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Analyzing the governance-FDI nexus in Southeast Asia: An EGLS-SUR panel analysis

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ABSTRACT

Economic and institutional factors influence foreign direct investment (FDI) inflows. To address limitations in previous regional research, this study uses a balanced panel dataset spanning 19 years across all ten ASEAN member states. Employing a panel EGLS (cross-sectional SUR) methodology, we evaluate all six Worldwide Governance Indicators (WGI), both aggregated and disaggregated, alongside five macroeconomic controls: economic growth, exchange rate, financial development, unemployment, and human development. Results indicate that while aggregate governance significantly influences FDI, individual WGI dimensions are heterogeneous. Specifically, voice and accountability, rule of law, and control of corruption consistently exert positive effects, whereas other dimensions are inconsistent or unexpectedly negative. All control variables remain significant, aligning with theoretical frameworks. This study contributes through its full regional coverage and detailed analysis of governance dimensions, providing a clearer understanding of investment behaviors. The findings offer important policy implications: achieving sustainable economic growth via FDI requires targeted improvements in specific governance dimensions rather than broad institutional changes.

Contribution/ Originality: This study uniquely explores the aggregated and disaggregated effects of WGI on FDI across all ASEAN states. Using a rigorous Panel EGLS (Cross-sectional SUR) framework, it offers new insights into how WGI heterogeneously impacts FDI, demonstrating three key dimensions as priority reforms for driving FDI net inflows into the region.

1. INTRODUCTION

Economic growth has been used as an effective strategy for poverty reduction in many parts of the world. Following this strategy, the sustained economic growth in the Southeast Asian region, a region once mired in poverty for decades, has been a success story in the world of economic development. Almost all economies in the region have reached higher income levels in the last few decades and are making ample strides to rise to even higher levels on the income ladder in a decade or so. The attraction of foreign direct investment (FDI) is one of the dynamic strategies that has played a significant role in this regional growth narrative.

While human capital and macroeconomic factors remain significant, governance quality has emerged as a critical and influential driver for attracting cross-border investments. For example, effective regulatory frameworks, efficient institutions, and anti-corruption measures result in less investment uncertainty and boost confidence of multinational enterprises (Siddica & Angkur, 2017; Vogiatzoglou, 2016; Wei, 2000).

More precisely, for low and middle-income developing economies, FDI boosts their productivity, provides advanced technology, and brings constant long-term capital (Bhujabal, Sethi, & Padhan, 2024; Coe & Helpman, 1995; Mercer-Blackman, Xiang, & Khan, 2021; Nupehewa et al., 2022; Saurav & Kuo, 2020). Additionally, it is a significant engine of economic diversification, employment creation, and globalization (Buracom, 2014; Daud, Mohamoud, Mohamed, & Abdi, 2025; GuechHeang & Moolio, 2013). Given all these benefits for developing economies, FDI disbursement at a global scale has remained uneven, with low and middle-income countries characterized by weaker institutional frameworks receiving a significantly smaller share of foreign investment compared to their developed neighboring counterparts (Ragoussis, Rigo, & Santoni, 2024). This unevenness suggests that solely pure macroeconomic factors seem inadequate for totally explaining FDI trends (Wang, Xu, Qin, & Skare, 2022). But, multidimensional dynamics of good governance, institutional quality, together with macroeconomic factors, drive contemporary patterns of foreign capital flows (Gökçeli, 2023).

Theoretically, frameworks such as the "*Ownership, Location, and Internalization (OLI) paradigm*" (Dunning, 1988; Dunning & Lundan, 2008) and *"Transaction Cost Economics (TCE) framework"* (Williamson, 1979) suggest that a predictable and solid institutional establishment is necessary for foreign companies to successfully mitigate operational uncertainties and use prospects with their host economy's location-related advantages. ASEAN, a rising economic bloc, is an ideal case for examining this phenomenon because the region has attracted approximately 17% of global FDI net inflows in 2023 (ASEAN Secretariat & UNCTAD, 2024). Following this foreign capital inflow in ASEAN, the region has experienced remarkable economic development and trade liberalization, resulting in a significant decrease in poverty rates (Siddica & Angkur, 2017).

Nevertheless, FDI realities in ASEAN face substantial internal disparity, with the region receiving a historically high disbursement of US$230 billion in 2023 in foreign investments, but those funds were unevenly distributed among selected markets, including Singapore, Vietnam, and Indonesia (ASEAN Secretariat & UNCTAD, 2024). Such a large internal disparity in receiving FDI is based on differences in terms of economic development, partially together with political regimes, and most critically, the quality of governing institutions among the member states. Hence, an examination of the aggregated and disaggregated effects of all six WGI is crucial for efficient policy formulation (Kaufmann, Kraay, & Mastruzzi, 2010).

Given the background gained from theoretical and empirical literature, the key question our study addresses is this. How much do the aggregated and disaggregated dimensions of governance quality matter for attracting FDI into ASEAN? In answering this central question, this study aims to address three key limitations in existing research in this area: (i) simplification due to aggregation of institutional indicators, (ii) utilization of selective countries sampling, and (iii) inadequate treatment of certain econometric issues, such as endogeneity and cross-section dependence (Bhujabal et al., 2024; Hananya & Handoyo, 2021; Masron & Naseem, 2017; Sakinah & Firmansyah, 2024; Siddica & Angkur, 2017). Accordingly, to the best of our knowledge, this research is the first study that utilizes a Panel EGLS (Cross-section SUR) specification to address these econometric specifications, hence providing a more accurate and statistically robust assessment of the governance-FDI nexus.

To this end, a balanced panel dataset spanning the period between 2002 and 2020 for all ASEAN member states has been used in this study. The FDI net inflows serve as the dependent variable for this study's econometric specification, whereas all six disaggregated WGI indicators together with their composite index are used as independent variables. Common macroeconomic control factors such as economic growth, exchange rate, unemployment rate, financial development, and human development are also included to accurately segregate the effects of governance indicators. All data were sourced from reputable international organizations.

