Nexus between Foreign Direct Investment Inflows, Institutions, and Economic Factors: Evidence from ASEAN Countries

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ABSTRACT

This study aims to examine the predictors of inward foreign direct investments, with emphasis on economic factors and institutional structures in the ASEAN region using Pooled OLS and Random Effects estimations. It also explored the moderating role of institutional quality indicators on the effect of economic growth on FDI inflows.) were examined using pooled OLS and random effects estimations. Aggregate yearly data for the 10 ASEAN member states covering the period 2002-2020 were collected from the World Development Indicators and World Governance databases. The impacts of economic growth and trade openness on inward FDI are positive and significant, while financial development and inflation provided mixed results for the three models. Inflation showed positive effects on FDI among ASEAN5 countries, while its impact was negative among ASEAN-Other and the total sample. The moderating role of political stability and regulatory quality on the impact of economic growth on inward FDI in ASEAN5 were positive while mixed results were generated for ASEAN-Other and the total sample groups. The results provide policy insights to national governments in formulating new regulations that will enhance productivity and attract foreign investments in their countries.

Keywords: Foreign Direct Investments, Financial openness, economic growth, Institutional Quality.

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1. INTRODUCTION

Studies on cross-border transactions, especially foreign investments, have significantly accelerated over the past years and are primarily focused on country or cross-country comparisons, with few others on a regional basis. Foreign direct investments (FDI) are essential components of the development of a country, especially in the early 1980s when globalization heightened due to market and regional integration. It led many countries to open their markets by removing restrictions and providing incentives to attract investors. Many foreign investors, such as multinational companies, invested some capital and took management control over their investment by directly accessing its operations, marketing, and financial management, which enhanced shareholders' value.

Foreign direct investment has consistently been recognized as an essential driver of the economic development of the destination country, as more funds and resources are provided by the investing company, thereby facilitating the growth of the business and providing employment. ASEAN Secretariat and United Nations Conference on Trade and Development (2023) and Denis (2023) reported that the region is the top recipient of

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FDI among developing countries, with Singapore having the most significant FDI inflows, followed by Malaysia and Vietnam in the manufacturing and industrial sectors. Singapore is a favorite as an investment destination due to its regional integration, conducive investment policy framework, and fast expansion of businesses. These advantages were also highlighted by Athukorala and Waglé (2011) for Malaysia, where its investment policy and innovation capability are crucial drivers of FDI. The Malaysian Investment Development Authority (2023) also reported that FDI accounted for 56 percent of Malaysia's approved investment, with the Netherlands, Singapore, the USA, Japan, and China as the leading providers.

Aydoğan (2017) compared the FDI inflows in Turkey and other Central and Eastern European Countries (CEEC) and found that Poland and Russia were the biggest recipients of FDIs in 2012, while in 1990, the biggest recipient was Turkey. However, when the FDIs for 2012 were compared with other GDPs, Hungary reported the highest share of FDI, followed by the Czech Republic and Slovakia, with 83%, 69%, and 61%, respectively. Dziemianowicz et al. (2019) mentioned that location is a significant factor in investment decision-making, in line with the ownership, location, and internationalization paradigm proposed by Dunning in 1981. Multinational firms take cognizance of the ownership provided by direct investment as part of the internationalization activities. The host country also benefits from it through increased production networks that are not fully provided by domestic investment.

To date, studies have been undertaken related to the impact of macroeconomic factors (e.g., trade openness, economic growth, gross capital formation, etc.). Other studies focused on the effect of institutional underpinnings on FDI, while others concentrated on infrastructure development and natural resources as predictors of FDI inflows. Despite the documentation of the direction and patterns of FDI inflows in these countries or regions, there is still an existing gap that we would like to address. This research combines economic indicators, natural resources, and institutions as predictor variables. It measures the moderating role of selected institutional quality indicators on the impact of selected macroeconomic variables on FDI inflows as our contribution to the existing literature. We also grouped ASEAN countries into ASEAN-5(signing members), ASEAN-Other (new five member-states), and the total sample (all ASEAN member states).

2. LITERATURE REVIEW AND FRAMEWORK OF THE STUDY

2.1.Economic growth and FDI

Several studies have been conducted to measure the relationship between economic growth and foreign direct investments, and the findings vary. Alshamsi *et al*. (2015), Asongu *et al*. (2018), Chen and Jiang (2023), Grace (2019), Karau and Mburu (2016), Meressa (2022), Sabir *et al.*, (2019), Xaypanya *et al.* (2015) found ~~a~~ positive and significant impact of economic growth on foreign direct investments. Grace (2019) investigated factors affecting FDI in the ASEAN9 and ASEAN7 countries. She found that economic growth, which was used as a measure of market size, has a positive and significant impact on FDI. Ashurov *et al.* (2020) also support these findings, which show that the long-term positive and significant impact on Central Asia was evident. Asongu *et al*. (2018) also showed positive and significant results for the countries in the BRIC, MINT, and the total sample using the pooled OLS or fixed effects models.

