDP, X)	-2.2488	0.2820	-2.0371	-1.6974	-0.7887

Note: The lag order (p) of the underlying ECM was selected using the SBC, AIC and the LM tests for residual correlation. The F-statistic was compared with the critical bound of the statistic for the zero restriction on the coefficient of the lagged level variables provided in Peseran et al. (2001); Table C1.ii. The t-statistic was compared with the critical bounds of the statistic for the zero restriction on the lagged level of the dependent variable provided in Pesaran et al. (2001); Table C2.iii. Number of regressors =5. Asterisk (*), (**), (***) denotes that F-statistics and t-statistics above the 10%, 5%, 1% upper bound CV, respectively.

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[12] Pesaran *et al.* (2001) noted that the bounds test was based on a single equation approach and therefore, it was inappropriate to apply this test when more than one long-run relationship existed.

[13] To conserve space, the results of the standard unit root test are not reported here, but they are available upon request.

statistics pointed to the fact that there a "unique and stable long-run relationship" exists between the per capita GDP and its determinants; second, the outcomes of the bound tests suggested that the five independent variables in Eq. (9) could be treated as exogenous variables in the growth model. Like the exports-growth nexus, the FDI causes economic growth in the FDI-growth nexus. Thus, the findings are in favour of the export-led growth and investment-led (or FDI) growth hypotheses. The two causal relations suggest that two important sources of growth in the ASEAN-5 are exports and investments (both domestic and foreign investments).

Given the evidences presented in Table 1, the researchers then proceeded with the estimation of the long-run parameters of the growth model for the ASEAN-5. It was noted that the ARDL method possessed the additional advantage of yielding consistent estimates of the long-run parameters known to be asymptotically normal, irrespective of whether the variables are $I(0)$, $I(1)$ or mutually integrated. In addition to this, Pesaran *et al.* (2001) have demonstrated that appropriate lags in the ARDL are important to correct both the serial correlation and problems associated with endogenity. To this end, the researchers relied on the SBC, and the results are reported in Table 2.

The empirical results clearly highlighted the importance of domestic investment and exports in the growth process of the five ASEAN countries. It is crucial to note that the coefficients are statistically significant at conventional significance levels and both carry a positive sign. The coefficient for the domestic capital varies from 0.027 (Indonesia) to 0.506 (Singapore), and as for FDI, it ranges from 0.032 (Malaysia) to 0.094 (Indonesia), excluding the Philippines, where the coefficient was found to be positive but statistically insignificant. Similarly, it is useful to note that the gross domestic savings ratio in the Philippines declined for the sample period under investigation. As for the other ASEAN countries, the same ratio was found to increase sharply over the same period.

Based on the growth equation, it is clear that FDI has an exogenous positive effect on the economic growth in all the ASEAN countries (with the exception of the Philippines). As expected, with the same levels of FDI, different outcomes were yielded in terms of growth. As for Indonesia, Malaysia, Thailand and Singapore, restrictions and barriers to foreign capital were modified or removed in the 1980s. In the Philippines, the Foreign Act of 1991 only relaxed the rules and regulations on the FDI. In addition, the net FDI to GDP (0.8%) was relatively low as compared to other ASEAN countries (for example, the figure is around 4.3% for Malaysia). At the same time, the Philippines also did not have a good infrastructure for the FDI (Marwah and Tavakoli, 2004). Moreover, the Philippines imposed restrictions and high tariffs on imports until the late 1990s. Import restriction and tariff rates were only reduced after the economic reforms in the 1990s. Thus, the lack of openness to capital inflows (technological diffusion) into the Philippines has accounted for the relatively poorer growth rates for this country. On the whole, the evidence appeared to be in favour of the hypothesis that FDI was growth enhancing. Therefore, an important policy lesson, which emerged from this finding, was that policies that tended to limit the free flow of FDI might affect the economic growth.

