GOVERNANCE AND FOREIGN DIRECT INVESTMENT : EVIDENCE IN ASEAN

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ABSTRACT

This research analyzes the connection of Regulatory Quality (RQ) and Rule of Law (ROL) on Foreign Direct Investment (FDI) in ASEAN countries between 2002 to 2022. Utilizing the pooled mean group (PMG) technique with data sourced from the World Bank, the study found that Regulatory Quality significantly impacts FDI in the long term. Short-term results indicate significant corrections to the divergence of the long-term equilibrium production levels. Causality tests reveal a two-way relationship between FDI and Regulatory Quality in ASEAN countries, but no reciprocal relationship with Rule of Law was identified.

Keywords : PMA; PMG; RQ; ROL

ABSTRAK

Penelitian ini menganalisis hubungan antara Kualitas Regulasi (RQ) dan Aturan Hukum (ROL) terhadap Penanaman Modal Asing (PMA) di negara-negara ASEAN antara tahun 2002 sampai 2022. Penelitian ini menggunakan teknik Pooled Mean Group (PMG) dengan data yang bersumber dari Bank Dunia, penelitian ini menemukan bahwa Kualitas Regulasi secara signifikan berdampak pada FDI dalam jangka panjang. Hasil jangka pendek menunjukkan adanya koreksi yang signifikan terhadap divergensi tingkat produksi keseimbangan jangka panjang. Uji kausalitas menunjukkankankapkan terdapat korelasi dua arah pada PMA dan Kualitas Regulasi di negara-negara ASEAN, namun tidak ditemukan adanya hubungan timbal balik dengan Aturan Hukum.

Kata kunci : PMA; PMG; RQ; ROL

INTRODUCTION

A The evolution of the post-war era in conjunction with the shift towards economic deregulation has led to the globalization of companies. However, advances in technology, communication, and transportation during the previous 20 years have been a major factor in market globalization. In the present era, globalization has undergone extensive growth, resulting in a substantial increase in the number of countries and regions benefiting from internationalization (OECD, 2023). As a result, the volume of Foreign Direct Investment (FDI) has escalated to substantial levels in both developed and developing nations worldwide (Beyza Satoglu, 2017).

According to the research ASEAN & United Nations (2015), According to statistics, FDI inflow worldwide reached $1.76 trillion in 2015. In recent times, The

proportion of FDI directed towards developing nations has risen 45% of the overall inflows, highlighting the importance of rising economies as hosts for FDI. Conversely, there was a consistent upward trend in FDI originating from developing countries in 2015. In 2015, developing countries accounted for 28% of global FDI outflows, while it was only 12% in the early 2000s.

Throughout the past five decades, FDI has been broadly accepted as a growth driver in economic and policy literature. Moreover, it is used to boost infrastructure and human development and combat hunger, poverty and inequality. This has direct implications for prices, incomes, production, imports, and employment, as well as economic growth and public welfare in the host country (Beyza Satoglu, 2017). According a reports of World Bank (2016), this financial system functions well and contributes significantly to economic expansion. (Look Picture 1)

Southeast Asian Nations Association (ASEAN) has improved its economy by implementing a free trade and free investment strategy. This has made ASEAN a prime destination for foreign investors (Sitthivanh & Srithilat, 2022). The COVID-19 pandemic, which began in the latter part of 2019 and the initial period of 2020, has resulted in a slump in global commodity prices (World Bank, 2016). According to UNCTAD's 2020 report, foreign direct investment (FDI) into ASEAN hit a record high of US$ 182 billion in 2019, positioning ASEAN as the region that receives the most FDI among developing nations. The COVID-19 pandemic's unparalleled effects, however, caused FDI to significantly decline to US$ 137 billion in 2020. Lockdown measures, supply chain interruptions, dwindling corporate profitability, several pandemic waves, economic uncertainty, and multinational enterprises' (MNEs') delayed investments were the causes of this fall. The area saw a decline in all forms of investment activity (ASEAN & UNCTAD, 2021). This also contributed to the decline in the value and number of Greenfield project declarations evidenced by a 17 percent drop to $68 billion, Global project financing experienced a 21 percent decrease, amounting to $53 billion, and there was a significant downturn in cross-border mergers and acquisitions.

