Examining the Causal Linkages among Domestic Investment, FDI, Trade, Interest Rate and Economic Growth in ASEAN-5 Countries

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ABSTRACT

The aim of this study is to empirically analyse the linkages among domestic investment, foreign direct investment (FDI), trade, interest rate and economic growth in the ASEAN-5 regions in the period 1970-2012. The Johansen-Juselius cointegration approach is applied to examine the long-run relationship and the Granger causality approach is applied to evaluate the causal linkages among the variables. The results confirm the existence of long-term causal links between domestic investment and FDI for the ASEAN-5. This means that collaboration of domestic and foreign investors is essential as the development of domestic firms contributes to further participation by multinational investors. We also reveal that domestic investment and FDI are growth enhancing and their impact is felt in both short- and long-run in the majority of the ASEAN-5 markets, indicating that these three variables are interrelated since they could be attracted to the growing economies. Thus, economic policies that aim at improving and promoting both local and foreign enterprises are indeed necessary in stimulating economic growth in the ASEAN-5 nations.

Keywords: ASEAN-5, Causality, Cointegration, Domestic Investment, Foreign Direct Investment, Economic Growth
JEL Classifications: C32, O11

1. INTRODUCTION

Defining the determinants of economic growth is an important obligation across different economies (Parjiono, 2009). Therefore, policymakers are interested in knowing how to generate high economic growth, especially in developing countries which are always aiming to upgrade their status to developed nations. Owing to this, both theoretical and empirical researches have extensively discussed and explored the potential engines of growth. According to economic literature, one of the most important elements for sustainable economic growth is investment or capital accumulation, especially in determining the long-run productive capacity of an economy because investment creates new capital goods, and capital stock will grow quickly (Romer, 2001). Additionally, Findlay (1978), Wang (1990), Parjiono (2007), Tang (2008), Jajri (2009), Pradhan (2009), Srinivasan et al. (2010), Chakraborty and Mukherjee (2012) confirmed that foreign direct investment (FDI) inflows will produce a number of favourable economic effects on the recipient countries, which

in turn may stimulate economic growth by generating various positive externalities and spillover effects. Although FDI has been proven to generate growth, policymakers should be aware of local preferences as they cannot rely on one-size-fits-all strategy in sustaining their economic growth. In fact, Griffin and Enos (1970) narrated that the influx of foreign capital from developed to less developed countries is an attempt to exploit the recipient country's natural resources rather than aids, thus not a reliable source for sustainable long-term economic growth. Despite this argument, domestic investment could be another important driver in the process of economic growth and development of a country (De Long and Summers, 1991, 1992, 1993; Choe, 2003; Liwan and Lau, 2007; Balcioglu and Vural, 2009, Tan and Tang, 2012; Tang and Tan, 2015). Therefore, the present study is set out principally to examine the linkages between domestic investment, FDI and economic growth in the ASEAN-5 economies.

The Associations of Southeast Asian Nations (ASEAN) which consists of 10 fast growing countries each at different stages of