The researchers have also noticed that growth is more responsive to domestic investment than the FDI in the long-run model; the sole exception is Indonesia. All in all, the evidence suggests that the domestic investment in ASEAN is an important element in the growth equation. In particular, the point estimated for the FDI was lower than the coefficient for the national savings (GDI) in Singapore, Malaysia, the Philippines and Thailand. This suggests that foreign capitals in the form of FDI are not more productive than the GDI. Thus, finding of the current study is in line with a recent study by Sato (2003) and the firm-level study by Aitken and Harrisson (1999) and Haddad and Harrison (1993), among others.[14] As for the case of Indonesia, the evidence suggests that the FDI is more productive than the domestic investments in the long-run growth equation.

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[14] Based on the panel studies, Sato (2003) also provides some suggestive evidences that the impacts of foreign capital (including FDI) on growth are not more productive than the national savings, implying that there is no or little spill-over effects from the FDI.

More importantly, the results of the current study suggested that the FDI, by itself, contributed positively to economic growth but the domestic investment yielded higher benefits than the FDI in all but one country—Indonesia. In the study by Borensztein *et al.* (1998), it was argued that in order for the FDI to have a beneficial impact on growth, the host country must have attained a sufficient high level of development (education). The researchers did not dispute the argument that more human capital would result in higher economic growth, but the positive contribution of the FDI to growth (as reported in this study) challenged the notion that the FDI could be beneficial only in the presence of sufficient levels of human capital. Interestingly, the researchers also found that the point estimates of exports variables were not only positive but also larger than the FDI. The long-term effects of the international R&D spill-overs, through the international trade on growth, were observed in all the countries under investigation (including the Philippines). Just like the other ASEAN countries, the Philippines is also an export-led growth economy. As shown in Table 2, the general results appear to indicate that the impacts of exports on the economic growth are larger than the FDI. This is an important result as it indicates the importance of the export-oriented strategy in the development process of the ASEAN-5 economies.

With the sole exception of Indonesia (positive but insignificant), human capital (H) has been indicated as a positive effect on growth, and it is significantly different from zero at conventional significance levels. Human capital (skill and educational levels) directly affects economic growth. In specific, it emerged as the most important variable for Malaysia (0.394), the Philippines (0.383) and Thailand (0.682). This finding seemed to remind us the importance of human capital in the growth prospects of

TABLE 2
The long-run growth model (dependent variable per capita GDP)

Regressor	Countries				
	Indonesia	Malaysia	Singapore	Philippines	Thailand
GDI	0.0266	0.1198	0.5058	0.2072	0.4596
	[2.2051]**	[4.3619]***	[6.3362]***	[2.8395]***	[4.5518]***
FDI	0.0938	0.0316	0.0578	0.0058	0.0447
	[2.1594]**	[3.1237]***	[1.7973]*	[0.0249]	[1.7470]*
FI	0.1965	0.1406	0.9988	-0.1472	0.0012
	. [5.0628]***	[2.2288]**	[12.278]***	-[1.3115]	[0.0076]
X	0.1803	0.2404	0.3427	0.3171	0.1533
	[2.3424]**	[5.8473]***	[3.5837]***	[2.6012]***	[1.7700]*
H	0.0866	0.3941	0.1021	0.3833	0.6824
	[1.4767]	[2.5580]**	[1.7402]*	[2.3630]**	[3.8951]***
C	-1.0238	-6.8715	-3.4903	9.3996	-17.354
	[1.2163]	[-5.6539]***	[8.8317]***	[6.9918]***	[-7.5677]***
Time Period	1969-2002	1968-2002	1969-2002	1970-2002	1968-2002

Note: Asterisks (***), (**), (*) represent 1%, 5%, 10% significant levels, respectively. The t-ratios are reported in square brackets. The following notation applies: GDP denotes per capita gross domestic product; GDI, gross domestic investment; FDI, foreign direct investment; FI, financial intermediation (M2/GDP); H, human capital; X exports of goods and services.