It has been observed that when several countries are involved in a study, whether they are evaluated individually or as a group (Adelakun, 2023; Sabir *et al*., 2019) or when different

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methodologies are used, the results are diverse (Kayani *et al*., 2024). The study of Adelakun (2023) focused on the various factors affecting FDI inflows among the top ten recipients of FDI in Africa and found that economic growth has either short-run or long-run positive effects on FDI in Tunisia, Mauritius, Kenya, Ghana, South Africa, and Algeria while its negative impact was found for Egypt, Nigeria and Rwanda. Sabir *et al*. (2019) measured the level of FDI among developed and developing countries using fixed effects and GMM models. Mixed results were also generated where economic growth was found to have a positive effect on FDI in low-income and upper-middle-income economies. At the same time, a negative and weak impact was evident among lower-income and high-income economies using fixed effects estimation and a positive impact using GMM estimator. It was also corroborated by the study of Patiu *et al*. (2019), where mixed results were generated for the effect of GDP growth rate on FDI inflows in Asia and the Pacific region using different models for the pre-crisis and post-crisis periods. In another study, a long-run negative impact on economic growth and a short-run positive effect on foreign direct investment were the results of the research of Kayani *et al.* (2024) that investigated the levels of FDI in Thailand, Cambodia, and Vietnam.

H1. Economic growth positively affects inward foreign direct investments.

2.2. Financial Development and FDI

The impact of financial development on inward FDI revealed diverse results and opinions among researchers. Behera *et al.* (2020) investigated the effect of institutional quality, globalization, financial development, and economic growth (GDP) on FDI inflows in South Asia. They found a unidirectional causality from financial development to FDI and a positive long-run effect on FDI inflows. Boğa (2019) applied a pooled mean group estimator to measure the impact of financial development and other variables on FDI inflows in 28 Sub-Saharan African countries, and the results showed a long-run positive impact. On the other hand, Lestari (2022) found mixed results where a negative effect on FDI was initially found, and when financial development improved, the impact became positive. It was also supported by Desbordes and Wei (2014) for its direct and indirect effects, while for Xu and Wang (2024), financial development has a negative effect on FDI or it provides a positive effect which eventually decreases. Keykanloo and Hosseini (2020) and Bilir *et al.* (2013 cited in Pham *et al.* (2022) found adverse effects on FDI using several FD indicators in 11 different countries and 30 Asian developing countries.

Bahri *et al*. (2018) found a significant long-run relationship between financial development and foreign direct investment inflows in ASEAN5 countries and underscored its importance in promoting the inflows of direct investments. Pham *et al.* (2022) measured the cointegration existing between the two variables among 30 Asian countries covering the period 1986 to 2018 by employing a GMM estimator that resulted in a positive impact. Using the Granger causality test, they found a bidirectional relationship between the two variables. However, only a unidirectional relationship between financial development and FDI was the result of Behera *et al.* (2020) and Irandoust (2021) studies covering South Asia and six countries in North Asia, except Kazakhstan and Turkmenistan. Irandoust (2021) attributed the unidirectional relationship to external financing, which retards disintegration among countries and dilutes the adverse effect of competition. Dellis (2018) found that the diversity of financing sources available to the companies will attract multinational firms to invest in a host country. However, the findings of Basar *et a*l. (2023) showed no effect of financial development on FDI inflows.

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H2. Financial development positively affects inward foreign direct investments.

2.3. Trade openness and FDI

Ashurov *et al.* (2020) and Meressa (2022), Beri and Mhonyera (2023), Elheddad (2016) examined the crucial contribution of trade openness in promoting economic development and in attracting foreign investments and showed positive and statistically significant results. It was also corroborated by Boğa (2019) among Sub-Saharan and OECD countries, Sabir *et al.* (2019) among low-income, lower-middle-income, higher-middle-income, and high-income countries, and the conclusion was that trade openness is one of the primary predictors of FDI inflows. Wang and Li (2018) cited that its effect on FDI inflows varies depending on the host country's level of development, trade policies and restrictions, its natural resources, and other factors.

Abbasi (2022) reported that trade openness led to an increase in value, volume, and diversity of FDI inflows in Bangladesh, while it also accelerated FDI inflows in Jordan (Hamad *et al.*, 2018). However, the impulse response of FDI was positive only for the first four years and became negative in the succeeding six years. Asongu et al. (2018) also showed a positive effect on FDI among MINT countries, and the combined data for BRIC and MINT countries revealed a negative and weak effect in the MINT countries. The results of the study conducted on the effect of trade, governance, and environment on FDI inflows in Thailand, Vietnam, and Cambodia showed a long-run positive and significant impact and a short-run negative and insignificant impact of trade on FDI inflows (Kayani *et al.*, 2024). Dheera-aumpon and Changwatchai (2024) proved that despite the adverse effects of the pandemic, the higher GDP in the home country and the investor's openness to trade lessened the impact of the pandemic on the inward FDI in Thailand.

H3. Trade openness positively affects inward foreign direct investments.