The remainder of the paper is structured as follows: Section 2 contains a brief literature review, while Section 3 details the methodology. In Section 4, we present statistical results and relevant discussions on both key and control variables. The conclusion, limitations, and future research directions are given in Section 5, and Section 6 is dedicated to policy recommendations.

2. LITERATURE REVIEW

While good governance typically influences FDI flows, the complex and interconnected relationship of governance indicators, such as the impacts of specific dimensions, the disputed role of corruption, or regional implications, continues to attract researchers' attention (Masron & Naseem, 2017). This section reviews relevant theories and empirical evidence on the governance-FDI nexus to better understand its implications for the ASEAN region while identifying specific research gaps.

2.1. Theoretical Frameworks

The traditional economic theories, such as "Dunning's OLI Model" and TCE, argue that strong governance positively affects FDI inflows. The extent of the host country's institutional quality is likely an important location-specific advantage (Dunning, 1988; Dunning & Lundan, 2008), meaning that foreign investors may use this as an ownership and internationalization advantage, thus minimizing their costs relevant to the operation in foreign markets. Similarly, effective and transparent regulatory systems reduce the risk associated with transnational investments and reduce the transaction costs (Busse & Hefeker, 2007; North, 1990). However, endemic political instability or the prevalence of widespread corruption significantly increases the risk of asset expropriation or contract implementation failures, which ultimately deters the foreign companies from investing in the country as investors prefer a secure and foreseeable business landscape (Wei, 2000).

2.2. Contrasting Role of Corruption

Although theoretical frameworks support foreign investment companies' preference for stable, foreseeable future business landscapes, observed results, specifically on disaggregated indicators like corruption or government effectiveness, sometimes show mixed or even inconclusive outcomes (Jensen, 2008). One such outcome in the context of corruption is the "Sand in the Wheels" versus "Grease the Wheels" hypotheses; the former suggests that corruption acts as an unofficial tax on transactions, which discourages foreign investors' decisions about FDI (Globerman & Shapiro, 2002; Wei, 2000). In contrast, the latter views this relationship as reverse: corruption could, in the context of bureaucratic red tape or overregulatory frameworks, help ease business operation and facilitate better access to getting around regulatory hurdles (Aluko, Garri, Owalla, Kim, & Pickernell, 2024; Barassi & Zhou, 2012; Egger & Winner, 2005; Gastanaga, Nugent, & Pashamova, 1998; Habib & Zurawicki, 2002).

2.3. Beyond Linearity and Institutional Disparity

The governance-FDI relationship hardly follows a linear path, especially with the effects of anti-corruption, regulatory frameworks, and the government's efficiency being more evident (Kurul, 2017). Generally, the benefits of improvements in governance on FDI inflows yield a higher level among weak-to-moderate institutional quality than among highly stable institutional systems. In addition, differences in governance quality between the investor's home country and that of the host country matter. For example, firms coming from robustly governed economies may face greater adjustment costs and less confidence in regulatory enforcement or market operations in economies with weaker domestic institutions (Kapás & Czeglédi, 2020; Kogut & Singh, 1988).

2.4. Governance-FDI Nexus in ASEAN: Existing Empirical Evidence

Empirical evidence on ASEAN is also mixed or even conflicting on the role of governance indicators in attracting FDI. For example, some evidence broadly supports the positive role of governance composite indexes for FDI inflows, but certain specific dimensions of governance indicators like the efficacy of regulatory frameworks or political stability show ambiguous and complex, rather statistically insignificant or even negative findings on affecting investment decisions (Bastiaens, 2016; Bhujabal et al., 2024; Hananya & Handoyo, 2021; Saha, Sadekin, & Saha, 2022; Vogiatzoglou, 2016). Such discrepancies and counterintuitive outcomes likely reflect specific local conditions (e.g., centralized yet stable governmental structures), different methodological specifications, timeframes, and limited country samples.

2.5. Research Gaps and Study Contributions

Existing literature on ASEAN covering these areas has hitherto failed to include an in-depth study on governance drivers of FDI inflows at both the aggregated and disaggregated governance indicator levels, accounting for differential characteristics in all member states of the ASEAN bloc. Our study contributes by addressing three major research gaps: Firstly, some studies used the Principal Component Analysis (PCA) technique, often aggregating heterogeneous governance dimensions under a single or few composite indices, which likely mask specific policy-relevant effects in sub-dimensions (Bhujabal et al., 2024). We segregate all six dimensions of WGI and provide more substantial policy prescriptions. Second, existing studies frequently used limited country samples from respective similar or dissimilar geographic areas, which tend to distort regional conclusions (Phommouny, Shuquan, Xayphachanh, & Rakotondrazaka, 2024). We analyze data from all ten ASEAN countries in the same economic regional bloc and seek wider relevance for our analysis. Finally, numerous works failed to consider the essential issues of panel data, such as cross-sectional dependence or endogeneity, that are likely to yield spurious results (Siddica & Angkur, 2017); we utilize robust Panel Estimated Generalized Least Squares (EGLS) Seemingly Unrelated Regression (SUR) specification and provide statistically reliable inferences.

Our study, addressing these gaps systematically, offers an in-depth understanding of how governance indicators, both at an individual and collective levels influence FDI inflows in the regional bloc.

3. MATERIALS AND METHODS

3.1. Strategy and Scope of Analysis

We employ a two-stage analysis approach, beginning with fundamental descriptive statistics and econometric estimation for using aggregated and disaggregated WGI in the models and detailed treatment as well as transformation of variables, and panel diagnostic tests for robustness of model specification, to find how governance dimensions influence FDI net inflows in all member states of the ASEAN bloc covering the time period from 2002 to 2020.

3.2. Variables and Data

This study covers the panel dataset spanning the period between 2002 and 2020 from all ten ASEAN countries.