economic and financial development and with a current combined population of over 622 million represents one of the largest regional markets in the world. Among the ASEAN member states, the economies of the ASEAN-5, namely Indonesia, Malaysia, the Philippines, Singapore and Thailand, are the most advanced. The unexplored causal relationship between domestic investment, FDI and economic growth in the ASEAN-5 countries poses an area of concern, as it could spell problems for these nations in their quest in achieving growth targets. In addition, their economic performance would obviously have impact and repercussion on the other member states as well as on the agenda for financial and economic integration in the ASEAN region as a whole. Obviously, previous studies have failed to find the consensus results of the causal linkages between these three variables. Some studies found one way linkages between domestic investment and economic growth (e.g., Adam, 2009; Balcioglu and Vural, 2009), while some found bi-directional causality between domestic investment and economic growth (e.g., Tang, 2008; Tang and Tan, 2012; Omri and Kahouli, 2014), yet others have found no evidence of causality relationships (Lean and Tan, 2011). In terms of FDI-led growth causality, Lean and Tan (2011) identified the one-way causal linkages between FDI and economic growth in Malaysia. In turn, Chakraborty and Mukherjee (2012) found evidence that higher economic growth leads to more FDI inflows in India. From other aspects, the study of Srinivasan et al. (2010) and Tan and Tang (2012) reveal that FDI is bi-directional causality with economic growth in Malaysia. Meanwhile, Omri and Kahouli (2014) have recently utilised the generalised method of moments to analyse the inter-relationship among FDI, domestic capital and economic growth in 13 Middle East and North Africa (MENA) countries. The study supports the view that bi-directional causal linkages exist between FDI and growth. Traditionally, higher domestic and foreign investment will further stimulate economic growth. However, the nexus between domestic investment and FDI also remains controversial. There are some studies which indicate the existence of one way linkages between domestic investment and FDI (e.g., Herzer and Schrooten, 2008; Tang, 2008; Lean and Tan, 2011; Chakraborty and Mukherjee, 2012; Omri and Kahouli, 2014), and some found bi-directional causality running between domestic investment and FDI (e.g., Tan and Tang, 2012; Elboiashi et al., 2009), whereas some others found no evidence of nexus between domestic investment and FDI (Adams, 2009).

Based on the above mentioned, this study aims to analyse the long-run relationship and the causal relationship between economic growth, domestic investment, FDI, trade and interest rate in the ASEAN-5 economies. This study contributes to the debate on the directionality of causal relationship among the economic determinants that could vary significantly from country to country, a condition which necessitates the discussion on the role of unique country specific factors in influencing economic growth. If domestic investment and FDI are proved to be influencing each other, this linkage presents a further catalyst for economic growth. The formation of the ASEAN Economic Community (AEC) and the adoption of the AEC Blueprint 2025 recently reiterate ASEAN's commitment to re-establish and continue with the investment liberalisation agenda and investment policies to sustain and enhance the attractiveness of ASEAN as an investment

destination for both domestic and international investors. In other words, the understanding of the causal relationship between domestic investment, FDI and economic growth may help to rectify the imbalances that may arise in the direction of domestic investment and FDI for the acceleration and optimisation of economic growth. The causality framework determined will allow policy makers and governments to establish more precise policies for the development of the investment sector in terms of sustaining and stimulating economic growth among the five ASEAN economies. Therefore, it is sensible and timely to examine the linkages between domestic investment, FDI and economic growth in the ASEAN-5 countries. To achieve the objectives of this study, we first use the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests to check the stationarity properties of each series. Then, the multivariate cointegration test developed by Johansen and Juselius (1990) will be used to find the potential long-run equilibrium relationships between the variables of interest. Finally, the Granger causality test will be employed to ascertain the direction of causality between economic growth and its determinants.

The rest of this paper is organised as follows. Section 2 discusses the methodology and data issues while Section 3 presents the empirical results. Conclusion and policy implication are given in Section 4.

2. METHODOLOGY AND DATA

In what follows, this study estimates the impact of domestic investment, FDI, trade and the real interest rate on economic growth. These aspects that are standard in growth and investment literatures and capture the channels discussed in the introduction section above are the aggregate production functions derived from the augmented Solow model (Mankiw et al., 1992). In addition, this study also incorporates total trade and real interest rate as explanatory variable in the sources of the growth equation. As assessed by Mankiw (1995), a large elasticity of substitution might arise because of international trade. As in traditional Heckscher-Ohlin trade theory, international trade in goods equalises factor process in countries with different factor endowment. Hence, the implication of this factor-price-equalisation theorem in growth theory is that trade increases the economy's ability to substitute capital and labour. Additionally, the increment of a country's endowment will then increase exports of capital-intensive goods and raise imports of labour-intensive goods (without altering the returns to either capital or labour). Furthermore, Shafik and Jalali (1991) claimed that the evolution of the world economy over the past four decades has opposed the existing economic thinking of a negative relationship between real interest rates and growth of the economy. Alternatively, McKinnon (1973) and Shaw (1973) have advocated that the level of investment will be higher with an increase in real interest rates due to the elimination of credit rationing as a result of greater saving mobilisation. Asserted by Romer (1986), Lucas (1988) and Scott (1989), high real interest rates may be a reflection of growing investment opportunities and increasing returns because of externalities and therefore are consistent with rapid growth. Thus, there may be a nexus between domestic investment, FDI, trade, real interest rate and economic