2.4. Inflation and FDI

Several authors established the inverse relationship between inflation and inward FDI (Alshamsi *et al.* 2015; Lestari, 2022). Inflation provided a negative and significant effect on the flow of foreign direct investments in East Africa (Kaliappan *et al.*, 2015) in the ASEAN region (Karau and Mburu, 2016; Maibetly and Idris, 2022), and among developed and developing countries covering the period 1990-2010 (Siddica *et al.*, 2017). An increase in the inflation rate directly affects the prices of commodities and services, which becomes a disincentive among foreign investors. Conversely, when inflation rates are low, the cost of funding becomes cheaper. It encourages investors to find local partners in the chosen destination country for their investments (Alshamsi *et al.*, 2015; Mittal *et al.*, 2019). It is also indicative of market stability (Siddica *et al*, 2017), which increases return on investments (Grace, 2019). These findings were supported by Sabir *et al. (2019*) in their investigation of low-income and lower-middle-income countries, which use it as a proxy variable for economic stability and, sometimes, financial stability. On the other hand, Sultana (2016) and Eissa and Elgammal (2020) showed a positive impact of inflation on FDI inflows in India and the GCC region, respectively.

H4. Inflation negatively affects inward foreign direct investments.

2.5. Human capital and FDI

Human capital is a country's valuable resource that affects the inflow of foreign direct investment. Athukorala and Waglé (2011) proved that the region is a desirable

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destination for capital investment due to its skilled labor force. There were mixed findings on its impact on the ASEAN region. Despite the 2008 Global financial crisis, Kaliappan *et al.* (2015) also proved the positive and significant effects on FDI inflows in the ASEAN countries' service sector. Jadhav and Katti (2012, cited in Asongu *et al.,* 2018) showed that human capital has a positive and significant effect on inward FDI in BRIC countries. Phung (2016) also accounted for its favorable impact on inward FDI during the economic and political transformation of many countries in Central Asia due to low labor costs. Grace's (2019) investigation revealed a negative and statistically significant effect on FDI inflows in ASEAN9 and ASEAN7 countries. Human capital is a significant predictor of FDI because foreign investors search for host countries with high levels of technological innovation in their production. It enhances labor productivity, which investors target in order to achieve economies of scale. Maibetly and Idris (2022) also proved its positive and significant impact on FDI inflows in ASEAN5+3 countries. They noted the rising number of workforces in the region that increased labor productivity and business profits.

H5. Human capital positively affects inward foreign direct investments.

2.6. Natural resources and FDI

Recent empirical research papers have highlighted the inclusion of natural resources as a crucial indicator in explaining FDI inflows in the host countries. Asiedu (2006), cited in Boğa (2019) showed that the magnitude of export operations affects natural resources, which negatively affects FDI Inflows. Boğa (2019) regards natural resources as the primary determinant of foreign direct investments in South Africa. It was confirmed by Lu *et al.* (2020) in their study on the impact of oil and gas resources in covering the Commonwealth of Independent States. In their analysis, petroleum and oil reserves elicited positive coefficients; hence, they significantly impact the location decisions of multinational firms. Mouanda Makonda and Akylangongo Ngakala (2021) showed mixed results on the impact of FDI inflows (positive for forest rent in Sub-Saharan African countries and oil and mining rents in Central and West Africa). On the other hand, a negative impact of oil and mining rents in Southern and East African countries was noted.

Asongu et al. (2018) found positive but weak effects of natural resources on FDI, while adverse effects on MINT countries and combined BRICS and MINT countries' inward FDI. Its negative and weak effects on FDI inflows were seen, and this indicates that industries or businesses in these countries are generally market-oriented rather than resource-oriented. Chandra (2021) corroborated this idea by examining the influence of energy, electricity, and natural resources on FDI inflows in 198 countries. Using GMM and Pooled OLS, the outcome was positive and statistically significant. In another study, Eissa and Elgammal (2020) investigated FDI patterns and determinants among oil-dependent economies for the period 1990-2015 and 2000-2015 and concluded that it negatively affected FDI inflows in GCC countries. Similar results were generated on the negative impact of natural resources on FDI inflows.

H6. Natural resources positively affect inward foreign direct investments.

2.7. Institutional Quality and FDI

The role of institutional quality has been investigated in several econometric studies, which have examined how it affects the operations of firms, economic development, business relations and activities, and other activities. The flow and patterns of investments in a host country depend on various factors, one of which is the quality of institutions (Ahmad and Ahmed, 2014; Behera *et al.*, 2020; Karau and Mburu, 2016; Sabir *et al*., 2019). Ahmad

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and Ahmed (2014) emphasized its importance in enhancing the growth of an economy and in assessing the host country's procedures, policies, restrictions, or incentives. Karau and Mburu (2016) employed the Least Square Fixed Effect model and proved that political stability has significant and positive effects on FDI inflows in East Africa. Behera *et al.* (2020) did not find any short-run impact of institutional quality on FDI inflows. Bosire (2019) showed a negative effect of political stability and a positive effect of regulatory quality on the FDI inflows in Eastern African countries. Patiu and Eleazar (2018) investigated the impact of institutional quality, labor, and the level of infrastructure development on FDI inflows in the Asia Pacific region. They reported mixed effects, i.e., positive for the pre-global financial crisis and negative for the post-global financial crisis regarding the effect of political stability on FDI inflows in the region. Their findings revealed that regulatory quality had a positive and significant effect on FDI inflows, consistent with the findings of Meressa (2022) in Pakistan.