As FDI net inflows and economic growth (ECG) include negative, positive, and zero values, which precludes the use of standard logarithmic transformations, both variables were transformed using the Inverse Hyperbolic Sine (IHS) transformation method (Equation 1).

$$IHS(X) = \text{arcsinh}(X) = Ln\left(X + \sqrt{X^2 + 1}\right) \quad (1)$$

This choice, in line with existing literature (Busse & Hefeker, 2007; Dauti, 2015; Globerman & Shapiro, 2002), has the advantage that it maintains the algebraic sign of all the data observations while compressing the scale itself very well, accounting for the full range of values. For the rest of the control variables, we use a logarithmic transformation for subsequent econometric estimation. We used WGI in its original form. Table 1 presents details on variables, their transformed symbols, measurements, and data sources.

Table 1. Data sources, variable description, and measurement.

<table>
<tr><th>Variables</th><th>Symbols</th><th>Measurements</th><th>Data sources</th></tr>
<tr><td colspan="4">Dependent variable</td></tr>
<tr><td>Foreign direct investment</td><td>IHS(FDI)</td><td>Net inflows of foreign direct investment (Balance of payment, current [BoP] US$).</td><td>World development indicator (WDI) Data Set.</td></tr>
<tr><td colspan="4">Key Independent Variables</td></tr>
<tr><td>Control of Corruption</td><td>CC</td><td rowspan="6">"Estimates of standardized score of governance performance ranging from -2.5 (Weak governance) to 2.5 (strong governance). The six aggregate indicators are based on over 30 underlying data sources reporting the perceptions of governance of a large number of survey respondents and expert assessments worldwide" (Kaufmann et al., 2010; Kaufmann, Kraay, & Zoido-Lobatón, 1999).</td><td rowspan="6">Worldwide Governance Indicators (WGI)</td></tr>
<tr><td>Government Effectiveness</td><td>GE</td></tr>
<tr><td>Political stability and absence of violence / Terrorisms</td><td>PS</td></tr>
<tr><td>Rule of Law</td><td>RL</td></tr>
<tr><td>Regulatory quality</td><td>RQ</td></tr>
<tr><td>Voice and accountability</td><td>VA</td></tr>
<tr><td>Institutional quality composite index</td><td>IQ</td><td colspan="2">Constructed by averaging the six WGI using equal weights.</td></tr>
<tr><td colspan="4">Control variables</td></tr>
<tr><td>Economic growth</td><td>IHS(ECG)</td><td>Gross Domestic Product (GDP) annual growth rates (%).</td><td rowspan="2">WDI</td></tr>
<tr><td>Exchange rate</td><td>LXCH</td><td>"Official exchange rate (LCU per US$, period average".</td></tr>
<tr><td>Financial development index</td><td>LFD</td><td>Estimate of financial institutions and the financial market considering their "depth, access, and efficiency" (International Monetary Fund, 2016).</td><td>IMF</td></tr>
<tr><td>Unemployment rate</td><td>LUEM</td><td>"Total (% of total labor force), modeled as ILO estimate" (International Labour Organization, 2024).</td><td>ILO</td></tr>
<tr><td>Human development index</td><td>LHDI</td><td>"Average achievement in key dimensions of human development: a long and healthy life, being knowledgeable, and having a decent standard of living." (United Nations Development Programme., 2019).</td><td>UNDP</td></tr>
</table>

Table 2 presents the summary of the descriptive statistics of the dataset in their transformed forms used in the EGLS (Cross-section SUR) model estimation for the dependent variable, and all key explanatory and macroeconomic control variables. These statistics are calculated for the full sample period, which includes all ten member states of the ASEAN bloc. These statistics are useful for gaining the contextual basis for the analysis. For example, variation exhibited in the dataset (noted by high standard deviation) justifies using a panel EGLS-SUR approach.

Table 2. Summary of descriptive statistics: 2002 to 2020.

Variables	Mean	Maximum	Minimum	Std. Dev.	Obs.
IHS(FDI)	18.872	22.045	13.297	1.603	190
CC	-0.283	2.301	-1.673	0.999	190
GE	0.099	2.469	-1.628	1.014	190
PS	-0.158	1.599	-2.095	0.924	190
RL	-0.231	1.839	-1.736	0.888	190
RQ	-0.048	2.252	-2.349	1.007	190
VA	-0.761	0.322	-2.233	0.681	190
IQ	-0.230	1.614	-1.753	0.816	190
IHS(ECG)	1.480	2.353	0.002	0.497	190
L(XCH)	2.181	4.366	0.097	1.614	190
L(FD)	-0.519	-0.081	-1.155	0.304	190
L(UEM)	0.321	0.969	-0.921	0.398	190
L(HDI)	-0.169	-0.027	-0.366	0.082	190

3.3. Econometric Specification

The econometric analysis follows a systematic process, beginning with diagnostic tests to address panel data complexities before estimating the final model.

3.3.1. Cross-Sectional Dependence

Initial diagnostic tests addressed the potential for cross-sectional dependence (CSD), which can arise from common external shocks, economic linkages, or other factors affecting multiple countries in the panel (Baltagi & Pesaran, 2007). Ignoring it can lead to underestimated standard errors and flawed conclusions. To test for this issue, the study used three tests: the "Lagrange Multiplier" (LM) test (Breusch & Pagan, 1980), the "Cross-sectional Dependence" (CD) test (Pesaran, 2004, 2007), and the "Bias-Adjusted LM" test (Pesaran & Yamagata, 2008). In our study, the time dimension (T) is larger than the cross-sections (N) (Pesaran, 2004) CD test is robust to this type of heterogeneous panels. This study uses the following equation of the standard panel data model for CSD.

$$y_{it} = \alpha_i + \beta_i' x_{it} + u_{it} \qquad for\ i = 1, 2, \dots, N;\ t = 1, 2, \dots, T \qquad (2)$$

Here, we follow Pesaran (2004) as an index i denotes cross-sectional dimensions, whereas t the time dimensions of the time series, and x_{it} is a K-dimensional vector of strictly exogenous regressors (i.e., $K \times 1$ independent variables) with unity on its first row. The coefficient, β_i, is a vector of parameters to be estimated (i.e., $K \times 1$), and α_i is time-invariant individual nuisance parameters (i.e., individual effect with constant time). Under the null hypothesis, u_{it} are assumed to be independent and identically distributed $(i.i.d.)$ over time periods and cross-sectional units (i.e., countries).

