



## Trade Openness and its influence on Foreign Direct Investment in ASEAN-3

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### ABSTRACT

Foreign direct investments (FDI) have emerged as the most important external capital sources for all countries. Using annual data from 1980 to 2019, this study explores trade openness and its influence on FDI in ASEAN-3. The study includes Malaysia, Indonesia, and Thailand are synonymous as ASEAN-3 countries. The Autoregressive Distributed Lag (ARDL) study shows that trade openness has influenced FDI inflow into ASEAN-3. According to empirical data, trade openness and FDI inflows in Malaysia and Indonesia have a strong relationship. Meanwhile, Thailand has a negative relationship between trade openness and FDI inflows. Overall, this study can help policymakers improve their future planning in order to capitalise on greater prospects for FDI inflows into ASEAN-3 countries.

**Keywords:** FDI inflow; Trade Openness; ASEAN-3; ARDL

### 1. INTRODUCTION

Globalization helps developing countries catch up with industrialized countries more quickly on economic growth especially in the industrial sector (Incekara and Savrul, 2011; Ezcurra and Rodriguez-pose, 2013). The process of economic integration is seen to increase employment opportunities and technological advancement as well as economic growth. FDI and trade openness are two globalisation processes that have a significant impact on the country's economic development. Trade openness and FDI are important in enhancing international relations through access to global markets. Most economists believe that increased trade openness could increase FDI inflows into host countries. The majority of emerging and developing countries have pursued a variety of economic reforms in order to increase FDI through increased economic openness.

FDI inflows are one of the key drivers of globalisation and play an important role in economic development. In general, FDI inflow is a significant component of external financing, infrastructure development, technology, and market access. Economic reforms and economic restructuring are being vigorously implemented in most developing and emerging countries to attract more FDI. In general, FDI has brought significant changes to the global economic situation, political environment, and policy changes in a country. In addition, trade openness is considered a determinant of FDI inflows through a country's export-import balance. the attraction of foreign investors to a country is influenced by economic activity as well trade policy implemented. Thus, the implementation of progressive trade policies has made the economy more open in attracting more foreign direct investment.

Developed and developing countries are beginning to integrate economies in driving FDI inflows through multinational corporations. Multinational companies have an important impact on the process of global economic integration. The advantages possessed by multinational corporations through capital, skills, and technology create the transfer of capital from developed countries to less affluent countries (Ocloo et al., 2014; Merriam-Webster, 2012; Samad, 2007). According to Todaro and Smith (2006), increased economic openness to international trade occurs through the process of globalization. Developing countries such as ASEAN-3 are experiencing an increase in trade openness as a result of the process of globalization which has driven to increase the efficiency of ASEAN-3 economic growth. Economic openness has been identified to increase the efficiency of economic growth in ASEAN-3.

With the increase in economic openness, Deluna and Chelly (2014) see the existence of resource shifts that affect the increase in the value of production. The shift in resources is seen to create a trade that is seen to be increasing as is the case in ASEAN-3. ASEAN-3 is seen to have an advantage in terms of labor productivity compared to countries that do not have specialization in the currents of globalization. Advantages in terms of productivity have seen an increase in cooperative relations between countries while successfully increasing FDI inflows. The formation of cooperation between ASEAN-3 and other countries is seen to have benefited member countries through the implementation of free trade. The World Trade Report (2016) recognizes trade openness as an opportunity to enhance economic well-being by increasing global trade participation.

Challenges and risks in economic stability exist due to the process of globalization taking place in ASEAN-3. This challenge is acknowledged by Ayub et al. (2019) and Mohr (2012) who described the economic integration of developing countries and industrialized countries as having a major impact in attracting foreign capital. Thus, economic integration has brought about changes in free trade in ASEAN member countries. Kakar et al. (2011) see trade openness as preparation for the change in increasing the efficiency of economic allocation as well as generating economic growth. Efficiency through trade openness is seen to create increased FDI inflows in ASEAN-3. Furthermore, empirical findings on trade openness and FDI have been mixed (Ho et al. 2013; Zaman et al. 2018; Adow and Tahmad 2018).