growth in the ASEAN-5 developing countries. Accordingly, the model which will be utilised to capture the relationship between the variables of interest in this study is presented as below:

$$GDP_t = f(DI_t, FDI_t, XM_t, R_t) \qquad (1)$$

where GDP_t denotes the real gross domestic product (GDP); DI_t is the domestic investment which we proxy by the deduction of FDI from gross fixed capital formation (GFCF); FDI_t denotes FDI inflows; XM_t denotes total trade; and R_t is the interest rate - proxy by real deposit interest rate.

The analysis period of this study is from 1970 to 2012. The data of real GDP, GFCF and total trade are sourced from the United Nation Conference on Trade and Development, whereas the data of FDI inflows are taken from UNCTAD, Division on Investment and Enterprise, World Investment Report and the real interest rate data are collected from International Financial Statistics, published by the International Monetary Fund. Furthermore, all variables are transformed into a natural logarithmic form except the interest rate (R_t) variable, thereby allowing a better regression treatment as economic time series data are exponential with respect to time, and a log transformation changes the vertical scale to linear. In addition, log transformation makes elasticity calculations easier, as the estimated coefficients are approximate to the percentage changes in variables (Gujarati and Porter, 2008). At the same time, all variables are expressed in real terms (2005=100) before the analysis and the resulting model can be expressed in equation (2):

$$\ln GDP_t = \beta_0 + \beta_1 \ln DI_t + \beta_2 \ln FDI_t + \beta_3 \ln XM_t + \beta_4 R_t + \varepsilon_t \qquad (2)$$

where ln denotes the natural logarithm and ε_t is the residuals assumed to be normally distributed and white noise.

The analysis begins with the test of unit root in order to determine the stationarity of the variables used in this study. After confirming the order of integration in all the series using the unit root tests, the Johansen (1988, 1991) and Johansen and Juselius (1990) techniques are applied to determine the long-run relationships between the various series (MacKinnon, 1991; Maddala, 2001). The Johansen-Juselius cointegration procedure has several advantages over the residual-based Engle-Granger two-stage approach in testing for cointegration. Phillips (1991) documented the desirability of this technique in terms of symmetry, unbiasedness and efficiency. The procedure also does not suffer from the problems associated with normalisation and it is robust to departures from normality (Gonzalo, 1994) and when conditional heteroskedasticity is present (Lee and Tse, 1996). The test utilises two likelihood ratio (LR) test statistics for each cointegration vector. The maximum eigenvalue is $\left[T \ln(1 - \hat{\lambda}_{i+1}) \right]$ and trace statistics are $\left[-T \sum_{}^{p} \ln(1 - \hat{\lambda}_1) \right]$.

The maximum eigenvalue test (λ − max) is based on the comparison of H_0 (r−1) against the alternative H_1 (r). In general, the null hypothesis H_0: $r=0$ is tested against an alternative H_1: $r=1$, against H_2: $r=2$ and so on. In the trace test, the null hypothesis (H_0)

is that there is at most t co-integrating relationships, for example $r = 0, 1, 2, 3$, is tested against a general alternative. Critical values for both the maximum eigenvalue and trace test are tabulated in Osterwald-Lenum (1992). If there is cointegration between two variables, there exists a long-run effect that prevents the two series from drifting away from each other and this will force the series to converge into long-run equilibrium.