Sabir et al. (2019) also proved the positive impact of regulatory quality on inward foreign direct investments in high-income, upper-middle-income, and lower-middle-income economies using both fixed effects model and GMM estimators. They explained that compliance with regulatory quality standards is higher among developed countries than developing countries. Jadhav and Katti (2012, cited in Asongu et al. 2018) specified that among the institutional factors, regulatory capital and government effectiveness are crucial factors when foreign investors search for host countries. Joshi and Beck (2018) emphasized the pivotal role of the host country's political stability in investment decisions. They noted that a government will provide incentives to attract capital inflows. It supports the results of Mouanda Makonda and Akylangongo Ngakala (2021), who mentioned that political stability and control of corruption must be maintained and safeguarded in Sub-Saharan African countries as these are crucial determinants.

However, these were refuted in Bosire's (2019) study of the factors influencing FDI, where institutional quality elicited a negative but weak effect. Obalade (2024) showed the negative impact of institutional quality on FDI inflows in BRIC Countries. Still, the moderating role of institutional quality through its interaction with GDP proved that good institutional quality improves GDP, which in turn affects the inflow of direct investments in the region.

H7. Political stability and the absence of violence moderate the impact of economic growth on inward foreign direct investments.
H8. Regulatory quality moderates the impact of economic growth on inward foreign direct investments.

This study provides an empirical contribution to the existing body of knowledge through the policy implications that can be provided in our examination of the impact of economic and institutional factors (control variables) on foreign direct investment inflows. Inward foreign direct investment was used as the dependent variable, while economic growth, trade openness, financial development, inflation, human capital and natural resources were used as independent variables. We added two institutional quality variables (regulatory quality and political stability and absence of violence) as our control variables in Models 2 and 3 and were used as moderators, interacting with economic growth as found in equation 3

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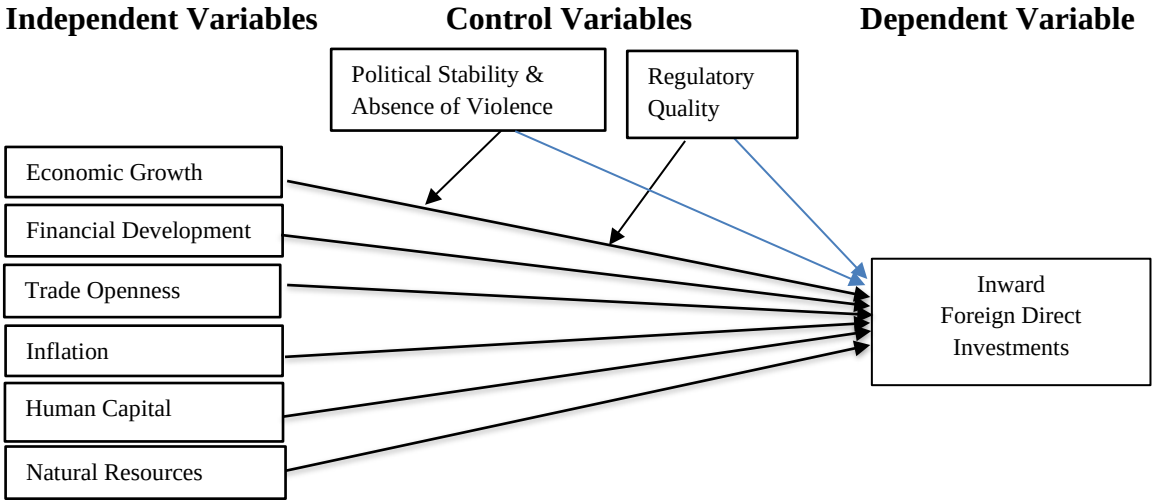
Figure 1. Conceptual Paradigm of the Study



3. METHODOLOGY

The study utilized quantitative research to analyze the impact of the factors affecting inward foreign direct investments in the ASEAN region. Specifically, an explanatory research approach was applied to a panel data set consisting of various indicators collected from the World Bank's World Development Indicators (WDI) and World Governance Indicators, which we compiled to constitute the set of independent and dependent variables used in the study. The panel data contained the 10 ASEAN member countries for the period 2002-2020 and are group as follows: ASEAN5 (Indonesia, Thailand, Malaysia, Singapore and the Philippines, ASEAN-Other (Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Vietnam) and Total Sample (all ASEAN member states).