The paper is organised as follows: A overview of the literature and empirical evidence on globalisation and its relationship with FDI is presented in the first section. The second part of the research in methodology is presented, respectively. The third part is a data, theoretical model, and econometric methodology. Next, the paper provides the empirical estimation results, and the paper ends with the conclusions and also policy recommendations based on the findings.

## 2. LITERATURE REVIEW

Previous empirical research has looked at the relationship between trade openness and FDI inflows. Some conclusions are based on theoretical research and are supported by several statistical and econometric models that may be used. Several findings demonstrate the use of theory and are also supported by a series of statistical and econometric models that can be used (Koojaroenprasit, 2012; Guris and Gozgor, 2015; Trinh and Nguyen 2015; Musyoka and Orcharo, 2018; Ismail and Ismail, 2021). The role of multinational companies has a huge impact in disseminating knowledge and helping to boost economic growth. Trade openness makes investment and FDI important economic indicators. From 1990 to 2008, Liargovas et al. (2012) investigated the importance of trade openness in attracting FDI inflows in 36 developing nations. Trade openness, according to the data, has a positive impact on FDI inflows. To summarise, trade liberalization will be a viable alternative to long-run FDI inflows.

Bekhet and Al-Samadi's (2015) study on the determination of FDI inflows in Jordan using Autoregressive Distributed Lag (ARDL) from 1978-2012. The results obtained in Jordan demonstrate that higher trade openness, economic growth and financial development have an impact on increased FDI inflows, based on the advantages of its location. Boateng et al. (2015) demonstrated that foreign exchange rates, economic growth, and trade openness had a substantial and positive relationship with FDI inflows for the period 1986–2009 in Norway using Full Modified Ordinary Least Square (FMOLS) analysis. Thus, these findings are in line with Dunning's (2009) argument that trade openness is an important element that has exerted a significant influence on MNC investment decisions in recent years.

Zaman et al. (2018) studied trade openness in Asian countries focusing on India, Iran, and Pakistan. The study conducted covered the years 1982-2012 using Cumulative OLS analysis. The results obtained show that high trade openness leads to

increased FDI inflows. This tendency implies that trade openness has a significant impact on FDI inflows, both internationally and locally. Clearly, trade liberalization stimulates local demand and facilitates the establishment of large-scale industries through FDI inflows. Trade liberalization and infrastructure developed in host countries are improving and driving the influx of foreign investors. In addition, trade liberalization factors can also help increase the level of infrastructure of a country as a determinant of FDI inflows.

Adnett (2017) study on E7 economic countries is an FDI destination with optimistic investment prospects. Moreover, the growth of the E7 economic countries was characterized by the formation of the largest economy in the world in the 20th century. The E7 economies represented by Brazil, China, Russia, Indonesia, India, Turkey and Mexico using Random Impact Model analysis showed that trade openness, democratic institutions, machine imports, life expectancy, high-speed telephone line subscriptions, as well as higher education, have a strong relationship positive and significant with FDI. The findings of Yameogo et al. (2015) support other findings stating the importance of economic integration through infrastructure development and trade openness as well as macroeconomic indicators influencing FDI involving 5 African regions and its focus covers 1970-2010. Economic growth, trade openness, infrastructure, domestic investment, and inflation all have a favourable effect on FDI inflows, according to the GMM technique. These results correspond the findings of Sazali et al. (2018) and Lee et al., (2021), who discovered that trade openness is a key factor in increasing FDI inflows.