In investigating the causal relationship between domestic investment, FDI, trade, real interest rate, and economic growth, the direction of causality between the two series must be determined. Engle and Granger (1987) pointed out that if the two series are cointegrated, then there must be Granger causation in at least one direction, otherwise an error-correction mechanism exists. Therefore, the vector error correction model (VECM) is used to test the short-run granger causality relationship between investment and economic growth in the ASEAN-5 countries from 1970 to 2012. The multivariate VECM can be written as:

$$\Delta \ln GDP_t = \alpha_1 + \sum_{i=1}^{p} \kappa_{1i} \Delta \ln GDP_{t-i} + \sum_{i=1}^{p} \vartheta_{2i} \Delta \ln DI_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta \ln FDI_{t-i}$$
$$+ \sum_{i=1}^{p} \phi_{4i} \Delta \ln XM_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta R_{t-i} + \delta_1 EC_{t-1} + \varepsilon_{1t} \qquad (3)$$

$$\Delta \ln DI_t = \alpha_2 + \sum_{i=1}^{p} \vartheta_{2i} \Delta \ln DI_{t-i} + \sum_{i=1}^{p} \kappa_{2i} \Delta \ln GDP_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta \ln FDI_{t-i}$$
$$+ \sum_{i=1}^{p} \phi_{2i} \Delta \ln XM_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta R_{t-i} + \delta_2 EC_{t-1} + \varepsilon_{2t} \qquad (4)$$

$$\Delta \ln FDI_t = \alpha_3 + \sum_{i=1}^{p} \varphi_{3i} \Delta \ln FDI_{t-i} \sum_{i=1}^{p} \kappa_{3i} \Delta \ln GDP_{t-i} + \sum_{i=1}^{p} \vartheta_{3i} \Delta \ln DI_{t-i}$$
$$+ \sum_{i=1}^{p} \phi_{3i} \Delta \ln XM_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta R_{t-i} + \delta_3 EC_{t-1} + \varepsilon_{3t} \qquad (5)$$

$$\Delta \ln XM_t = \alpha_4 + \sum_{i=1}^{p} \phi_{4i} \Delta \ln XM_{t-i} + \sum_{i=1}^{p} \kappa_{4i} \Delta \ln GDP_{t-i} + \sum_{i=1}^{p} \vartheta_{4i} \Delta \ln DI_{t-i}$$
$$+ \sum_{i=1}^{p} \varphi_{4i} \Delta \ln FDI_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta R_{t-i} + \delta_4 EC_{t-1} + \varepsilon_{4t} \qquad (6)$$

$$\Delta R_t = \alpha_5 + \sum_{i=1}^{p} \gamma_{5i} \Delta R_{t-i} + \sum_{i=1}^{p} \kappa_{5i} \Delta \ln GDP_{t-i} + \sum_{i=1}^{p} \vartheta_{5i} \Delta \ln DI_{t-i}$$
$$+ \sum_{i=1}^{p} \varphi_{5i} \Delta \ln FDI_{t-i} + \sum_{i=1}^{p} \phi_{5i} \Delta \ln XM_{t-i} + \delta_5 EC_{t-1} + \varepsilon_{5t} \qquad (7)$$

where Δ is the first difference operator, α's, κ's, ϑ's, φ's, γ's are the estimated coefficients and the residuals ε_{it} are assumed to be normally distributed white noise. From the above equations, EC_{t-1} is the one period lagged error-correction term derived from the cointegrating equation. The coefficient of the EC_{t-1}, $\square_1 \ldots$, $\square_5$ capture the adjustment of $\Delta \ln GDP_t$, $\Delta \ln DI_t$, $\Delta \ln FDI_t$, $\Delta \ln XM_t$

and ΔR_t towards long-run equilibrium. The significance of the EC_{t-1} term represents the long-run causality. The joint significance F-test on the first differenced explanatory variables depicts the short-run causality.