Two-panel regression estimations, namely, Pooled OLS (POLS) and Random Effects (REM) models were applied in order to determine the impact of the macroeconomic and endowment indicators (independent variables), control variables and interaction terms on FDI inflows as shown in Models 1, 2 and 3 with the following formula:

Model 1: *Impact of independent variables (IVs) on FDI Inflows*

POLS: $FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + u_{it}$ (1)

$$REM : FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + u_{it} + \varepsilon_0 \quad (2)$$

Model 2: *Impact of IVs + control variables on FDI Inflows*

POLS: $FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + \beta_7 RQua_{it} + \beta_8 PSta_{it} + u_{it}$ (3)

REM: $FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + \beta_7 RQua_{it} + \beta_8 PSta_{it} + u_{it} + \varepsilon 0$ (4)

Model 3: *Impact of IVs + control variables + interaction terms on FDI Inflows*

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$$\text{POLS: } FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + \beta_7 RQua_{it} + \beta_8 PSta_{it} + \beta 9 EGr*RQua_{it} + \beta 10 EGr*PSta_{it} + u_{it} \quad (5)$$

$$\text{REM: } FDIni_{it} = \alpha + \beta_1 EGrw_{it} + \beta_2 FDev_{it} + \beta_3 TOpn_{it} + \beta_4 Infl_{it} + \beta_5 HCap_{it} + \beta_6 NRsc_{it} + \beta_7 RQua_{it} + \beta_8 PSta_{it} + + \beta 9 EGr*RQua_{it} + \beta 10 EGr*PSta_{it} + u_{it} + \varepsilon 0 \quad (6)$$

Where α is the intercept, FDI_n represents foreign direct investments net inflows, $\beta 0$ is the intercept of the regression line, $\beta 1$ to $\beta 10$ are the coefficients of the respective independent and control variables, EGrw represents economic growth, FDev refers to financial development, TOpn refers to inflation rate, HCap refers to human capital, NRsc represents Natural resources, RQua represents regulatory quality, PSta represents political stability and absence of violence, $EGr*RQua_{it}$ and $EGr*PSta_{it}$ are the interaction terms, $u_{it \text{ and }} \varepsilon 0$ refer to the error term. As shown above, only independent variables were included in Model 1. In Model 2, we added two institutional quality indicators (regulatory quality and political stability and absence of violence) as control variables to the independent variables used in Model 1. Lastly, the moderating roles of these two control variables on the impact of economic growth on FDI inflows were added to the predictor variables used in Model 2 to constitute the final model (Model 3) found in equation 3.

Patiu and Eleazar (2024) mentioned that the Breusch-Pagan Lagrange Multiplier (LM) test accounts for the variance across entities and is used to help decide between the Pooled OLS (POLS) and Random Effects Model (REM) where:

Ho: OLS estimation is appropriate (p-value > α) (7)
H1: Random effects estimation is appropriate (p-value < α) (8)

4. RESULTS AND DISCUSSIONS

Table 1: Descriptive Statistics

Variables	ASEAN-5			ASEAN - OTHER			TOTAL SAMPLE		
	Obs	Mean	SD	Obs	Mean	SD	Obs	Mean	SD
FDIni	95	5.787	7.718	95	5.101	3.509	190	5.444	5.989
EGrw	95	4.537	3.253	95	5.914	4.061	190	5.225	3.734
FDev	95	94.128	36.536	95	62.239	31.325	190	78.183	37.517
TOpn	95	153.73	115.81	95	107.41	33.505	190	130.57	88.139
Ifln	95	3.413	3.782	95	6.503	9.128	190	4.958	7.138
HCap	95	86.612	14.925	95	69.195	19.738	190	77.904	19.514
NRsc	95	12.242	9.161	95	29.255	32.981	190	20.749	25.603
RQua	95	0.017	1.208	95	-0.113	0.755	190	-0.048	1.006
PSta	95	-0.32	1.018	95	0.003	0.792	190	-0.158	0.924

Table 1 reports the descriptive statistics of the variables used in the study. The inward foreign direct investments in ASEAN-5 (μ = 5.787, SD = 7.718) are higher compared to ASEAN-Other (μ = 5.101, SD = 3.509. Among the predictor variables, trade openness (TOpn) showed a mean score of 153.733 (SD = 115.813) for the ASEAN-5, 107.407 (SD = 33.505) for ASEAN-Other, and 130.570 (SD = 88.14) for the total sample. Financial development (μ = 94.128, SD = 36.536) and human capital (μ = 86.612, SD = 14.925) also scored high for ASEAN-5 countries compared to the average scores generated for the

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ASEAN-Other countries. In contrast, the average scores for the total sample are lower than ASEAN-5 but higher than ASEAN-Other countries.

Economic growth (EGrw), is higher for ASEAN-Other countries compared to the growth rate experienced by the ASEAN-5 countries/ The inflation rate for ASEAN-Other countries, is twice as high as the average inflation rate for the ASEAN-5 countries. Natural resources also recorded very high for ASEAN-Other member countries (μ = 29.255, SD = 32.981) vis-a-vis ASEAN-5 member countries (μ = 12.242, SD = 9.161). There is a considerable disparity in the availability of natural resources among ASEAN-Other countries compared to ASEAN-5 countries. Regulatory quality is high in the ASEAN-5 countries while political stability (μ = 0.003, SD = 0.792) was higher for ASEAN-Other countries.