Chong et al. (2019) in their study in ASEAN-5 using Autoregressive Distributed Lag (ARDL) analysis. The results obtained in ASEAN-5 show that rising economic growth, inflation, trade openness, interest rates, and taxes are affecting FDI inflows. can be in line with the study of Soo and Kueh (2020) in Cambodia, Laos, Myanmar, and Vietnam using Full Modified Ordinary Least Square (FMOLS) analysis. For Cambodia, Laos, Myanmar, and Vietnam, the results estimates show that trade openness, market size, inflation, interest rates, and labor volume have a significant relationship with FDI inflows. therefore, the findings in ASEAN-5 as well as Cambodia, Laos, Myanmar, and Vietnam are in line with the argument of Aderemi et al. (2018) who described efforts to attract foreign investors as necessary with the help of stable economic growth and positive trade liberalization.

However, there are differences with other findings that indicate trade openness is not statistically significant to FDI inflows. However, previous studies have also disputed findings stating that trade openness affects FDI. Trade openness is also seen to have a negative impact and some report that there is no relationship with FDI as stated by Gabor Fazekas (2016) and Wickramarachchi (2019). Meanwhile, Vijesandiran and Vinayagathan (2020) used the ARDL Bounds test to conduct a study from 1996 to 2017. The findings represent that trade openness has a long-run negative impact on FDI inflow which is consistent with Mudiyansele et al. (2021) findings.

Therefore, the implications of a country's wisdom in implementing the policy of economic openness in the context of globalization are play important role in increasing FDI inflows. There is a wide range of findings and viewpoints on the implications of trade openness and FDI that have an unequal influence on a country. However, a country's wisdom in adopting a trade-openness policy is critical to improving regional relations. However, this gap has created a situation that raises concerns about relationships and their implications.

### 3. METHODOLOGY

The association between globalization and FDI will be assessed using a time series data set from three ASEAN countries during the period 1980-2018. These countries include Malaysia, Indonesia, and Thailand, selected based on data availability. The data for this study collected from the World Bank's World Development Indicators. FDI inflows are the dependent variable, which is calculated as the ratio of net FDI inflows to GDP (FDI). The trade openness, which is the sum of imports and exports scaled by GDP (TO), and real GDP growth based on constant 2010 represent the independent variables (GDP). Other control variables include value of the M2 money supply to GDP which represents financial development (LFD), the value of gross fixed capital formation against GDP as domestic investment (DI), and value of percentage in the consumer price index representing the rate of inflation (INF). The model used by Abdul Rahim et al. (2018) and Qamar Zaman et al. (2018) to determine the link between trade openness and FDI inflows. The model usually assumes the following functions and the log-linear form (L) of each variable in the above equation is shown as follows:

$$LFDI_t = \alpha_0 + \beta_1 LTO_t + \beta_2 LGDP_t + \beta_3 LFD_t + \beta_4 LDI_t + \beta_5 LIN_t + \varepsilon_t \quad (1)$$

where  $t$  represent time,  $\alpha_0$  is a constant term,  $\varepsilon_t$  is a random error term, while the other variables are defined as previously.

The ARDL technique became essential for the study since it can examine long-run and short-run correlations at the same time. Although it must not exceed  $I(0)$ , the ARDL method outperforms Johansen cointegration based on mixed stationarity levels  $I(0)$  and  $I(1)$ . Before testing for cointegration, it's important to look into the variables' stationarity time series. The null hypothesis is rejected if the F-statistic value is greater than the upper critical bounds value. It is inconclusive if the F-statistic value falls between the critical bounds, and there is no co-integration if the F-statistic value is smaller than the lower critical bound. The F-statistic specifies which variable should be standardised when a long-run relationship exists.

Table 1: Descriptive Statistics of Variables in ASEAN-3

Country	FDI	TO	GDP	FD	DI	IN	
Malaysia	Mean	3.945	5.038	5.872	4.767	3.327	3.021
	Median	3.926	5.052	6.075	4.829	3.253	2.775
	Maximum	8.760	5.395	10.00	4.947	3.774	9.700
	Minimum	0.056	4.654	-7.360	4.164	3.023	0.290
	Std. Dev	1.829	0.238	3.585	0.190	0.228	1.883
	Skewness	0.448	-0.16	-1.676	-1.79	0.568	1.265
	Kurtosis	3.692	1.733	6.542	5.757	2.038	5.545
	Jarque-Bera	2.033	2.718	37.66	32.47	3.508	20.39