3. RESULTS AND DISCUSSION

First of all, the ADF and PP unit root tests are employed to test the stationarity of the data. The Akaike Information Criterion (AIC) is used to define the optimal lag length as the ADF unit root test is sensitive to the lag length and bandwidth incorporated into the testing equation. The results for the ADF and PP unit root tests are reported in Table 1.

For all the ASEAN-5 countries, it is clear that all the series are nonstationary at the level because the null hypothesis of each series is not rejected at the 5% significance level. However, when the series are transformed into first differences, the null hypothesis can be rejected at the 5% significance level. This suggests that all the series in the ASEAN-5 countries are integrated of order one, $I(1)$. These results are consistent with the Nelson and Plosser's (1982) notion that most of the macroeconomic variables are stationary at the first difference.

Given that the variables are $I(1)$, we can proceed to test the existence of long-run equilibrium relationship with the multivariate Johansen-Juselius cointegration test. The results of LR tests for co-integration based on the Johansen-Juselius approach are presented in Table 2. We find that the trace and maximum eigenvalue tests provide different co-integraton results. The trace statistics are greater than the 5% critical values in all the ASEAN-5 countries, hence it rejects the null hypothesis of no cointegration in all the selected countries. However, the maximum eigenvalue

test statistics reject the null of no cointegration only in Indonesia, Malaysia and the Philippines, but not for Singapore and Thailand. According to Cheung and Lai (1993), trace test is relatively more robust than maximum eigenvalue test, especially in small sample which is the case of the present study. Basing on this, the results of the trace test are adopted in this study and we conclude that there is a common trend or long-run equilibrium relationship between economic growth, domestic investment, FDI, trade and interest rate in the ASEAN-5 economies.

Since the series are cointegrated, we proceed to determine the direction of causality within the VECM framework. The results of the granger causality tests confirmed that there are confounding results among the series. Therefore, the important findings of the granger causality relationship between domestic investment, FDI, trade, interest rate, and economic growth are summarised in graphical form as shown in Figure 1.

In the short run, the growth in domestic investment and trade is directly influenced the growth in GDP in Malaysia, Singapore, the Philippines and Thailand. Besides, the results of Malaysia and the Philippines support the FDI-led growth hypothesis, whereas the results of Indonesia support the view that home market size is also essential in attracting foreign capital inflows, which is a point noted in Chakraborty and Mukherjee (2012). In contrast, we do not find any short-run evidence of FDI influencing economic growth in Singapore and Thailand. Thus there is a need for these 2 countries to strengthen their macroeconomic policy frameworks to create stability and attract more FDI. With respect to that, the results also highlight that the influx of FDI will largely influence the growth of domestic investment of the Philippines, Singapore and Thailand, whereas domestic investment is also crucial in motivating FDI inflows into Malaysia as well as Singapore. A further result is that the interest rate variable is also