The COVID-19 epidemic is creating significant global health challenges. Countries around the world including ASEAN member states need to act swiftly to safeguard public health and manage the virus's dissemination within their respective

nations. The emergence of the pandemic has created serious challenges to economic stability in the ASEAN region. The decline in economic activity, increase in unemployment, and widespread business losses threaten the sustainability of economic growth in many countries around the world including ASEAN (OECD, 2020).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Sabir, Rafique, & Abbas. (2019) the success or failure of a country's government in addressing this, including its effectiveness in formulating and implementing health and economic policies, can provide insights into the effectiveness of the governing structures and regulatory framework within the nation. The stability and consistency of economic regulatory policies are also very important. Foreign investors tend to look for countries with stable policies, not drastically changing, and good governance as this creates predictability for long-term business operations. In a general sense, the attainment of effective governance stands out as a key driver for heightened FDI inflows within a nation. Effective governance structures and the quality of regulations directly influence the magnitudes of FDI and domestic investmet. By implementing sound regulations and adhering to principles associated with legal governance, a nation can establish a stable, reliable, and unquestionably appealing business environment for foreign investors (IMF, 2001).

The Rule of Law (ROL) remains essential for FDI, highlighting its significant impact on attracting international capital (World Bank, 2019). Subasat & Bellos (2013) highlight different facets that underlie how institutional conditioning influences the relationship between growth propelled by foreign investment. Institutions are pivotal in shaping the productivity potential of a country, hence attracting a greater number of foreign investors. Furthermore, underdeveloped institutions have a negative impact on the business climate, making FDI-funded companies particularly responsive to the governance structure of the nation where they operate. Multinational companies always seek investment where the institutional environment is favorable. Rule of Law promotes transparency in the legal system. This transparency creates an environment where investors can easily understand the applicable rules and regulations, reducing uncertainty and risk. Foreign investors are inclined to invest in host nations with clear institutional frameworks and consistent policies (Zhang & Liu, 2022).

Thus, the Rule of Law is not only a philosophical concept, but also a concrete foundation that influences foreign investors' decisions. Countries that apply Rule of Law principles can be more successful in attracting FDI and building strong and mutually beneficial investment relationships. The connection between Rule of Law and Regulatory Quality (RQ) variables is an crucial factor that influences the level of FDI in various countries including ASEAN member countries. Sabir, Rafique, & Abbas (2019) related to the Rule of Law impact FDI. Section 4 of this study discusses the econometric techniques applied to examine the relationship of each outcome variable. In section 5 there is an explanation of the conclusions.

The underlying theory of this research is the Eclectic Theory, or Eclectic Paradigm, proposed by John Dunning. This theory is a key framework for understanding foreign direct investment (FDI) and companies' international operations. It includes three components, known as the OLI Framework: Ownership, Location, and Internalization. Companies invest abroad if they have unique ownership advantages, select advantageous locations, and internalize their operations (Chen, 2020). Additionally, foreign investors' attitudes depend on government policies, socio-economic conditions, and the economy's vulnerability to external shocks (Baumann, 1998). This research measures FDI by examining the RQ index and the ROL index. RQ reflects the government's capacity to establish and enforce growth-promoting policies (Riker, 2022).

Kaushal (2021) investigates how institutional and regulatory quality affects FDI in India's economy from 2006 to 2019. India, a top recipient of FDI, has improved institutional quality (IQ) and attracted more FDI by reducing Economic Policy Uncertainty (EPU) and simplifying business operations. However, Sabir, Rafique, & Abbas (2019) found that in low-income countries, economic factors (GDP, inflation, labor productivity, infrastructure, and trade accessibility) exert a stronger effect on FDI than institutional quality. Transparency and accountability in governance, combined with a strong Rule of Law, create an environment favorable for foreign investors (Nik Mahmod, 2013).

Research indicates a favorable association of a strong Rule of Law and higher FDI inflows. For example, Alexander (2014) found that FDI in emerging nations is positively associated with a strong Rule of Law. Mengistu & Adhikary's (2011) analysis

of data from fifteen Asian countries between 1996 and 2007 supports this. Despite abundant natural resources, Fofana (2014) showed that legal system quality and compliance with Rule of Law are key drivers of FDI in Sub-Saharan Africa. Nonetheless, his findings show no substantial difference in the influence of the legal system on FDI in Western Europe.