Table 2: Test for Multicollinearity

	ASEAN-5				ASEAN-Other				Total Sample									
Variable	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF	VIF	1/ VIF
FDev	2.11	0.47	4.77	0.21	4.87	0.21	2.4	0.42	2.7	0.37	3.73	0.27	2.48	0.40	3.49	0.29	3.61	0.28
TOpn	1.9	0.52	8.64	0.12	9.14	0.11	1.44	0.70	1.74	0.57	4.41	0.23	1.65	0.61	4.44	0.23	4.51	0.22
Ifln	1.8	0.56	2.01	0.50	2.26	0.44	1.18	0.85	1.19	0.84	1.25	0.80	1.26	0.79	1.27	0.79	1.27	0.79
NRsc	1.3	0.77	1.95	0.51	1.99	0.50	2.13	0.47	6.62	0.15	3.12	0.32	1.29	0.78	2.43	0.41	2.75	0.36
HCap	1.29	0.77	1.76	0.57	1.88	0.53	2.55	0.39	2.75	0.36	2.65	0.38	1.8	0.56	2.31	0.43	2.39	0.42
EGrw	1.21	0.83	1.25	0.80	1.72	0.58	2.25	0.44	2.34	0.43	2.21	0.45	1.65	0.61	1.69	0.59	2.2	0.45
PSta			5.41	0.18	10.3	0.10			4.09	0.24	6.21	0.16			3.12	0.32	6.1	0.16
RQua			3.91	0.26	9.79	0.10			3.47	0.29	6.4	0.16			2.38	0.42	6.35	0.16
EGrw* RQua					7.28	0.14					4.55	0.22					4.49	0.22
EGrw* PSta					6.69	0.15					3.32	0.30					3.54	0.28
Mean VIF	1.6		3.71		5.59		1.99		3.11		3.79		1.69		2.64		3.72	

To determine the presence of multicollinearity before proceeding with the analysis, we ran the variance inflation factor (VIF). Table 2 depicts that the mean VIFs for the independent variables for the three ASEAN groups are below 5.0. The results in Model 2 were also acceptable with the addition of control variables.

In Model 3, we added the interaction terms (EGrw*RQua and EGrw*PSta and showed that the mean VIFs for the three regional groups are within acceptable levels. Political stability in the ASEAN-5 countries showed high collinearity (VIF=10.3) after including the interaction terms (EcoGr*RQua and EcoGr*PSta), which increased the VIFs. Beusichem (2015) mentioned that the product resulting from the interaction term does not influence the reliability and robustness of the results, as moderation measures its conditional effect.

Table 3 (see next page) provides the outcomes of the Pooled OLS and Random Effect regression estimations. We applied the Breusch-Pagan Lagrange Multiplier test to select

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the appropriate method and proved that the Pooled OLS model is applicable. In Model 1, independent variables were used, and only financial development showed a significant negative effect on inward foreign direct investments among ASEAN-5 countries. In Model 2 (inclusion of control variables) and Model 3 (inclusion of moderation role of institutional qualities in Model 2), the regression results revealed a positive but insignificant effect on FDI inflows in ASEAN-5.

Table 3*:* Regression Results for the Inward FDI in the ASEAN-5 Region

	Model 1		Model 2		Model 3	
VARIABLES	POLS	REM	POLS	REM	POLS	REM
EcoGr	0.122	0.122	0.217*	0.217**	0.202	0.202
	-0.125	-0.125	-0.109	-0.109	-0.13	-0.13
FDev	-0.051***	-0.051***	0.006	0.006	0.007	0.007
	-0.015	-0.015	-0.019	-0.019	-0.019	-0.019
TOpn	0.064***	0.064***	0.023***	0.023***	0.023***	0.023***
	-0.004	-0.004	-0.008	-0.008	-0.008	-0.008
Infl	0.038	0.038	0.240**	0.240**	0.253*	0.253**
	-0.131	-0.131	-0.119	-0.119	-0.128	-0.128
HCap	0.105***	0.105***	0.026	0.026	0.026	0.026
	-0.028	-0.028	-0.028	-0.028	-0.03	-0.03
NRsc	0.037	0.037	0.019	0.019	0.017	0.017
	-0.046	-0.046	-0.048	-0.048	-0.05	-0.05
RQua			2.587***	2.587***	2.445***	2.445***
			-0.521	-0.521	-0.833	-0.833
PSta			2.390***	2.390***	2.432**	2.432**
			-0.727	-0.727	-1.012	-1.012
EcoGr*RQua					0.035	0.035
					-0.126	-0.126
EcoGr*PSta					0.002	0.002
					-0.146	-0.146
Constant	-9.562***	-9.562***	-2.005	-2.005	-1.897	-1.897
	-2.932	-2.932	-3.072	-3.072	-3.145	-3.145
Observations	95	95	95	95	95	95
R-squared	0.797		0.854		0.854	
No. of Countries		5		5		5
BPLM Test	Values	Decision	Values	Decision	Values	Decision
Chibar2(01)	0	POLS	0	POLS	0	POLS
p-value	1		1		1	