Table 1: The results of unit root tests

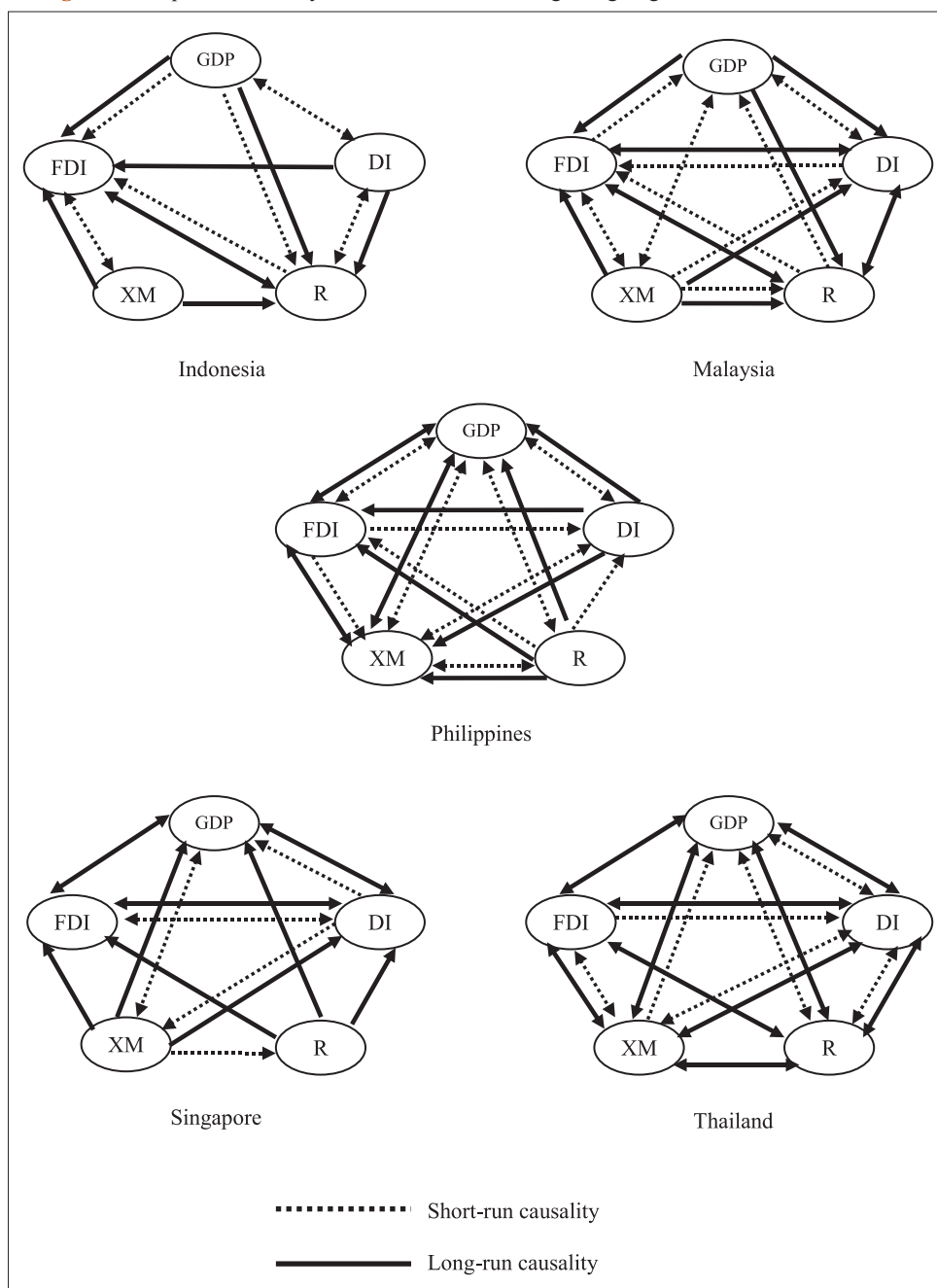| Variables	Indonesia	Malaysia	Philippines	Singapore	Thailand
Augmented Dickey-Fuller					
lnGDP$_t$	−1.62 (1)	−2.74 (0)	−0.08 (1)	−2.03 (2)	−1.52 (1)
ΔlnGDP$_t$	−4.45 (0)***	−6.27 (0)***	−3.61 (0)***	−3.41 (3)**	−3.59 (0)**
lnDIt	−1.97 (2)	−1.15 (1)	−1.60 (1)	−0.89 (1)	−1.48 (1)
ΔlnDIt	−4.58 (1)***	−4.94 (0)***	−4.28 (0)***	−4.03 (0)***	−3.68 (0)***
lnFDIt	−2.74 (0)	−1.89 (1)	−5.51 (0)	−0.84 (2)	−1.26 (0)
ΔlnFDIt	−6.51 (0)***	−8.80 (0)***	−11.90 (0)***	−6.85 (1)***	−7.46 (0)***
lnXMt	−1.29 (0)	−1.75 (0)	−0.80 (0)	−1.31 (0)	−0.46 (0)
ΔlnXMt	−6.60 (0)***	−6.18 (0)***	−5.72 (0)***	−5.70 (0)***	−5.24 (0)***
Rt	−2.60 (0)	−2.47 (1)	−1.36 (2)	−1.18 (0)	−1.12 (0)
ΔRt	−6.65 (1)***	−5.32 (0)***	−5.61 (1)***	−5.18 (1)***	−5.89 (0)***
Phillips-Perron					
lnGDPt	−1.94 (1)	−2.63 (2)	−0.27 (2)	−2.50 (2)	−1.66 (3)
ΔlnGDPt	−4.47 (1)***	−6.33 (2)***	−3.63 (2)***	−5.14 (0)***	−3.60 (1)**
lnDIt	−2.41 (3)	−2.25 (0)	−1.57 (2)	−1.59 (1)	−1.26 (2)
ΔlnDIt	−2.20 (5)***	−4.93 (2)***	−4.13 (4)***	−3.92 (5)***	−3.64 (3)***
lnFDIt	−2.86 (1)	−2.35 (0)	−5.48 (3)	−1.06 (8)	−1.17 (1)
ΔlnFDIt	−6.55 (3)***	−9.21 (3)***	−18.62 (12)***	−28.55 (40)***	−7.49 (2)***
lnXMt	−1.31 (2)	−1.77 (2)	−0.80 (1)	−1.31 (3)	−0.46 (0)
ΔlnXMt	−6.61 (2)***	−6.18 (2)***	−5.72 (1)***	−5.70 (2)***	−5.22 (3)***
Rt	−2.69 (1)	−2.07 (3)	−1.62 (8)	−1.34 (1)	−1.20 (1)
ΔRt	−6.66 (5)***	−5.93 (11)***	−6.82 (20)***	−5.23 (4)***	−5.88 (4)***