H1: There is a presumed connection between Regulatory Quality and Foreign Direct Investment (FDI);

H2: There is a presumed connection between the Rule of Law and Foreign Direct Investment (FDI)

RESEARCH METHOD

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020:229). We have to make sure that every variable is combined in the same order before using the cointegration procedure. To do so, For the im dataset, we employ the first-generation panel unit root test, Pesaran, & Shin (2003, hereafter IPS), and the second generation panel unit root test of Pesaran (2005). In comparison to the methods established by Levin, Lin, & Chu (2002) and Breitung (2000), these are more reliable and less demanding, which prevent the autoregressive coefficients from being heterogeneous. The test put forward by IPS assumes heterogeneity among units within a dynamic panel framework, hence enabling the solution of Levin and Lin's issue of serial correlation. The following is the fundamental formula for the panel unit root test according to IPS:

$$\Delta y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \sum_{j=1}^{p} \phi_{ij} \Delta y_{i,t-j} + \varepsilon_{i,t}; \ i = 1,2,\dots,N; t = 1,2,\dots,T, \dots..(1)$$

where $y_{i,t}$ In our model, each variable is represented by a stand, α_i represents an individual fixed effect, and p is chosen to ensure that the residuals are uncorrelated across time. The null hypothesis is $\rho_i = 0$ for all i compared with its alternatife hypothesis, namely $\rho_i < 0$ for some $i = 1, \dots N_1$ and $\rho_i = 0$ to i = $N_1 + 1, \dots$ N.

IPS statistics are derived from the average of individual Dickey-Fuller (hereinafter referred to as ADF) Augmented statistics can be expressed as follows:

$$\bar{t} = \frac{1}{N}\sum_{i=1}^{N} t_{iT} \ \dots... (2)$$

Where t_{iT} is the ADF's t-statistic for the country i according country-specific ADF regresion, as in formula (2). Statistics $\bar{t}$ has been demonstrated to follow a normal distribution under H_0, with critical values for the specified N and T values are given in Im, Pesaran, & Shin (2003).

Considering the cross-sections to be independent, it is also true for all panel unit roots' first generation values, is a drawback of the IPS test. However, studies conducted in the literature have demonstrated that similar unobserved drivers, externalities, macroeconomic and regional linkages, and unaccounted residual interdependence are the causes of cross-section reliance. Several innovative panel unit root tests have surfaced recently, addressing the issue of reliance adn correlation in light of the ubiquity of macroeconomic dynamics and connections. We refer to these examinations as second generation panel unit root testing. The well-known Cross-Sectional Augmented IPS (CIPS), developed by Pesaran (2005), is one of the second generation tests covered in this study. , Pesaran (2005) This research uses the Cross-Sectional Augmented Dickey-Fuller (CADF) regression method, which is calculated using the Ordinary Least Squares method, to create a panel unit root test that takes cross-sectional dependence into account. The CADF regression is implemented for the i-th cross-section in the panel.

$$\Delta y_{it} = \alpha_i + \rho_i y_{i,t-1} + \delta_i \bar{y}_{t-1} + \sum_{j=0}^{k} \delta_{ij} \Delta \bar{y}_{i,t-j} + \sum_{j=0}^{k} \Delta y_{i,t-j} + \varepsilon_{it} \ ..... \ (3)$$

where, $\bar{y}_{t-1} = \left(\frac{1}{N}\right) \sum_{i=1}^{N} y_{i,t-1}$, $\Delta \bar{y}_t = \left(\frac{1}{N}\right) \sum_{i=1}^{N} y_{it}$, and t_i (N, T) is the t-statistic of the ρi estimate within the equation above is utilized to calculate individual ADF statistics. More precisely, Pesaran suggests a statistical test called CIPS, which calculates the average of individual CADF values.

$$CIPS = \left(\frac{1}{N}\right) \sum_{i=1}^{N} t_i (N, T) \ ..... \ (4)$$

Pesaran (2005) computed the critical values for CIPS across different deterministic terms.