$$\Delta LFDI_t = \alpha_0 + \theta_0 LFDI_{t-1} + \theta_1 LTO_{t-1} + \theta_2 LGDP_{t-1} + \theta_3 LFD_{t-1} + \theta_4 LDI_{t-1} + \theta_5 LIN_{t-1} + \sum_{i=1}^p \beta_i \Delta LFDI_{t-i} + \sum_{i=0}^q \gamma_i \Delta LTO + \sum_{i=1}^r \vartheta_i \Delta LGDP + \sum_{i=1}^s \varphi_i \Delta LFD + \sum_{i=1}^t \psi_i \Delta LDI_{t-i} + \sum_{i=1}^t \varkappa_i \Delta LIN_{t-i} + v_t \quad (2)$$

$\Delta$  is the stochastic error term, and  $\mu_{it}$  is the change for each operator. The long-run correlation was investigated with the restriction of coefficients  $\theta_1, \theta_2, \theta_3, \theta_4, \theta_5$  and the null hypothesis in the long-run as follows.

$$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$$

However, short-run adjustments to FDI, economic growth, globalisation, financial development, domestic investment, and inflation rate are required due to changes in their determinants. The significance of the ECM lies in its ability on time series data to correct spurious regression results. The ECM model is defined as follows:

$$\Delta LFDI_t = \alpha_0 + \sigma ECT_{t-1} + \sum_{i=1}^p \beta_i \Delta LFDI_{t-1} + \sum_{i=0}^q \delta_i \Delta LTO_{t-1} + \sum_{i=0}^r \gamma_i \Delta LGDP_{t-1} + \sum_{i=0}^s \omega_i LFD_{t-1} + \sum_{i=0}^t \vartheta_i LDI_{t-1} + \sum_{i=0}^t \eta_i LIN_{t-1} + v_t \quad (3)$$

where;  $ECT$  is error correction term;  $_{t-1}$  shows variables that were lagged by one period;  $\Delta$  refers to changes in ECM coefficient. Furthermore, the stability test is a final stage in the research process that ensures the model's parameter consistency. It employs recursive estimate with the CUSUM.

### 4. RESULTS AND DISCUSSION

#### Descriptive Statistics

Table 1 shows the descriptive statistics for study variables in ASEAN-3. Table 1 depicts the asymmetric distribution of Malaysia's trade openness, economic growth, and financial development. Inflows of FDI, economic growth, financial development, and local investment in Indonesia, on the other hand, are skewed. Thailand's trade openness, economic growth, and financial development are all irregularly distributed variables. Meanwhile, in Malaysia, the Skewness value of FDI inflows and trade openness approaches zero, while the Kurtosis value is less than 3 and the Jarque-Bera result is nearly 3. Although the stated probabilities have a high value, this shows that FDI inflows and trade openness are regularly distributed.

Indonesia	Mean	0.848	3.964	5.153	3.624	3.262	9.6728
	Median	0.832	3.959	5.625	3.691	3.282	7.896
	Maximum	2.738	4.566	9.880	4.092	3.490	58.451
	Minimum	-2.58	3.622	-13.13	2.839	2.966	3.525
	Std. Dev	1.146	0.173	3.495	0.333	0.168	8.921
	Skewness	-0.78	0.944	-3.855	-0.98	-0.31	4.489
	Kurtosis	3.876	5.495	21.020	3.080	1.900	24.92
	Jarque-Bera	5.076	15.50	608.3	6.112	2.558	888.8
Thailand	Mean	2.268	4.518	5.200	4.488	3.331	3.852
	Median	2.137	4.609	5.485	4.617	3.291	3.279
	Maximum	6.434	4.944	13.29	4.849	3.729	19.705
	Minimum	0.419	3.858	-7.630	3.737	3.016	-0.900
	Std. Dev	1.461	0.374	3.904	0.319	0.210	3.704
	Skewness	0.709	-0.55	-0.795	-0.85	0.735	2.331
	Kurtosis	2.974	1.883	5.015	2.753	2.371	10.508
	Jarque-Bera	3.189	3.917	10.44	4.739	4.053	146.4