Thus, mathematically, the null hypothesis of interest can be written as:

$$H_0: \rho_{ij} = \rho_{ji} = corr\left(u_{it}, u_{jt}\right) = 0 \qquad for\ all\ i \neq j \quad (3)$$

Similarly, under the alternative hypothesis, u_{it} may be correlated across cross-sections and suffer from cross-sectional dependence, but the assumption of no serial correlation remains.

$$H_1: \rho_{ij} = \rho_{ji} = corr\left(u_{it}, u_{jt}\right) \neq 0 \qquad for\ some\ i \neq j \quad (4)$$

Where ρ_{ij} is the product-moment correlation coefficient of the estimated residuals, and it is calculated by.

$$\rho_{ij} = \rho_{ji} = \frac{\sum_{t=1}^{T} u_{it} u_{jt}}{\left(\sum_{t=1}^{T} u_{it}^2\right)^{1/2} \left(\sum_{t=1}^{T} u_{jt}^2\right)^{1/2}} \qquad (5)$$

with the number of possible pairings, $\left(u_{it}, u_{jt}\right)$, rises with N.

As in the case of SUR estimation, (Breusch & Pagan, 1980) proposed an LM statistic. This statistic is valid for fixed N and $T \rightarrow \infty$ and is given by.

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2 \qquad (6)$$

where $\hat{\rho}_{ij}^2$ is the sample estimate of the pairwise correlation of the residuals.

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^{T} \hat{u}_{it}\hat{u}_{jt}}{\left(\sum_{t=1}^{T} \hat{u}_{it}^2\right)^{1/2}\left(\sum_{t=1}^{T} \hat{u}_{jt}^2\right)^{1/2}} \quad (7)$$

And $\hat{u}_{it}$ is the estimate of u_{it} in Equation 2.

The LM statistic is asymptotically distributed as χ^2 with $N(N-1)/2$ degrees of freedom under the null hypothesis of interest, H_0. However, this LM test is likely to exhibit substantial size distortions when N is large and T is finite – a situation commonly encountered in empirical application, primarily because the LM statistic is not correctly centered for finite T, and the bias is likely to worsen as N increases.

To overcome this limitation, Pesaran (2004) has proposed the following CD statistic as an alternative,

$$CD = \sqrt{\frac{2T}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij} \quad (8)$$

and showed that under the null hypothesis of no cross-sectional dependence, follows the asymptotic standard normal distribution, $CD \to N(0, 1)$ for $N \to \infty$ and T sufficiently large.

Unlike the LM statistic, the CD statistic has a mean of exactly zero for fixed values of T and N, under a wide range of panel data models, including homogenous/heterogeneous dynamic models and nonstationary models.

3.3.2. Panel Unit Root Tests

If the issue of CSD is found in the panel, standard first-generation panel unit root tests will be invalid; thus, stationarity will be assessed by using second-generation tests, specifically the Pesaran (2007) Cross-Sectionally Augmented IPS (CIPS), and the PANIC (Bai & Ng, 2004) test. These tests are designed to account for cross-sectional dependence by modeling it as an unobserved common factor, thereby providing a more appropriate assessment of variable stationarity. The variables under consideration are expressed as:

$$y_{it} = \alpha_i + \beta_i' x_{it} + u_{it} \quad (9)$$

Where, y_{it} represents the dependent variable (FDI net inflows) for the country i at time t.

α_i denotes the time-invariant individual effect for each country i.

β_i' is a vector of coefficients for the independent variables.

x_{it} represents the vector of independent variables (regressors) for the country i at time t.

u_{it} is the error term for the country i at time t.

The Pesaran (2007) approach extends the standard IPS test by assuming that the data-generating process (DGP) includes both unit-specific (idiosyncratic) components and unobservable dynamic factors common across all units. To perform the test, the number of these common factors (which is assumed to be unknown) is first determined using methods like cross-correlation and estimated principal components. The unit root test is then applied to the remaining idiosyncratic component after the common component has been estimated and removed.

3.3.3. Econometric Model Selection

Based on the existence of the CSD issue and the panel series' characteristics, where $T > N$, a Panel EGLS (Cross-section SUR) model was selected for estimation. This methodology accounts for issues including CSD, endogeneity, and heteroskedasticity, providing more reliable and efficient parameter estimates.
The following is the generic form of the econometric specification:

$$FDI_{it} = \alpha_0 + \beta GI_{it} + \gamma Z_{it} + \epsilon_{it} \quad (10)$$

Where FDI_{it} represents the Inverse Hyperbolic Sine (IHS)-transformed dependent variable. GI_{it} stands for aggregated and disaggregated good governance indicators, while Z_{it} is a vector of IHS-transformed or log-transformed control variables.