Panel cointegration tests

After identifying the stationary sequence, we utilize the Pedroni cointegration test methodology. In fact, just like the IPS panel units' root, the panel cointegration test suggested from Pedroni (1999) additionally considers heterogeneity by utilizing specific parameters that allow for member diversity in the sample. It is impractical to assume that each member of the panel has the same cointegration vector, so taking this

heterogeneity into account is advantageous. The following long-term relationship estimates are necessary to implement the Pedroni Cointegration test:

$$(I/Y)_{it} = \alpha_i + \delta_i t + \beta_{1i}(S/Y)_{it} + \varepsilon_{it} , \ .... (5)$$

for i = 1, . . . , N; t = 1, . . . , T , N is the overall count of individual members in the panel, while T is the cumulative number of observations made throughout a period of time. The structure for estimating the residuals is as follows:

$$\hat{\varepsilon}_{it} = \hat{\rho}_i \hat{\varepsilon}_{it-1} + \hat{u}_{it} \ ..... (6)$$

To examine the data cointegration of the panel, Pedroni has proposed seven different statistical measures. Pooling, sometimes referred to as the "In" dimension, is the basis of four of the seven statistics, with the "Between" dimension serving as the basis for the other three. The null hypothesis, or the lack of cointegration, is the main focus of both kinds of tests. But where the two diverge are in the details of the other theory. Regarding the final three test statistics, an alternate hypothesis for tests based on the "In" dimension is $\rho_i = \rho < 1$ for all i. Indeed, the distinction is found in the details of the other theory. Regarding the final three test statistics, an alternate hypothesis for tests based on the "In" dimension is $\rho_i = \rho < 1$.

Pedroni has used Monte Carlo simulations to describe the sample distribution for each of the seven statistics. The computed statistical test must yield a result below the tabulated critical value to reject the null hypothesis that cointegration is nonexistent.

Panel cointegration estimation: Pooled Mean Group (PMG) approach

The practical aim of the study is to investigate the correlation and effects of Regulatory Quality (RQ) and the Rule of Law (ROL) on FDI in ASEAN nations. The empirical model used for this inquiry is outlined as follows:

$$FDI = f(RQ, ROL) ..... (7)$$

$$FDI = \beta_0 + \beta_1 RQ_{it} + \beta_2 ROL_{it} + e_{it}, i = 1, ..., 9; t = 2002 - 2022 \ ..... (8)$$

where FDI represents foreign direct investment inflows, whereas Rule of Law (ROL) and Regulatory Quality (RQ) act as substitutes for governance, is the error term of the i-th country during t-th period.

Applying the panel Autoregressive Distributedd Lag (ARDL) methodology for data analysis, the aim is to evaluate both the enduring and immediate effects of RQ and ROL on FDI in ASEAN countries. Pesaran, Shin, & Smith (1999) utilized the

estimation method for the pooled mean group (PMG). Hence, Equation 3 is calculated as shown below:

$$DFDI_{it} = \alpha + \sum_j^k \beta_{j2} DRQ_{i,t-j} + \sum_{j=0}^k \delta_{j2} DROL_{i,t-j} + \gamma ECT_{i,t-j} + \varepsilon_{it} \ ..... \ (9)$$

where β_{j2}, δ_{j2} is the coefficient, the symbol "represents" is used to denote the concept of white noise, while the symbol γ is employed as a symbol for the error correction term's coefficient (ECT). Equation 4 provided below demonstrates the interconnection of variables over an extended time period via the use of the Error Correction Term (ECT):

$$ECT_{i,t-j} = FDI_{it} - \alpha - \sum_j^k \beta_{j1} DFDI_{i,t-j} - \sum_{j=0}^k \delta_{j1} DRQ_{i,t-j} - \sum_j^k \theta_{j1} DROL_{i,t-j} \ ..... \ (10)$$

where $\beta_{j2}, \delta_{j2}, \theta_{j2}$ is the coefficient.

RESULT AND DISCUSSION

Stationarity tests are crucial in panel analysis since all projected variable integration orders need to be I(0) or I(1). The root unit tests of Levin, Lin, & Chu (2002), Im, Pesaran, & Shin (2003), Fisher-ADF (Maddala & Wu, 1999) are employed to search for indications of consistency. The outcomes of the unit root tests previously discussed are displayed in Table 1.