Source: Secondary data (processed)

In Indonesia, the Skewness value of domestic investment tends to be near to 0, while the Kurtosis value is below 3 and the Jarque-Bera value is close to 3. This means that domestic investments are more likely to be regularly distributed with low probability values. Only one variable in Thailand is normally distributed, and its probability value is substantial. This shows that the Skewness value of FDI inflows is approaching zero while the Kurtosis value is less than 3, resulting in a Jarque-Bera value close to 3. All of these values represent ASEAN-3 macroeconomic variables that are considered to be regularly distributed.

### Unit Root Test

The first approach was to assess the amount of stagnation via the first level and difference using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) root unit tests. Furthermore, current operators intercept and intercept trends. Table 2 shows the outcomes of these testing. It's possible that the data is distributed on a regular basis. The findings show that FDI, economic growth, financial development, and inflation are all significant at the same rate, whereas trade openness and domestic investment are significant at 10, 5, and 1 percent respectively..

Table 2: Unit Root Test

Country	Variables	Augmented Dickey-Fuller (ADF)				Phillips-Perron (PP)			
		Level I(0)		1 <sup>st</sup> Difference I(1)		Level I(0)		1 <sup>st</sup> Difference I(1)	
		Intercept	Intercept & Trend	Intercept	Intercept & Trend	Intercept	Intercept & Trend	Intercept	Intercept & Trend
Malaysia	LFDI <sub>t</sub>	-6.576(0)***	-6.479(0)***	-6.576(0)***	-6.479(0)***	-3.008**	-6.568***	-6.676***	-6.568***
	LTO <sub>t</sub>	-7.524(1)***	-7.405(1)***	-7.524(1)***	-7.405(1)***	-4.914***	-4.963***	-18.41***	-17.908***
	LGDP <sub>t</sub>	-3.587(0)**	-3.965(0)**	-3.587(0)**	-3.965(0)**	-1.353	-0.1597	-3.617**	-3.7263**
	LFD <sub>t</sub>	-5.834(1)***	-5.798(1)***	-5.834(1)***	-5.798(1)***	-3.181**	-3.4890*	-7.000***	-6.946***
	LDI <sub>t</sub>	-4.596(0)***	-4.535(0)***	-4.596(0)***	-4.535(0)***	-1.535	-2.1284	-4.556***	-4.4886***
	LIN <sub>t</sub>	-8.013(1)***	-7.896(1)***	-8.013(1)***	-7.896(1)***	-7.502***	-7.3991***	-44.78***	-47.819***
Indonesia	LFDI <sub>t</sub>	-1.368(0)	-2.690(0)	-7.663(0)***	-7.564(0)***	-4.567***	-2.601	-7.489***	-7.469***
	LGDP <sub>t</sub>	-4.590(0)***	-4.506(0)***	-5.714(0)***	-5.629(0)***	-2.913*	-4.481***	-15.55***	-16.55***
	LFD <sub>t</sub>	-2.496(0)	-2.507(0)	-8.412(0)***	-8.422(0)***	-2.464	-2.454	-8.412***	-8.570***
	LDI <sub>t</sub>	-2.529(1)	-1.795(1)	-3.207(0)**	-3.944(0)**	-2.722	-1.582	-3.148**	-3.902**
	LGC <sub>t</sub>	-1.802(1)	-1.965(1)	-4.468(0)***	-4.404(0)***	-1.662	-1.813	-4.468***	-4.404***
	LIN <sub>t</sub>	-5.024(0)***	-5.077(0)***	-7.579(1)***	-7.467(1)***	-5.024***	-5.077***	-26.47***	-26.463***
Thailand	LFDI <sub>t</sub>	-3.429(0)**	-3.658(0)**	-8.805(0)***	-8.712(0)***	-3.414**	-3.715**	-10.97***	-12.72***
	LGDP <sub>t</sub>	-3.181(0)**	-3.568(0)**	-7.363(0)***	-7.254(0)***	-3.179**	-3.586**	-9.404**	-9.234***
	LFD <sub>t</sub>	-1.167(0)	-0.879(0)	-5.558(0)***	-5.652(0)***	-1.167	-1.088	-5.546***	-5.646***
	LDI <sub>t</sub>	-3.291(0)**	-1.844(0)	-4.306(0)***	-5.115(0)***	-3.291**	-1.870	-4.364***	-5.126***
	LGC <sub>t</sub>	-2.310(1)	-2.841(1)	-3.791(0)***	-3.758(0)**	-1.310	-1.758	-3.472**	-3.411*
	LIN <sub>t</sub>	-5.983(0)***	-5.871(0)***	-6.894(0)***	-6.909(0)***	-5.929***	-5.912***	-6.894***	-6.909***