Notes: The asterisks *** and ** denote the significance at 1% and 5% levels respectively. Δ is the first difference operator. ln denotes as natural logarithm. Figure in the parentheses indicate the optimal lag length for ADF test and bandwidth for PP test. The optimal lag length and bandwidth are selected by AIC and Newey-West Bartlett kernel. The critical values are obtained from MacKinnon (1996), PP: Phillips-Perron, ADF: Augmented Dickey-Fuller

Table 2: The results of Johansen-Juselius co-integration test

Tests		Indonesia	Malaysia	Philippines	Singapore	Thailand
H_0	H_1	LR(λ_{trace}) test statistics				
$r=0$	$r\geq1$	104.75***	88.80***	104.49***	84.40***	78.85***
$r\leq1$	$r\geq2$	44.20	46.38	53.70	54.79***	46.43
$r\leq2$	$r\geq3$	24.69	22.63	17.11	29.58	26.24
$r\leq3$	$r\geq4$	8.58	6.38	3.99	15.04	12.14
$r\leq4$	$r\geq5$	0.81	1.99	0.36	4.51	4.43
		LR(λ_{max}) test statistics				
$r=0$	$r=1$	60.56***	42.420***	50.80***	29.61	32.42
$r\leq1$	$r=2$	0.38	23.75	36.58***	25.21	20.19
$r\leq2$	$r=3$	0.33	16.25	13.13	14.53	14.10
$r\leq3$	$r=4$	0.17	4.39	3.63	10.54	7.71
$r\leq4$	$r=5$	0.02	1.99	0.36	4.51	4.43

Note: The asterisks *** denotes the significant level at 1% level. The critical values were obtained from Osterwald-Lenum (1992). The Akaike's Information Criterion (AIC) was used to select the optimal lag order

Figure 1: Graphical summary of the short- and the long-run granger causalities for ASEAN-5

Indonesia

Malaysia

Philippines

Singapore

Thailand

• • • • • • • • • • Short-run causality

———————— Long-run causality

exerting direct influence on economic growth and *vice versa* in the Philippines and Thailand. On the other hand, in Singapore, interest rate has no effect on economic growth, meaning that the impact of short-term interest rates as the instrument of monetary policy does not provide any significant increase to economic growth.