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

The inclusion of institutional quality in Model 2 strengthened the impact of economic growth and inflation, showing higher positive beta coefficients. Likewise, the R-squared values also increased for both Models 2 and 3, and all coefficients showed positive effects on inward FDI. It was found that trade openness, regulatory capital, political stability and absence of violence consistently showed significant effects, which prove that these are critical drivers of inward foreign direct investments. Natural resources and human capital also have a positive but weak impact on inward FDI. Despite the advantage of natural resource endowment in some countries, some investors are not keen on making investments where payoffs or benefits may accrue in the latter years, such as those related to exploration or resource extraction, and also that institutional quality must be guaranteed. In Indonesia

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and Thailand, multinational investors consider the use of resources involving manufacturing. The interaction terms between economic growth and regulatory quality (EcoGr*RQua) and economic growth and political stability (EcoGr*PSta) showed positive but weak effects on FDI inflows, which indicates that our hypotheses are supported.

Table 4: Regression Results for the Inward FDI in ASEAN-Other Region

	Model 1		Model 2		Model 3	
VARIABLES	POLS	REM	POLS	REM	POLS	REM
EcoGr	0.056	0.154*	0.153*	0.153*	0.227**	0.227**
	(0.100)	(0.080)	(0.090)	(0.090)	(0.101)	(0.101)
FDev	-0.038***	-0.034**	-0.023*	-0.023*	-0.021	-0.021
	(0.013)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
TOpen	0.058***	0.024***	0.023***	0.023***	0.022***	0.022***
	(0.004)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
Infl	-0.064	0.026	-0.047	-0.047	-0.048	-0.048
	(0.046)	(0.038)	(0.041)	(0.041)	(0.040)	(0.040)
HCap	0.030	0.059***	0.006	0.006	-0.001	-0.001
	(0.021)	(0.020)	(0.021)	(0.021)	(0.021)	(0.021)
NRsc	-0.020	0.004	-0.099***	-0.099***	-0.087***	-0.087***
	(0.013)	(0.020)	(0.016)	(0.016)	(0.017)	(0.017)
RQua			1.893***	1.893***	2.287***	2.287***
			(0.396)	(0.396)	(0.634)	(0.634)
PSta			3.201***	3.201***	2.183***	2.183***
			(0.533)	(0.533)	(0.716)	(0.716)
EcoGr*RQua					-0.038	-0.038
					(0.091)	(0.091)
EcoGr*PSta					0.205**	0.205**
					(0.087)	(0.087)
Constant	-1.063	-5.89***	5.711***	5.711***	5.802***	5.802***
	(1.734)	(1.989)	(1.828)	(1.828)	(1.872)	(1.872)
Observations	171	171	171	171	171	171
R-squared	0.607		0.696		0.707	9
No. of Countries		9		9		9
BPLM Test	Values	Decision	Values	Decision	Values	Decision
Chibar2(01)	52.96		0.00		0.00	
p-value	0.0000	REM	1.0000	OLS	1.0000	OLS

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 4 exhibits the regression results for the determinants of inward FDI in ASEAN-Other countries. When the BPLM test was applied, the Random effects model was favored over Pooled OLS model for Model 1, while Pooled OLS was chosen for Models 2 and 3. All independent variables showed positive effects on inward FDI in Model 1. The inclusion of the control variables in Model 2 improved the R-squared value from .607 to .696. Financial development's effect on FDI was negative among ASEAN-5 countries as shown in Model 1 but eventually became positive when the impact of regulatory quality and political stability and their interaction were added to ~~the~~ Models 2 and 3. The effects of RQua and PSta on FDI inflows were positive and significant. However, the coefficients for all the independent variables declined. To test the

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hypotheses on the moderation effect of regulatory quality and political stability and absence of violence, Model 3 reveals the positive and significant impact of the interaction terms on the entire regression model, with an R-squared value of .707. Mixed results were generated for the other independent and control variables. The coefficients of EcoGr, FDev, PSta and RQua increased; however, the rest of the variables decreased. As contrasted to the ASEAN5 countries, the interaction term EcoGr*RQua resulted to a negative and insignificant effect while a positive significant effect of EcoGr*PSta on inward FDI were posted.

Table 5: Regression Results for the Inward FDI in ASEAN (Total Sample)