Notes: 1. \*\*\*, \*\* and \* are significant levels at 1, 5, and 10 percent. 2. The optimal lag structure is selected based on AIC and SIC respectively for ADF test and PP test

### ARDL Bound Test

The unit root test resulting that all variables were stationary at the mixed level, supporting the justification for ARDL analysis in ASEAN-3. Some variables have a stationary at the level, whereas others have a stationary at the first difference. Table 3 shows the results of the ARDL analysis are significance at

any level which is Malaysia's F-statistics are 11.543, Indonesia's 4.176, and Thailand's 7.060. The value of the F-statistic is higher than the critical value. The investigation rejected the null hypothesis and the models have a long-run relationship.

Table 3: ARDL Analysis

Country	Model	F-Statistic	Hypothesis null	Critical Value	I(0)	I(1)
Malaysia	(2, 1, 1, 2, 2, 1)	11.543***	Reject	1 Percent	3.06	4.15
Indonesia	(1, 2, 1, 0, 0, 0)	4.176*	Reject	5 Percent	2.39	3.38
Thailand	(1, 2, 2, 2, 0, 2)	7.060***	Reject	10 Percent	2.08	3.00

Note: 1. \* and \*\* are significant at the rates of 1 and 5 percent. 2. F-bound critical value based on Pesaran (2001) critical value table. 3. Refer to case II with the value of the independent variable (k) = 5

### ARDL Estimation Result

Table 4 shows the results of the long-run estimation and the error correction model. The implications of trade openness in Malaysia, Indonesia, and Thailand indicate that FDI inflows are positively correlated. The findings were interpreted as a 1percent increase in trade openness, which resulted in 0.60 percent increased FDI inflows in Malaysia, 1.07 percent more in Indonesia, and 1.35 percent more in Thailand. This clearly indicates that increased trade openness has increased the inflow of foreign capital. FDI is influenced by various of factors, according to Sulong and Harjito, 2005; Saqib, Masnoon, and Rafique (2013), particularly economic growth, which is an important determinant. According to the findings of studies undertaken in Malaysia, Indonesia, and Thailand, there is a long-run association between economic growth and FDI inflows, as indicated by Sun (2011) and Abala (2014). According to the study, a 1 percent increase in economic growth increased FDI inflows to Malaysia by 1.33 percent, Indonesia by 1.88 percent, and Thailand by 0.29 percent.

show a long-run positive and significant relationship between financial development and FDI inflow. These findings are in accordance with those of Alfaro et al. (2017) and Adjasi et al. (2012), who identified financial development as the need for a strong FDI inflow relationship.

High domestic investment returns supported increased FDI inflows. However, Titarenko's (2006) analysis shows that FDI has a negative impact on domestic investment. Studies in Thailand support this approach, indicating a negative and significant relationship between domestic investment and FDI inflows. As a result, research in Indonesia and Malaysia have found that FDI inflows are consistently represented as a primary component in capital formation. This suggests that the development of robust domestic capital formation can enhance the economy's ability to absorb the potential benefits of FDI.