Turning to the long-run granger causality, the findings confirmed that domestic investment and FDI exert strong and direct impact on economic growth in the case of Singapore and Thailand, which is consistent with the study of Tan and Tang (2012) as well as Omri and Kahouli (2014). Additionally, the findings of this study also show that the size of the home market tends to sustain both domestic investment and FDI in Malaysia but only FDI in Indonesia, while domestic capital accumulation is important in driving economic growth in the Philippines in the long-term. Surprisingly, the results of this study reveal no direct impact of domestic investment on economic growth in Indonesia, implying that the domestic investment in Indonesia seeks only short-run profitable opportunities, not long-run sustainable growth. This means that Indonesia needs to introduce domestic structural reforms to ensure inclusive growth in the country. Nonetheless, domestic investment and FDI are proven to be resilient in the long-run, since there is a bi-directional causality between these two variables in all the ASEAN-5 countries, except Indonesia and the Philippines. For the case of Indonesia and the Philippines, we find that local investment tends to attract a higher rate of FDI instead of the other way around. From a policy perspective, this would suggest that the ASEAN-5 governments should encourage collaboration between local and foreign investors in building up the investment capacity, which in turn will contribute to the economic growth of ASEAN in the long-run.

4. CONCLUSION AND POLICY RECOMMENDATIONS

Using the annual data from the period 1970 to 2012, we endeavour to investigate the relationship between domestic investment, FDI, trade, interest rate and economic growth in the ASEAN-5 countries. Based on the Johansen-Juselius cointegration procedures and findings, all the variables are found to have long-run cointegration relationship between each other. From the Granger causality results, economic growth is vital in attracting domestic and foreign investment in Indonesia and Malaysia as there is at least one way causality moving from economic growth to both domestic investment and FDI. In addition, domestic investment serves to stimulate FDI, thereby boosting further economic growth of the country. Turning to the case of the Philippines, Singapore and Thailand, domestic investment and FDI tend to be growth enhancing factors. Nonetheless, in Singapore and Thailand, domestic investment and FDI are inter-related. Overall, the empirical results support that domestic investment, FDI and economic growth could be supplementary to one another in the ASEAN-5 economies. Since domestic investment, FDI and economic growth strongly influence one another, there are several policy measures that the ASEAN-5 countries can adopt to strengthen the linkages between these factors.

In term of policy actions, an immediate primacy is for ASEAN-5 governments to closely monitor the economic conditions in their countries as well as extend and implement new convincing and relevant investment incentive packages to investors. This involves efforts on reforms and regulations, such as providing greater flexibility for companies and improving corporate governance, to further enhance and strengthen domestic industrial growth and local capabilities. Moreover, the collaboration between domestic and foreign investors such as between multinational corporations (MNCs) and local small and medium-sized enterprises (SMEs), is necessary and therefore should be encouraged as the development of local firms will attract and motivate further involvement by multinationals. For the domestic aspect, for example, the promotion of entrepreneurship by creating more dynamic enterprises will help to meet the demands of the highly competitive domestic and international markets. This will also alert the foreign investors about the state of the economy in the country. In addition, it is imperative that a business-friendly environment be created with the appropriate set of economic policies which promotes sustainable development. This will not only encourages domestic investment but also builds up the confidence of foreign investors to explore new investment opportunities in the country or continue and expand their existing ventures in the country. At the same time, the governments must improve domestic infrastructure and develop a labour force with industry relevant skills as well as soundly managed financial resources to meet the needs and expectations of the domestic and foreign investors. In summary, the above mentioned policy adjustments are to help the ASEAN-5 countries expand and manage the investment capacity of their domestic enterprises which in turn will induce greater FDI inflow. Therefore the ASEAN-5 nations should aim to improve their investment climate to promote and facilitate investment as well as to offer inducements to link foreign investments with domestic enterprises in order to build up more investment capacity and to sustain the region's overall economic growth.

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