the ASEAN economies.[15] There is now a large literature following the work of Barro (1991) and Gemmel (1996), which have consistently revealed that the human capital is growth-enhancing. Finally, financial intermediation (F1) enters with a positive significance in three countries, namely Singapore, Malaysia and Indonesia. From a policy perspective, this means that the financial reforms, undertaken in the post-crisis period, by these countries are expected to improve the economic prospects of the crisis-affected countries. The variable appeared to have the most impact on the growth of Singapore (0.999) and Indonesia (0.197). Interestingly, the researchers discovered that financial intermediation played an important role for the matured economy like Singapore. This might not be consistent with the argument made by Fase (2001) and Darrat (1999), i.e. as the country matured, the relationship between financial and economic growth disappeared. For the case of Thailand and the Philippines, financial development appeared to have no significant effect on growth. Therefore, the evidence between the relationship on financial development and economic growth in the region is mixed. Nonetheless, the researchers believed that the conflicting results might have arisen due to the different stages of development in the financial markets in these ASEAN countries. At the same time, the researchers also noticed that despite the rapid development in the financial structure in Thailand, it was still dominated by a small group of banks, limited availability of financial instruments and thin capital market with the exception of the stock market.[16]

In general, the long-run results yielded in the present study are in line with the findings of the growth literature in that foreign and domestic investments, financial intermediation, exports and human capital are primary sources of economic growth (Levine, 1997; King and Levine, 1993; Beck *et al.*, 2000) just to name a few. In more specific, the statistical evidence found in this study did not support of the notion that financial deepening encouraged capital flight as claimed by authors like Akinlo (2004).

The short-run dynamics of the economic growth, based on ARDL models the ASEAN-5 countries, are displayed in Table 3. A battery of diagnostic checks indicated that the models selected had been adequately specified. None of the statistics shown in the table are significant at the 5% level. The models satisfied the conditions of the non-autocorrelation, homoskedasticity and normal disturbance. The adjusted R^2 ranged from 0.76 (Thailand) to as high as 0.96 (the Philippines), suggesting that the error correction models (ECM) fitted the data reasonably well for all the countries under consideration.

As shown in Table 3, the estimated value of the lagged error-correction term (ECM_{-1}), based on the ARDL method, is negative and less than unity. The coefficient is statistically significant, implying that the ECM tends to cause per capita GDP to monotonously converge to its long-run equilibrium path in relation to the changes in the exogenous "forcing variables." This finding further strengthens the earlier results on the long-run equilibrium relationship between per capita GDP and GDI, FDI, FI, X, and H (*see* Kremers *et al.*, 1992 on this issue). The coefficients of the lagged ECM ranged from as high as 0.696 (Malaysia) to as low as 0.393 (Indonesia), suggesting that the speed of re-adjustment to equilibrium following a shock is fairly rapid. For instance, Malaysia had more than 69 % of the adjustment completed in a year.

The coefficients of the domestic investment and FDI are positively signed and again, the size of the coefficient of the domestic investment is noticeably larger than the FDI in four out of the five countries, indicating that the domestic investment is more effective in boosting the economic growth than the FDI, even in the short-run. The literature has suggested that domestic

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[15] The Philippines exhibited some favourable educational trends in relation to the other ASEAN countries. Secondary enrolment in the early 1990s exceeded those of Indonesia and Thailand. At the tertiary level, the percentage exceeded that of Malaysia, Thailand and Indonesia (Canlas, 2003). There is also a need to explore alternative proxies of the education variable and its role in facilitating technological progress. Unfortunately, limited data precluded the researchers from pursuing this extension.

[16] The banking system in Thailand is highly concentrated with two-thirds of the total bank assets being accounted for by the five largest banks (Chowdhury, 1997).