Most economists attribute financial development to increasing FDI inflows. However, results from Malaysia and Indonesia contradict this perspective, indicating a negative and significant relationship between financial development and economic growth. As a result, Malaysian and Indonesian studies have discovered a negative association between financial development and FDI inflows, which is consistent with Antras et al (2009). In opposition to Thailand, the findings

Meanwhile, the inconsistencies in ASEAN-3 findings suggest that the relationship between inflation and FDI inflows is irrational. Obiamaka et al. (2011) and Walsh (2011) found no long-run relationship between inflation rates and FDI inflows. A low inflation rate might theoretically boost FDI inflows. Furthermore, foreign investors will be able to optimize their investment returns due to the availability of capital with lower lending rates. Clearly, the findings reveal that, the inflation rate has no significant relationship with FDI inflows in ASEAN-3. However, economic openness is the key to attracting foreign capital inflows.

Table 4: Long-Run and Short-Run Coefficients Based ARDL Models

Country		LTO	LGDP	LFD	LDI	LIN	ECM (-1)	R Square	
Malaysia	Long-run	Coefficient	0.605**	1.339***	-1.154***	0.487***	-0.917		
		P-Value	0.030	0.006	0.000	0.002	0.129		
	Short-run	Coefficient	0.476	0.237	-2.72	1.518	0.016	-1.471	0.883
		P-Value	0.399	0.324	0.179	0.003	0.980	0.000	
Indonesia	Long-run	Coefficient	1.074**	1.880***	-0.88***	1.614***	0.002		
		P-Value	0.021	0.000	0.000	0.000	0.982		
	Short-run	Coefficient	-0.429	4.104	-0.491	0.892	0.001	-0.552	0.884
		P-Value	0.827	0.000	0.001	0.005	0.982	0.000	
Thailand	Long-run	Coefficient	1.358***	0.294*	0.234*	-1.711***	0.154		
		P-Value	0.000	0.069	0.007	0.002	0.424		
	Short-run	Coefficient	2.364	0.065	3.523	-1.863	-0.031	-1.088	0.7206
		P-Value	0.043	0.418	0.029	0.002	0.829	0.000	

Notes: DV is a dependent variable. \*\*\*, \*\* and \* are significant levels at the rates of 1, 5 and 10 percent.

In ASEAN-3, the error correction coefficient showed significant results at the 1 percent significance level. In Malaysia, short-run adjustment and long-run equilibrium exist, with the ECM coefficient value of -1.47 indicating that 147 percent of the imbalance that occurred as a result of the previous year's decrease can be readjusted in the long run with the current year's equilibrium. As a result, the R-square value of 0.88 suggests that about 88 percent of the factors in the equation explain the dependence on FDI in Malaysia.

The value of the ECM coefficient obtained in Indonesia is -0.55 which refers to 55 percent of the imbalance that occurs in the variable but can be readjusted with the current year's balance. The R-square value expressed at 0.83 indicates 83 percent of the dependence of other variables on FDI is explained in the equation in Indonesia. The dependence of other variables on FDI in Thailand was recorded at 72 percent. The ECM coefficient in Thailand is -1.08 which indicates that 108 percent of the imbalance that occurs in the variable can be readjusted with the current year's balance.

Overall, it shows trade openness as a key factor in influencing FDI in ASEAN-3. In conclusion, the implications of trade openness drive FDI inflows in ASEAN-3. The results of objective two show that countries that adopt an open economic system are an important element in influencing investors' decisions to invest. These implications can help promote the advantages of host countries and at the same time contribute to FDI inflows into ASEAN-3 on an ongoing basis.