In order to understand the effects of aggregated and disaggregated governance dimensions in attracting FDI and identify precise actionable policy implications, we evaluate eight different models for three different combinations of econometric specifications. Thus, the following is a final set of models for parameter estimation.

$$FDI_{it} = \alpha_i + \beta_1 CC_{it} + \beta_2 GE_{it} + \beta_3 PS_{it} + \beta_4 RL_{it} + \beta_5 RQ_{it} + \beta_6 VA_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M1)}$$
$$FDI_{it} = \alpha_i + \beta_1 CC_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M2)}$$
$$FDI_{it} = \alpha_i + \beta_1 GE_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M3)}$$
$$FDI_{it} = \alpha_i + \beta_1 PS_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M4)}$$
$$FDI_{it} = \alpha_i + \beta_1 RL_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M5)}$$
$$FDI_{it} = \alpha_i + \beta_1 RQ_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M6)}$$
$$FDI_{it} = \alpha_i + \beta_1 VA_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M7)}$$
$$FDI_{it} = \alpha_i + \beta_1 IQ_{it} + \gamma Z_{it} + \epsilon_{it} \quad \text{(M8)}$$

Where, all the six WGI are included in the full-model (M1), which estimates the disaggregated effect of each of the six individual indicators together with control variables in a single model. Meanwhile, six separate single models (M2-M7) are estimated for each indicator to isolate the effect of an individual indicator. Finally, a model (M8) is estimated where we include a composite index of institutional quality to assess the overall impact of WGI.

4. RESULTS

4.1. ASEAN's Governance Indicators (2002 and 2020)

The data compiled in Table 3 demonstrates the performance made in the six WGI on the scale from -2.5 (weakest governance) to +2.5 (strongest governance) by each member state of ASEAN in 2002 and 2020. While the individual countries in the region have experienced diverse performance, the overall regional average score has slightly improved from -0.27 to -0.08 during the study period.

Specifically, although Singapore's score in voice and accountability decreased slightly, the city-state's performance remained the highest among member countries in the bloc, followed by Brunei Darussalam and Malaysia; notably, Malaysia experienced a decline in its political stability score. Indonesia showed impressive improvements across all indicators, with the average score climbing from -0.87 to -0.11 during the study period.

Table 3. ASEAN's descriptive governance Dynamism: 2002 versus 2020.

Country	Year	VA	PS	GE	RQ	RL	CC	Country Average
Brunei Darussalam	2002	-0.83	1.16	0.85	1.05	0.48	0.29	0.50
	2020	-0.93	1.19	1.38	0.90	0.90	1.25	0.78
Indonesia	2002	-0.27	-1.58	-0.55	-0.74	-0.91	-1.14	-0.87
	2020	0.10	-0.46	0.32	0.22	-0.36	-0.45	-0.11
Cambodia	2002	-0.74	-0.72	-0.81	-0.20	-1.16	-0.99	-0.77
	2020	-1.36	-0.21	-0.45	-0.66	-0.96	-1.27	-0.82
Lao PDR	2002	-1.74	-0.10	-0.86	-1.20	-1.25	-0.67	-0.97
	2020	-1.79	0.69	-0.74	-0.84	-0.88	-1.08	-0.77
Myanmar	2002	-2.01	-1.41	-1.34	-2.06	-1.72	-1.30	-1.64
	2020	-0.94	-1.51	-1.01	-0.62	-1.19	-0.68	-0.99
Malaysia	2002	-0.49	0.54	0.92	0.52	0.39	0.25	0.35
	2020	-0.16	0.12	1.02	0.67	0.57	0.23	0.41
Philippines	2002	0.16	-0.86	-0.18	-0.16	-0.39	-0.54	-0.33
	2020	-0.11	-0.78	0.07	0.11	-0.65	-0.51	-0.31
Singapore	2002	0.06	1.25	1.79	1.89	1.38	2.26	1.44
	2020	-0.21	1.44	2.28	2.21	1.84	2.12	1.61
Thailand	2002	0.32	0.51	0.26	0.14	0.39	-0.34	0.21
	2020	-0.81	-0.58	0.20	0.06	0.11	-0.48	-0.25
Vietnam	2002	-1.45	0.35	-0.44	-0.77	-0.68	-0.56	-0.59
	2020	-1.38	-0.04	0.19	-0.24	-0.19	-0.37	-0.34
ASEAN Average	2002	-0.70	-0.09	-0.04	-0.15	-0.35	-0.27	-0.27
	2020	-0.76	-0.01	0.33	0.18	-0.08	-0.13	-0.08

Source: WGI of the World Bank (Online accessed on 20 November 2025).

However, Myanmar's weakening governance situation, specifically decreasing scores in both political stability, and government effectiveness has contributed to its lowest average score in the entire bloc, followed by Cambodia and Laos, both maintaining comparatively low overall average scores, with the former exhibiting volatility in scores, while the latter experiences decline in control of corruption but achieved notable improvements in political stability.

Reflecting a significant drop in scores in both Voice and Accountability (VA) and Political Stability (PS), the overall average score of Thailand deteriorated from 0.21 to -0.25 during the study period. Both the Philippines and Vietnam experienced volatility, with slight improvements in overall averages, as reflected by improved scores in some dimensions while decreases in the others.

4.2. ASEAN's FDI Net Inflows (% of GDP): 2002 – 2020

Although the region's overall average FDI net inflow (% of individual country's GDP) has risen during the period of study, which shows the bloc's rising position in order to attract the foreign investment (Figure 1), there is a substantial heterogeneity and volatility observed at the individual country-levels.