	Model 1		Model 2		Model 3	
VARIABLES	POLS	REM	POLS	REM	POLS	REM
EcoGr	0.059	0.142*	0.132	0.176**	0.218**	0.218**
	(0.094)	(0.077)	(0.085)	(0.073)	(0.096)	(0.096)
FDev	-0.037***	0.027**	-0.023*	0.032**	-0.019	-0.019
	(0.011)	(0.013)	(0.012)	(0.013)	(0.012)	(0.012)
TOpen	0.058***	0.029***	0.027***	0.014**	0.026***	0.026***
	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Infl	-0.062	0.018	-0.036	0.034	-0.037	-0.037
	(0.043)	(0.036)	(0.039)	(0.034)	(0.038)	(0.038)
HCap	0.031	0.059***	0.002	0.038**	-0.006	-0.006
	(0.019)	(0.018)	(0.019)	(0.018)	(0.019)	(0.019)
NRsc	-0.020*	0	-0.086***	-0.019	-0.073***	-0.073***
	(0.012)	(0.018)	(0.015)	(0.019)	(0.016)	(0.016)
RQua			1.740***	1.582***	2.263***	2.263***
			(0.374)	(0.522)	(0.604)	(0.604)
PSta			2.689***	1.333**	1.612**	1.612**
			(0.467)	(0.553)	(0.645)	(0.645)
EcoGr*RQua					-0.06	-0.06
					(0.087)	(0.087)
EcoGr*PSta					0.213**	0.213**
					(0.083)	(0.083)
Constant	-1.209	-5.869***	5.238***	-2.295	5.225***	5.225***
	(1.617)	(1.785)	(1.744)	(2.005)	(1.779)	(1.779)
Observations	190	190	190	190	190	190
R-squared	0.623		0.699		0.71	
No. of Countries		10		10		10
BPLM Test	Values	Decision	Values	Decision	Values	Decision
Chibar2(01)	59.14	REM	26.86	REM	0	POLS
p-value	0		0		1	

Standard errors in reported in parentheses; *** p<0.01, ** p<0.05, * p<0.1

In Table 5, we again applied BPLM test to select the appropriate model specification for the total sample (all ASEAN member states) using the three models. It proved that REM is the best regression estimation for Models 1 and 2 (p-values < 0.05), while in Model 3, we use Pooled OLS regression estimation. Unlike other predictor variables, the coefficients of EGrw, TOpn, HCap, RQua, and PSta for the total sample are positive and increasing, as we added the control variables in Model 2. In Models 2 and 3, inflation and financial development have a negative impact on FDI inflows, which is consistent with our A-Priori expectation. The findings on financial development's impact on FDIni corroborate the conclusions of Keyvanloo and Hosseini (2020) and Bilir *et al*. (2013 cited in Pham *et al.* 2022) where they found its adverse effects of FDI using several FD

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indicators. The results for the inflation rate's impact were consistent with the results of Karau and Mburu (2016), Maibetly and Idris (2022), and Siddica *et al.* (2017).

The findings on EGrw and TOpn imply that as economic growth and regulatory quality improve in the ASEAN region, inward FDI increases, respectively. Despite the positive and significant effects of trade openness and political stability, the coefficients are decreasing. It proves that the power of the combined effect of these variables is decreasing as we add variables to the model. Like the ASEAN-Other countries, the interaction term between EcoGr*RQua is negative and insignificant, while EcoGr*PSta has a positive and significant effect on inward FDI. It means that the impact of the institutional variables on FDI inflows for ASEAN-Other countries has a substantial influence on the results generated for the total sample consisting of the 10 ASEAN member states.

5. CONCLUSIONS AND RECOMMENDATIONS

Globalization has intensified over the past three decades, especially with technological advancements, innovations, and other developments. National governments opened their economies for international investors through increased productivity, trade, communications, employment, and other activities to bridge the geographical divide among countries, religions, risks, and external shocks that have transcended at different levels. The study investigated the impact of economic indicators and the moderating effect of institutional factors on inward foreign direct investments in the ASEAN region using two-panel data regression models. Each model among three groups of countries in the region utilized either Pooled Ordinary Least Square or Random Effects estimations.

The impact of economic growth and trade openness on inward FDI are positive across all models in the three regional groups. It corroborates the findings of Ashurov *et al.* (2020), Grace (2019), Asongu *et al.* (2018), where these predictors provided positive and significant impacts on inward foreign direct investments in Central Asian countries, ASEAN region, and MINT countries, respectively. Thus, Hypotheses 1 and 2 are supported, given the positive coefficients for the three regional groups and models. The results for trade openness justify the relevance of having a liberal and open trade regime favorable to multinational or individual investors. It encourages investors to provide new funds in the destination countries that have better economic underpinnings and fewer restrictions, similar to the findings of Wang and Li (2018).

Mixed results were generated for financial development and inflation rate in the three groups of regression estimations in the region. A well-functioning financial system is crucial, especially in some of the ASEAN member countries, and must be aligned with the host country's financial condition to surpass any adverse shocks affecting the economy. Resource endowments are also considered by foreign investors when making crucial investment decisions, and proved that human capital has positive effects on FDI for both the ASEAN-5 and ASEAN-Other countries. Still, it exhibited negative effects on the total sample's FDI. For natural resources, the impact of the natural resources inward FDI in financial services can help improve host countries' financial conditions, at the risk of making the economy more vulnerable to international financial shocks. It is also consistent with the expectation that as economic activities flourish in the region, more multinational investors will consider the host country in that region for their direct investments. For these reasons, a country's growth strategy must be articulated around a well-functioning economic system, good governance with solid domestic foundations, and a transparent and

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high-quality institutions, resilience, and better economic growth It can maximize the net benefits provided by inward foreign direct investments in the country where both foreign investors and domestic companies benefit from it.

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