### Stability Test Results

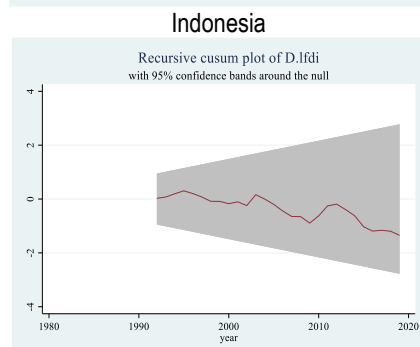
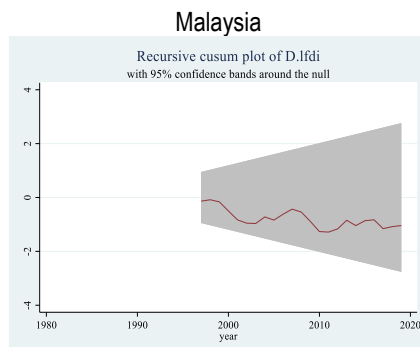
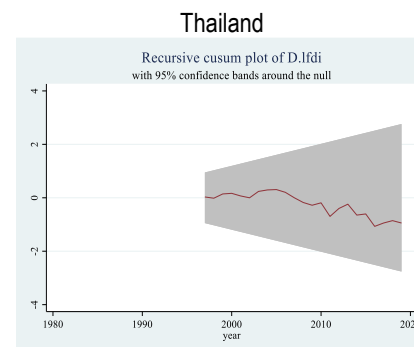
Table 5 shows the results of a study that includes a variety of diagnostic stability tests for economic indicators in ASEAN-3. The results show that the proposed model is free from econometric problems. In general, the study model did not experience any diagnostic problems as reported because no probability value obtained was smaller than the critical value at the 5 percent level. Diagnostic tests have been highlighted through this study.

Table 5: Diagnostic Tests

Test Statistic/ Country	Malaysia	Indonesia	Thailand	Outcome
Autocorrelation	0.3385	0.7309	0.4912	No autocorrelation
Heteroscedasticity	0.4159	0.2304	0.3381	Errors are homoscedastic
Normality	0.7135	0.1016	0.3032	Errors are normally distributed

Note: The probability values of the diagnostic test are shown in parentheses.

In general, the three study countries did not experience any diagnostic problems and the CUSUM and CUSUMQ diagrams displayed also did not provide any situation beyond the equilibrium boundary of the estimation of the study model. With this, it can be concluded that the estimation of the ARDL model together with the lag selection meet the basic requirements of the econometric model.



## 5. CONCLUSION AND IMPLICATION

In the long run, trade openness is thought to boost FDI inflows in the ASEAN-3 region. As trade openness, economic growth, financial development, and domestic investment are seen to influence FDI inflows, yields in ASEAN-3 are considered dynamic. Trade openness has its own role in improving economic performance through increased FDI inflows. According to Hamdi et al. (2013), trade openness can encourage ASEAN countries to take global market initiatives by reducing trade barriers in order to promote FDI flows. As a result, ASEAN-3 trade openness can assist increase foreign capital inflows.

The change in trade policy has made Malaysia's trade ties closer in the Southeast Asian region as well as moving in tandem with its trading partners towards achieving a competitive market. In addition, the provision of greater flexibility to foreign equity in the participation of local firms also affects FDI inflows in Malaysia. Indonesia is seen to have

sought to liberalize the economy by making adjustments to FDI. The implications of trade openness are seen to have helped Indonesia in establishing trade relations through the implementation of several agreements including the Regional Comprehensive Economic Partnership (RCEP). These efforts have made the role of trade openness influence FDI inflows in Indonesia. Thailand has made significant attempts to develop economic partnerships, including Free Trade Agreements (FTAs), with a number of developed countries. In Thailand, trade liberalization has led to the continuous increase in FDI inflows over time.

In general, trade openness is a key factor in determining FDI inflows. Appropriate investment policies must be established in order for ASEAN-3 countries to attract foreign investors through the provision of investment facilities. Trade openness factors have an impact on economic performance in terms of capital creation, external financing, infrastructure, technology, skills, and markets. Overall, the emphasis on an open economic system through trade openness needs to be enhanced and expanded so that long-run FDI inflows in ASEAN-3 are more consistent.

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