Table 1 displays the statistical test results for several variables using 3 different methods, namely Levin, Lin, Chu and Im, Pesaran, and Shin, with the ADF-Fisher Chi-square test. In general, the findings suggest that the order of integration for FDI, Regulatory Quality, and Rule of Law is either I(0) or I(1) across all variables. FDI represents the point at which the initial value, denoted as I(0), conclusively refutes the existence of a zero unit root in levels. However, while the initial difference level unit zero is deemed acceptable, the remaining two variables possess first-order integration, denoted as I(1). Moreover, all variables are valid for differentiation at the first level.

This study used ARDL model for panel data approach instead of the standard static cointegration or panel cointegration due to the varying degrees of integration seen throughout the series (Asteriou & Monastiriotis, 2004). The panel ARDL technique is distinguished by many advantages. Among these advantages is the capacity to estimate a large number of variables. One advantage of this is that it may be used to estimate variables with different levels of stationarity, like Table 1. Furthermore, the data indicates either I(0) or I(1), depending on the investigation. Moreover, Furthermore, these estimators enable the estimation of associations in both the short and long term, as well as the inclusion of error correcting variables in the study.

The panel cointegration test is employed using the outcomes of the preceding nonstationarity examination. Cointegration is tested using the Pedroni (2004) method when the variables are not stationary. Table 2 displays the outcome of Pedroni's Cointegration Test, a statistical technique applied to investigate the possibility of cointegration among variables in the analysis of panel data. Cointegration tests play a crucial role in time series analysis since they ascertain the long-term relationship between the observed variables. In this table, there are several test statistics performed, with two test dimensions considered: Panel (Within) dimension and Group (Within) dimension.

Table 2 displays the outcome of the Pedroni Cointegration Test, panel data analysis employs a technique to assess the enduring association between variables, known as a method to analyze the long-run relationship. There are four test statistics conducted in two different dimensions: Panel (Within) dimension and Group (Within) dimension. The v-Panel and rho-Panel statistics, which test for cointegration in the Panel dimension, show insignificant statistical values with probability 0.2503 and significant 0.0069, respectively. This presents compelling evidence to support the rejection of the null hypothesis, thus indicating the existence of cointegration within the panel dimension.

In addition, the Panel PP and ADF-Panel statistics also provide consistent results with probabilities close to zero. The tests consistently yield significant findings, indicating the existence of cointegration among the variables in the panel data analysis over an extended period, implying that the variables maintain a consistent relationship over an extended period. Both long-run and short-run correlations may be explained using the pooled mean panel ARDL method. Tables 3 and 4 present the empirical findings for ASEAN countries concerning the immediate and prolonged associations between economic growth and its key determinants.

Table 3 provides an extensive analysis of the correlation between Regulatory Quality and Rule of Law factors of FDI. The results show that all estimated coefficients are accurately interpreted and statistically significant, suggesting a strong association in the long term. The Regulatory Quality variable has a positive significant coefficient estimate (2.3268***) indicating that an increase in regulatory quality can make a significant positive contribution to long-term FDI. The findings of this examination

align with prior investigations carried out by Sabir, Rafique, & Abbas (2019) which states that a country with poor regulatory quality will hinder the entry of investors to invest in the country that will become an investment destination because the poor regulatory quality owned by a country will cause investors to experience obstacles in the intended market such as export-import barriers and licensing.

The coefficient estimate for the Rule of Law variable is -2.3604***, indicating that an augmentation in the Rule of Law is linked to a substantial adverse effect on long-term Foreign Direct Investment (FDI). Consistent with prior studies, research has shown that a strong legal system and commitment to the Rule of Law can encourage the inflow of foreign direct investment (Zangina & Hassan, 2020). Hence, the underperformance of the chosen nations in the rule of law index may be the reason behind their incapacity to allure FDI.

Table 4 presents the findings of short-run dynamics. In this table, the outcomes of coefficient estimation are displayed through the utilization of the Pooled Mean Group (PMG) method, specifically examining the relationship of certain variables with short-term economic growth (Short-Run Coefficients).