TABLE 3
Error correction models (dependent variable per capital GDP)

Regressor	Countries				
	Indonesia	Malaysia	Philippines	Thailand	Singapore
ECM (-1)	-0.3925	-0.6962	-0.4207	-0.42488	-0.5572
	[-4.7028]***	[-5.6081]***	[-3.3369]***	[-5.2792]***	[-8.4403]***
ΔGDI	0.0105	0.0834	0.0872	0.19526	0.2818
	[2.1041]**	[3.7962]***	[2.5975]***	[8.1840]***	[5.2877]***
ΔFDI	0.0858	0.0220	0.0024	0.0194	0.0321
	[5.4458]***	[3.4693]***	[0.0250]	[1.9392]*	[1.7618]*
ΔX	0.0707	0.2610	0.1334	0.0651	0.4120
	[2.7272]***	[6.8167]***	[3.0802]***	[1.8744]*	[4.7810]***
ΔFI	0.18294	0.0979	0.0264	0.0051	0.3281
	[4.5136]***	[1.8942]*	[0.5055]	[0.0076]	[4.5409]***
ΔH	0.0340	0.2744	0.1613	0.2830	0.0569
	[1.5946]	[2.6411]***	[1.7119]*	[5.3624]***	[1.7131]*
C	-0.4018	-4.7838	3.9548	-7.3737	-1.9448
	[-1.3263]	[-3.4964]***	[2.9760]***	[-8.0814]***	[-6.6420]***
$\overline{R}^2$	0.77	0.94	0.96	0.76	0.79
Diagnostic Tests					
A: AR (1)	2.0540	1.3777	1.6015	0.3081	0.9699
	[0.152]	[0.241]	[0.206]	[0.579]	[0.325]
B: RESET (1)	0.7706	1.3454	1.8860	0.0313	0.0342
	[0.689]	[0.246]	[0.170]	[0.842]	[0.853]
C: NORM. (2)	0.8876	0.1087	0.8806	0.1559	0.2362
	[0.642]	[0.947]	[0.642]	[0.925]	[0.889]
D: HETRO. (1)	0.32812	0.9235	0.5226	1.1073	0.8474
	[0.567]	[0.337]	[1.045]	[0.293]	[0.357]

Notes: The SBC selects an ARDL (1,1,1,0,0,0) for Indonesia, (1,0,0,1,0,0) for Malaysia, (1,0,1,0,1,0) for Singapore, (1,0,0,0,0,1) for Thailand, and (1,0,0,0,0,0) for the Philippines. For example, (1,1,1,0,0,0) for Indonesia means that 1 lag was imposed on the GDI, 1 lag on FDI, one lag on X, 0 lag on FI and 0 lag on H. The *t*-ratios are presented in square brackets. Asterisks ***, **, * represent 1%, 5%, 10% significant levels, respectively. denotes the first difference of each variable. The following notation applies: GDP denotes per capita gross domestic product; GDI, gross domestic investment; FDI, foreign direct investment; FI, financial intermediation (M2/GDP); H, human capital and X, export of goods and services. The probabilities of for the diagnostic tests are represented in square brackets. A: Lagrange multiplier based on the Breusch-Pagan LM test for residual serial correlation; B: Ramsey's RESET test using the square of the fitted values; C: Based on a test of skewness and kurtosis of residuals; D: Based on the regression of squared residuals on squared fitted values.

capital is largely used in lower industrial activities and that foreign capital is usually invested in high technology innovations. The results gathered in the current study suggested that this might not be the case for the emerging ASEAN countries selected for this study.

The results presented in Table 3 show a statistically and economically significant relationship between financial intermediation and economic growth in Singapore, Malaysia and Indonesia. The effect is more pronounced in a country with a larger and more efficient capital

market. It is worth highlighting that the recent literature points out the fact that the financial intermediary sector can alter the path of economic progress, but the dispute is on the fundamental channels, in which financial intermediaries are connected to growth. According to the Schumpeterian view, the financial intermediary sector alters the path of economic progress by affecting the allocation of savings and not necessarily by altering the rate of savings. This view highlights the impacts of financial intermediaries on the growth of total productivity. Alternatively, a vast development economics literature argues that better financial intermediaries influence growth primarily by raising domestic savings rates and attracting foreign capital (Beck *et al.,* 2000). Thus, the result of the present study seems to be consistent with the view that financial intermediation exerts a significant impact on economic growth. This could be through one or both channels which connect financial intermediaries to growth. The empirical evidence holds both in the short- and long run.