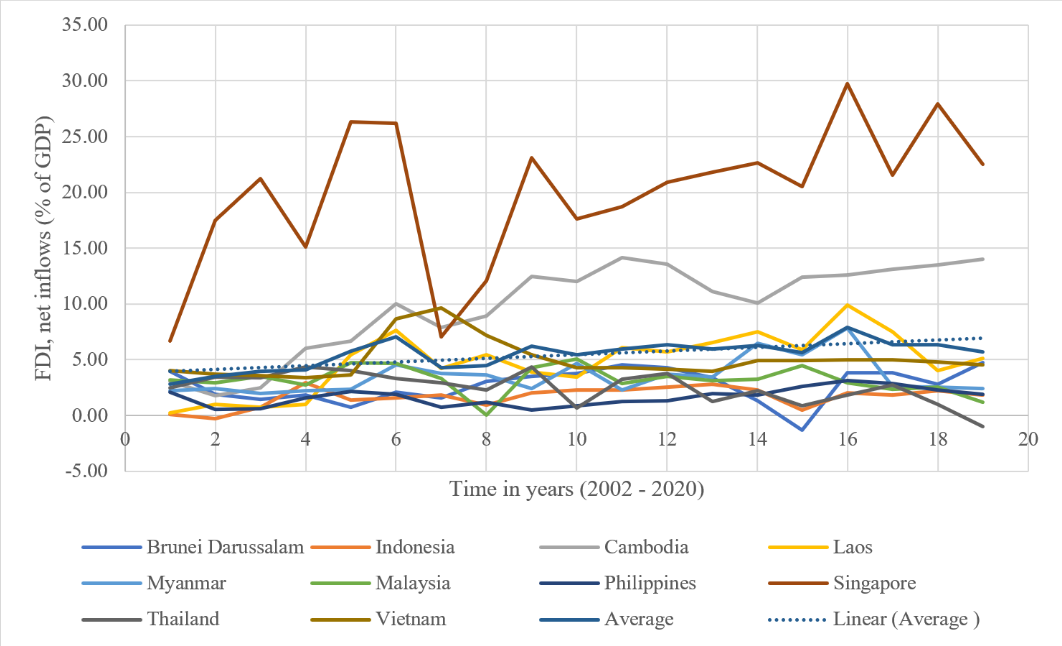

Figure 1. ASEAN's FDI net inflows (% of GDP): 2002 to 2020.

For example, Singapore, with much higher FDI inflows than the regional overall average, and despite highly volatile performance, the city-state continues to lead the bloc, consistently attracting a high proportion of FDI inflows and acting as a regional hub. Cambodia, Vietnam, and Laos, consistently performing near or sometimes surpassing the regional average, appear in the second tier of economies that sometimes crossed the 10% threshold. Specifically, Cambodia showed an impressive attractiveness trendline in the ASEAN bloc in the latter half of the study period.

Brunei Darussalam, Indonesia, Malaysia, Philippines, Myanmar, and Thailand were in the medium group in the region, largely attracting FDI net inflows below 5% of their GDP, and mainly maintaining their FDI net inflows below ASEAN's average.

4.3. Diagnostic Tests for Econometric Analysis

4.3.1. Cross-Sectional Dependency Tests

As mentioned in the methodology section, we used three diagnostic tests to test for cross-sectional dependence (CSD), which is a significant problem inherent in the panel dataset. The results of these three tests are presented in Table 4 below. All three tests consistently rejected the null hypothesis of no CSD for each variable studied at the 5% level of significance, confirming the need for an estimation methodology that can effectively handle this spatial correlation. This justifies our strategy of using Panel EGLS with SUR specification.

Table 4. Results from CSD tests.

Variables	Breusch-Pagan LM statistic	Pesaran CD statistic	Bias-corrected scaled LM statistic
Dependent variable			
FDI net inflow: IHS(FDI)	386.04 (0.00)	17.9 (0.00)	35.69 (0.00)
Independent variables			
Economic growth: IHS(ECG)	144.96 (0.00)	6.83 (0.00)	10.28 (0.00)
Exchange rate: Log(XCH)	295.39 (0.00)	4.06 (0.00)	26.14 (0.00)
Financial Development Index: Log(FD)	348.06 (0.00)	9.87 (0.00)	31.68 (0.00)
Human Development Index: Log(HDI)	731.21 (0.00)	26.8 (0.00)	72.05 (0.00)
Unemployment rate: Log(UEM)	196.02 (0.00)	2.87 (0.00)	15.66 (0.00)
Control of corruption index, estimate (CC)	417.70 (0.00)	2.38 (0.00)	17.95 (0.00)
Government effective index, estimate (GE)	207.29 (0.00)	7.64 (0.00)	16.85 (0.00)
Political stability & absence of violence index, estimate (PS)	201.72 (0.00)	0.83 (0.40)	16.27 (0.00)
Rule of law index, estimate (RL)	221.40 (0.00)	8.73 (0.00)	18.34 (0.00)
Regulatory quality index, estimate (RQ)	332.26 (0.00)	4.13 (0.00)	30.03 (0.00)
Voice and Accountability Index, estimate (VA)	177.09 (0.00)	2.66 (0.00)	13.67 (0.00)
Institutional quality composite index (IQ)	291.14 (0.00)	11.2 (0.00)	25.69 (0.00)

Note: Probability values are given in parentheses ().

4.3.2. Panel Unit Root Tests Results

As CSD has been confirmed in the preceding sub-section, which confirmed the series' temporal characteristics. Therefore, we used second-generation panel unit root tests, namely the CIPS test (Pesaran, 2007) and the PANIC test (Bai & Ng, 2004) as mentioned in the methodology section, and the results are depicted in Table 5, which clearly verify that the series satisfy the stationarity characteristics and validate the integrity of the analysis.

Table 5. Findings from panel unit roots tests.

Variables	Pesaran CIPS t-statistic Null: Unit root	Bai and Ng (2004)-PANIC Pooled statistic Null: No cointegration among all cross-sections
FDI net inflow: IHS(FDI)	-10.90 (< 0.01)	1.269 (0.20)
Economic growth: IHS(ECG)	-1.055 (≥ 0.10)	2.571 (0.01)
Exchange rate: Log(XCH)	-1.634 (≥ 0.10)	1.976 (0.48)
Financial Development Index: Log(FD)	0.000 (≥ 0.10)	2.695 (0.00)
Human Development Index: Log(HDI)	-2.587 (< 0.05)	3.861 (0.00)
Unemployment rate: Log(UEM)	1.130 (≥ 0.10)	-1.967 (0.04)
Control of corruption index (CC)	-1.616 (≥ 0.10)	-0.848 (0.39)
Government effective index (GE)	-2.11 (≥ 0.10)	-0.418 (0.67)
Political stability and absence of violence (PS)	1.48 ((≥ 0.10)	-1.379 (0.16)
Rule of law (RL)	-5.07 (< 0.01)	3.951 (0.00)
Regulatory quality (RQ)	-144.3 (< 0.01)	2.071 (0.03)
Voice and accountability (VA)	-4.287 (< 0.01)	-0.643 (0.51)
Institutional quality composite index (IQ)	-5.078 (< 0.01)	2.445 (0.01)

Source: The authors used EViews 12 version for calculating the above statistics, with automatic application of the Akaike Information Criterion (AIC) as the lag length selection.