The conclusions of the short-run dynamics are shown in Table 4's estimate results. The coefficient provides considerable evidence for a stable long-run connection with the right sign between thee variables in the lag-added error correction term. According to the coefficient, the deviation of the output from the long-run equilibrium level in a particular year is reduced by 87% in the subsequent year. The short-term output elasticity measure of regulatory quality, which is negative, has been determined to be statistically significant, whereas Rule of Law (negative) is proven to be statistically insignificant in the near term. Consequently, a noteworthy discovery of this research is that only regulatory quality has a significant impact on Foreign Direct Investment (FDI) both in the short run and the long run. While, Rule of Law only significantly affects FDI in the long run. Table 5 displays the outcomes of testing short-run coefficients that vary across nations.

With the exception of the Philippines, it has a statistically significant result with a significance level of 5%, Table 5 displays the results for each ASEAN nation: Indonesia, Malaysia, Singapore, Thailand, Vietnam, Laos, Myanmar, and Cambodia. Each country's at the 1% level, the error correction term is statistically significant and

negative. Based on these results, most of the sample countries return to equilibrium rather slowly. For a time series to meet the Granger causality test criteria, there must be a long-term association or cointegration. Through panel cointegration testing, it was determined early in the inquiry that there is a long-term link between FDI, Rule of Law, and Regulatory Quality throughout the panel. In the context of panel data, the causal relationship between variables can be identified by employing the Dumitrescu & Hurlin (2012) panel causality test, thus allowing the researcher to determine whether a variable has a causal influence on other variables. Table 6 investigates the factors that cause and impact FDI for ASEAN countries.

A two-way reciprocal relationship between FDI and RQ exists in the sample countries, according to an analysis of the test results. FDI and ROL do not, however, have a one-way or two-way reciprocal relationship in the sample nations. data shows that the annual departure from the long-run equilibrium production level observed in a single year is corrected by 87% in the subsequent year. The equilibrium is mainly reached at a sluggish pace in most of the sampled countries in ASEAN. Additionally, a mutually influential relationship between research and development and FDI is revealed by looking at the findings of the causality testing in the study's participating countries. There is no discernible direct or indirect link between FDI and the Rule of Law (ROL) in the countries considered in the sample. Hence, nations aspiring to attract foreign investment should enhance and sustain various elements of good governance, as enumerated below, to optimize long-term economic prosperity for both foreign and domestic investors and stakeholders in the market.

These findings have significant implications for ASEAN policymakers. To attract and retain FDI, governments must prioritize improving regulatory frameworks that foster economic stability and growth. At the same time, efforts to strengthen the Rule of Law should not be neglected, as they provide long-term security for investors and promote sustainable economic development.

While this study provides valuable contributions to understanding the governance-FDI relationship, it is limited by its focus on only nine ASEAN countries and the time frame from 2002 to 2022. Future research could expand this analysis by incorporating additional countries and extending the study period to capture more recent global economic shifts, such as those caused by the COVID-19 pandemic. Additionally,

exploring other governance variables or control factors may offer a more comprehensive understanding of the nuances in FDI inflows across different regions.

CONCLUSIONS

This research presents empirical data on the correlation between governance variables and FDI by looking at 9 ASEAN member countries as a sample. The empirical findings demonstrate a significant correlation between governance and FDI. Research has shown that the governance indicator, namely Regulatory Quality, exerts a significant influence on Foreign Direct Investment (FDI) over a prolonged period of time. The coefficient in the short-run data shows that the annual departure from the long-run equilibrium production level observed in a single year is corrected by 87% in the subsequent year.

The equilibrium is mainly reached at a sluggish pace in most of the sampled countries in ASEAN. Additionally, a mutually influential relationship between research and development RQ and FDI is revealed by looking at the findings of the causality testing in the study's participating countries. There is no discernible direct or indirect link between FDI and the rule of law (ROL) in the countries considered in the sample. Hence, nations aspiring to attract foreign investment should enhance and sustain various elements of good governance, as enumerated below, to optimize long-term economic prosperity for both foreign and domestic investors and other stakeholders in the market.

Limitations of this study include the restricted sample size of only 9 countries in the ASEAN region, potential inadequacies in the measurement methods of governance and FDI, as well as data limitations that may affect the validity of findings and the generalization of study results. Furthermore, the neglect of potential control factors and the inability to establish definite causal relationships are critical aspects that need to be considered when interpreting the results of this research.