In the survey of the literature presented in this study, the researchers found that there was no obvious agreement on whether the causality in the exports-growth nexus ran from export to economic growth, i.e. the export-led growth hypothesis. However, the empirical findings of this study, gathered from the ARDL bounds tests, are in favour of the export-led-growth hypothesis. There is a positive correlation between exports (openness) and economic growth (productivity) and that an outward-oriented trade strategy will enhance growth (*see* Table 3). Given that the pattern of the FDI flows to ASEAN countries was mostly in manufacturing (manufacturing FDI), it was therefore expected that the FDI inflow would lead to a higher growth. Thus, the findings of this study broadly support the argument that the FDI has made a positive contribution to the economic growth of the ASEAN countries. Furthermore, export-expansion oriented policies are crucial in stimulating both the domestic and foreign investments and consequently, the economic growth. Some other earlier studies have also

verified the growth effect of exports. For instance, Sachs (2000) found that countries which were successful in export-promotion policies and attracting FDI could earn foreign exchange reserves as well as facilitate the upgrading of the nation's technologies, which in turn, would affect growth (*see also* Grossman and Helpman, 1991; Marwah and Tavakoli, 2004).

The researchers also investigated the impacts of human capital on per capita GDP. The results reveal that human capital has a positive and significant effect on enhancing economic growth in all countries, except Indonesia. The implication of this is that the presence of a sufficient level of human capital in the host economy increases the capability of the economy to receive more advanced technology, and thereby enhances the process of the productivity growth. This result is consistent with the view in the literature that human capital is one of the major determinants of the long-run growth rate (Barro, 1991). The result yielded for Indonesia was rather surprising. Perhaps, it is a result which indicates that the manufacturing sector in Indonesia is still focusing on low-technology (or simple electronic) products. Of course, further research is needed to obtain a more reliable conclusion.

Finally, the stability of the long-run parameters and the short-run movements for each equation was also examined. To this end, the researchers relied on the cumulative sum (CUSUM) and cumulative sum squares (CUSUMSQ) tests proposed by Brown *et al.* (1975). The plot of CUSUM and CUSUMSQ statistics (no shown here) stays within the critical 5% bounds for all equations. Neither CUSUM nor CUSUMSQ plots cross the critical bounds, indicating no evidence of any significant structural instability. Surprisingly, the tests could not show that the crisis affected the growth process in the region (including Thailand). As pointed by Selover (1999), the crisis of 1997 was highly currency and financial events with high liquid capital flows which moved with incredible speed. As such, these events could not be captured by merely using annual data.[17]

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[17] The researchers also added a dummy variable to account for the 1997 Asian financial crisis in the model. The variable was excluded from the model since it was insignificant at usual significance levels. This might indicate that all the countries under investigation had recovered in a short time period.

CONCLUDING REMARKS

This article examined the key factors which determined the economic growth in the ASEAN-5 countries which have received considerable FDI inflows. An important conclusion emerged from the bounds tests was that all the countries generally shared a common set of determinants of growth. On the contrary, it was also noticed that the impact of the determinants tended to vary across the countries under investigation. The results presented in this paper showed that domestic investment, exports and FDI are important variables which propel growth in the region. This supports the hypothesis that policies that seek to enhance investments, both domestic and foreign, are effective means of promoting economic growth. This outcome is in line with the view that if a country is planning to impose its capital control, the last type of capital it ought to control is the FDI. Such a control may lead to significant costs in terms of growth. Moreover, the researchers also observed that the impact of FDI was positive in both the short- and long-run, the fact which thus rejected the dependency hypothesis. In addition, it was also noted that even a technologically advanced economy like the US could gain benefits from the FDI and the gain from FDI was substantial in the long run.