4.4. Panel EGLS (Cross-Section SUR) Estimation Results

Empirical results on factors affecting FDI are presented in Table 6. The Panel EGLS (Cross-section SUR) framework solved the issues of CSD and endogeneity. Eight different model specifications (Models M1 to M8) considered IHS(FDI) as a dependent variable. A large F-statistic ($p < 0.0001$) was observed across all the models, which confirmed the joint significance of the regressors. Moreover, the weighted R-squared values ranged from 0.8656 to 0.9101, which confirmed both the goodness of fit and the combined explanatory power of the models, suggesting that more than 86% of the variations in FDI inflows are likely to be explained by these models. Although the values of Durbin-Watson statistics, ranged between 1.376 and 1.473, indicated the existence of mild positive serial correlation in the errors; however, our methodology is robust against CSD and addressing endogeneity issues and provided more reliable, bias-corrected results of governance indicators and it is believed that our results are more reliable than previous studies that overlooked CSD and endogeneity issues (Hananya & Handoyo, 2021; Siddica & Angkur, 2017).

Table 6. Panel EGLS (Cross-section SUR) Model for Dependent variable: IHS(FDI).

Independent variable	M1	M2	M3	M4	M5	M6	M7	M8
IHS(ECG)	0.548*** (0.0744)	0.687*** (0.0738)	0.766*** (0.0755)	0.905*** (0.0743)	0.749*** (0.0768)	0.791*** (0.0759)	0.778*** (0.0741)	0.744*** (0.0764)
Log(XCH)	0.385*** (0.03369)	0.355*** (0.0269)	0.331*** (0.0256)	0.306*** (0.0246)	0.332*** (0.0263)	0.315*** (0.0259)	0.293*** (0.0270)	0.326*** (0.0257)
Log(FD)	1.262*** (0.3464)	3.121*** (0.2928)	2.728*** (0.2872)	1.988*** (0.3045)	2.809*** (0.2805)	2.963*** (0.3247)	2.143*** (0.2993)	2.969*** (0.3058)
Log(UEM)	-1.46*** (0.1441)	-0.98*** (0.1142)	-0.95*** (0.1157)	-0.87*** (0.1231)	-0.90*** (0.1241)	-0.90*** (0.1177)	-1.18*** (0.1330)	-0.96*** (0.1170)
Log(HDI)	9.901*** (2.3560)	5.813*** (1.7920)	8.519*** (1.8184)	15.45*** (1.5647)	7.464*** (1.8978)	7.777*** (1.9472)	10.33*** (1.4202)	7.009*** (1.9082)
CC	0.605*** (0.1599)	0.411*** (0.0705)						
GE	0.277 (0.1857)		0.239*** (0.0850)					
PS	-0.224** (0.0910)			-0.28*** (0.0425)				
RL	0.651*** (0.2021)				0.327*** (0.0924)			
RQ	-1.02*** (0.1888)					0.221*** (0.0722)		
VA	0.881*** (0.1317)						0.612*** (0.0726)	
IQ								0.369*** (0.0904)
Constant	20.91*** (0.3720)	20.13*** (0.1792)	20.17*** (0.2254)	20.77*** (0.1409)	20.15*** (0.2101)	20.18*** (0.1946)	20.81*** (0.1328)	20.20*** (0.1823)
Obs.	190	190	190	190	190	190	190	190
Weighted Stat								
R-squared	0.8882	0.8902	0.8935	0.9101	0.8995	0.8914	0.8656	0.8913
Adjusted R^2	0.8813	0.8866	0.8900	0.9071	0.8962	0.8879	0.8612	0.8878
F-Statistic	128.63***	247.42***	255.95***	308.93***	273.18***	250.56***	196.44***	250.28***
Durban-Watson	1.3771	1.3995	1.379	1.473	1.3793	1.3946	1.3999	1.3760
Unweighted Stat								
R-squared	0.7042	0.6262	0.6154	0.6302	0.6154	0.6159	0.6543	0.6176
Durbin-Watson	0.6070	0.4644	0.4653	0.5297	0.4611	0.4704	0.5277	0.4632

Note: ***p < 0.01, **p < 0.05. The tests employed the AIC automatically as the lag length selection. Standard errors are reported in parentheses ( ).

4.4.1. Results on WGI and Discussions

The results presented in Table 6 for the six disaggregated Worldwide Governance Indicators (WGI) and their Composite Index, along with Control variables, reveal varied impacts on FDI net inflows depending on the model specifications.

Full-Model (M1), which included all six disaggregated WGI indicators together with five macroeconomic control variables, showed mixed or counter-institutional results. Notably, GE showed statistically insignificant findings, whereas coefficients for RQ and PS were statistically significant, both with unexpectedly negative signs. These results are often observed due to a high degree of correlation among the six WGI dimensions, caused by potential multicollinearity, which dilutes the effects of governance dimensions. While Full-Model (M1) highlights these challenges, the single-indicator models (M2-M7) provide clearer insights by testing each WGI dimension independently. In these models, all WGI indicators (CC, GE, PS, RL, RQ, and VA) are statistically significant. The mixed or counter-institutional findings at various significance levels in the full model (M1) become statistically significant when indicators are tested separately in single models, emphasizing the importance of models M2-M7. The specific results and discussions for each dimension are provided below.