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TABLE AND PICTURE
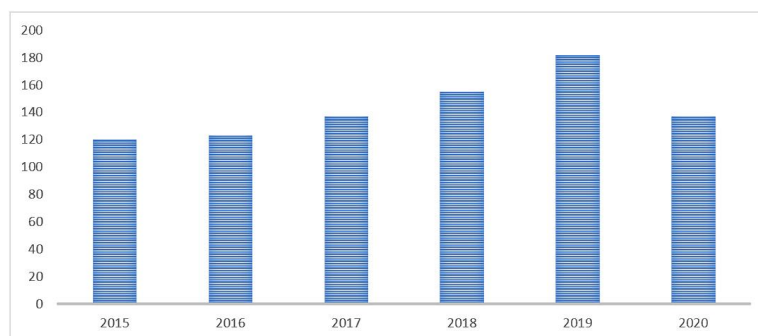
Picture 1. Foreign Direct Investment (FDI) Inflows in ASEAN 2015-2020
Source: UNCTAD, Processed data (2024)

Table 1. Panel Unit Root Tests

	Level			1st Difference		
	Levin, Lin, Chu	Im, Pesaran and Shin	ADF - Fisher Chi-square	Levin, Lin, Chu	Im, Pesaran and Shin	ADF - Fisher Chi-square
FDI	-3.9660***	-3.8767***	47.4024***	-8.6437***	-8.7449***	101.618***
RQ	-1.4175	0.1368	13.5083	-3.8580***	-5.2184***	62.2402**
ROL	-0.7656	-0.3731	16.2224	-2.8465***	-5.3516***	62.3817***

Notes: **,*** indicate the significance at the 5%, and 1% confidence levels, respectively.
Source: Processed Data (2024)

Table 2. Pedroni Cointegration Test

Test Statistics	Panel (Within Dimension)		Group (Within Dimension)	
	Statistic	Prob.	Statistic	Prob.
Panel v-Statistic	0.673494	0.2503		
Panel rho-Statistic	-2.462246	0.0069	-1.621769	0.0524
Panel PP-Statistic	-7.373545	0.0000	-6.438236	0.0000
Panel ADF-Statistic	-5.628312	0.0000	-3.779770	0.0001

Source: Processed data (2024)

Table 3. Full Panel PMG Estimation : Long-Run Coefficients

Variable	Pooled Mean Group Estimator	
	Coefficient	Standard Error
	Long-Run Coefficients	
RQ	2.3268***	0.5331
ROL	-2.3604***	0.7246

Notes: *** indicate the significance at the 1% confidence levels, respectively.
Source: Processed data (2024)

Table 4. PMG Estimation of the ASEAN: Short-Run Coefficients

	Pooled Mean Group Estimator	
	Coefficient	Standard Error
	Short-Run Coefficients	
ECM_{t-1}	-0.875384**	0.180926
ΔFDI_{t-1}	0.168275***	0.087249
ΔRQ	2.075165	1.653530
ΔRQ_{t-1}	-2.419407***	2.367349
ΔROL	-5.235707	5.086230
ΔROL_{t-1}	-1.480058	2.569578
C	4.551849	2.029287

Notes: **,*** indicate the significance at the 5%, and 1% confidence levels, respectively.
Source: Processed data (2024)

Table 5. PMG Estimations by Country: Short-Run Coefficients

Country	Coefficient of adjustment
Indonesia	-1.071575***
Malaysia	-1.547709***
Singapura	-0.908995***
Thailand	-1.864347***
Filipina	-0.437577**
Vietnam	-0.648918***

Laos	-0.459558***
Myanmar	-0.736758***
Kamboja	-0.203017***

Notes: **,*** indicate the significance at the 5%, and 1% confidence levels, respectively.

Source: Processed Data (2024)

Table 6. Dumitrescu and Hurlin Panel Causality Test

Hypothesis	W-Stat.	Zbar-Stat.	Prob.
RQ does not homogeneously cause FDI	3.40813	1.16791	0.2428
FDI does not homogeneously cause RQ	2.17378	-0.17338	0.8624
ROL does not homogeneously cause FDI	4.47715	2.32952	0.0198
FDI does not homogeneously cause ROL	4.96388	2.85843	0.0043

Source: Processed Data (2024)