The results of this study also indicated that domestic investment played a more important role than the FDI in explaining the economic growth in the ASEAN countries, except for Indonesia. One possible explanation for this was that domestic firms in the all ASEAN countries had better knowledge of and greater access to domestic markets. This result holds both in the short- and long-run. This is also a key finding of this study and it contradicts the findings from studies done for the low-income developing countries. Another important point to note is that the share of private and public investments, to total investment for the ASEAN countries in the past two decades, was considerably higher than that in the other developing countries. For Malaysia and Thailand, public investment grew much faster than their private investment, and the reverse was true for Singapore which has achieved the status of an industrialized nation. The involvement of the governments in productive activities, such as electricity generation and water supply, has also contributed to the fast growth in the region (Wong, 2002; Baharumshah and Suleiman, 2009).

The new policy direction is to promote domestic investment as the main engine of growth for the economy. A strong commitment to domestic resources is critical for the macroeconomic stability and to ensure sustainable long-term growth in an era where the FDI is becoming more competitive.

The empirical results also indicate, among other things, that financial intermediation is crucial to economic growth particularly in countries like Singapore, Malaysia and Indonesia, the fact that supports the growth-enhancing hypothesis of financial development. Policies which foster financial deepening would likely be to increase economic growth. By and large, the results also reveal that the impact of financial development is largest in Singapore, the country with the most sophisticated and highly developed financial market in the region. The researchers found that the variable was positive but insignificant for two ASEAN countries, namely Thailand and the Philippines. However, there is no evidence which suggests that the capital outflow, from these capital-scarce countries to capital abundant countries, with better financial institutions for the sample period ending in 2002.

With respect to human capital, this study found that the effect of human capital on economic growth was determined by not only on the growth of the human capital but also on the development level of the human capital. As such, improvement in the human capital, through educational policies that raise the supply and quality of human capital, increases the capability of the economy to receive advanced technology which further enhances both domestic and foreign investments; this will in turn lead to sustainable economic growth. It was also noted that Indonesia was the sole exception, since the human capital effects on growth were not persuasively (positive but insignificant) shown by the econometric results, even in model for the long-run growth.

The evidence presented in this paper suggests that export expansion policies are crucial to stimulate economic growth. These results hold for Indonesia (large economy) and for the smaller ASEAN economies, such as Malaysia and Thailand. This finding reminds us of the weakness of the countries pursuing inward-oriented strategies as suggested by the earlier studies. The growth in exports creates profitable opportunities for investment, which further encourages foreign and

domestic investments. This leads to further export growth and thus economic growth – export-led growth. The researchers consider this as a critical factor which will determine the success of both the short- and long-term growth in the new millennium for the ASEAN countries. Indeed, this finding is in line with the empirical literature of the 1990s, which was done based on the plant-level data that suggested firms entering the export markets were more productive than the non-exports, and that this difference in productivity was achieved even before these firm became involved in exporting. Lopez (2005), in his recent article, argued that in order to help developing countries foster growth and development, industrialized nations should reduce their trade barriers for goods produced in poor countries. For example, a reduction in the non-tariff barriers would increase the profitability of exporters. This would then induce many firms in the developing economies to adopt modern technologies and increase the quality of goods they produced. This innovation, in turn, will increase productivity and if spill-overs are present, it may generate considerable productivity improvement in the developing economies.

The effects of R&D spill-over, through international trade on growth rates, are shown to be larger than the FDI. Therefore, the empirical evidence suggests that as the ASEAN exports return to their pre-crisis growth rates, their economic performance will recover, as evident during the 1999-2002 period. Finally, the evidence provided suggests that a public policy, aimed at enhancing domestic investments, FDI, human capital and exports, will continue to be relevant for the both the long- and short-term growth. The two important components of globalization, namely international trade and international investment (FDI), have a positive effect on growth and therefore, the researchers may conclude that globalization is good for these ASEAN countries. Sachs (2000) also found that these five countries belonged to a list with the most successful export-promotion policies and attracting FDI. In addition, these countries have also have won the race in absorbing technologies from abroad.

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