Control of Corruption (CC): Across both models for control of corruption, coefficients (M1=0.605, M2=0.411) revealed a highly significant positive relationship at the 1% significance level. This result supports the widely-accepted "sand in the wheels" hypothesis within international economics and reiterates that corruption imposes an unofficial, non-systematic tax on transactions, creating an uncertain operating environment that deters foreign businesses from making long-term investments (Globerman & Shapiro, 2002; Shang-Jin Wei, 2000). This clearly indicates that international investors prefer an open, transparent, and foreseeable investment environment to safeguard their long-term capital stability (Habib & Zurawicki, 2002). Henceforth, the revealed robust and consistent positive association between CC and FDI net inflow underscores the crucial need for implementing strong and consistent anti-corruption measures, which are indispensable elements of any overhaul strategy aiming to boost investor confidence and attract robust FDI levels (Bhujabal et al., 2024; Saha et al., 2022).

Government Effectiveness (GE): Whereas the coefficient for GE was statistically insignificant in Model (M1), it became positive and statistically significant (coefficient = 0.239) at 1% significance level in Model (M3). An insignificant coefficient of GE in full-model while positive and significant in the isolated model, shows a marginal effect of this indicator on FDI inflows, which indicates that the effects of this indicator are likely to be smaller than the other WGI dimensions. While this is an inconsistent result, it is in line with contextual findings by Saha et al. (2022) and Hananya and Handoyo (2021), which imply that multinational companies operating in ASEAN perhaps prefer primary institutional aspects like CC over mere efficiency or sophisticated government administration.

Political Stability and Absence of Violence/Terrorism (PS): In contrast, PS revealed consistently opposite results, with a coefficient of -0.224 at the 5% significance level in Model (M1), and -0.28 at the 1% significance level in Model (M4). A surprisingly significant negative relationship between PS and FDI was found in this study, contradicting conventional expectations and not supporting the established notion that foreign companies prefer investing in politically stable countries. This result, while seemingly counterintuitive, aligns with some prior sub-regional evidence (Saha et al., 2022; Sakinah & Firmansyah, 2024) and likely, within ASEAN's heterogeneous landscape, investors may value stability through centralized or inflexible governance systems, leading to high policy certainty, over formal democratic rights embodied by the PS indicator (Bastiaens, 2016). This investor viewpoint suggests that a guarantee of consistent policy enforcement, even by less democratic regimes, is more important than signs of no peace or violence during the observed timeframe.

Rule of Law (RL): The coefficients for RL were also consistently positive and statistically significant in both models (M1 = 0.651, M5 = 0.327) at the 1% level of significance. A highly significant association between a strict rule of law and net inflows of FDI highlights the crucial need for a robust legal system, as this result aligns with established theoretical frameworks such as Dunning's OLI paradigm and the TCE perspective. By minimizing specific risks for foreign companies, a strict rule of law functions as a significant "location advantage" for international investors, providing guarantees for contract enforcement, protection of property rights, and access to reliable judicial resources (Dunning, 1988; Dunning & Lundan, 2008). Such reliable institutional structures are important for foreign investors, as their main focus is frequently to reduce transaction costs and mitigate uncertainties about random regulatory changes or unexpected expropriation. This conclusion is in line with recent findings of other regional study Bhujabal et al. (2024); however, it stands in contrast with findings found in less-developed economies, where a weaker judicial system seems to have little impact on important investment decisions (Hananya & Handoyo, 2021; Saha et al., 2022).

Regulatory Quality (RQ): The RQ also showed inconsistent results: its coefficient was statistically significant at 1% level and negative (-1.02) in Model (M1), while it was positive (0.221) and statistically significant at 1% significance level in Model (M6). Structurally inconsistent and complex relationships found between RQ and FDI are in harmony with the findings of Saha et al. (2022). Perhaps, a possible scenario of "regulatory overreach" was found due to a negative coefficient for RQ in Model (M1), which suggests that the cost of overly stringent and complex regulations–although being of high quality–costs outweigh the benefits drawn from clearly simple rules beyond an optimal level (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002). Conversely, when the indicator is isolated, a positive coefficient in Model M6 indicates that, to some extent, a moderately efficient regulatory environment could be beneficial.

Voice and Accountability (VA): The coefficients for VA were statistically significant and consistently positive in both models (M1=0.881, M7=0.612) at 1% level of significance. This enduring positive and statistically significant linkage between VA and FDI inflows suggests that non-resident investors prefer a transparent and participatory governance landscape. Foreign investors perceive such conditions as having less political risk and a more foreseeable policy scenario in the long run (Jensen, 2008). Theoretically, a political framework with high VA could offer foreign firms with mechanisms to proactively track policy development, which results in decreased probability of sudden negative regulatory changes – an outcome that is closely related to political risk premiums (Busse & Hefeker, 2007). Conversely, our results are in sharp contrast with some county-level research, which noted that the extensive political pluralism could initially lead to perceived policy instability in a lower-middle-income context (Saha et al., 2022).

Overall Institutional Quality Composite Index (IQ): The coefficient (0.369) for IQ from Model (M8) was positive and statistically significant at 1% level of significance, which unambiguously validated the overall conclusion: systematic improvements to a country's governance structures have a very strong positive effect on FDI. This finding is in line with those studies reported earlier (Bhujabal et al., 2024) and confirms that overall governance reform strategies are significant in attracting FDI efficiently. It simply suggests that although some dimensions of WGI resulted in mixed or insignificant or even negative outcomes, at the aggregate level, they produce an environment favorable to the inflows of investments in the ASEAN bloc.

4.4.2. Results on Control Variables

The results across all eight models on all five macroeconomic control variables show statistically significant and consistent impact on FDI net inflows, uniformly at 1% significance levels. These results align with prior established theoretical frameworks, which support the model's predictability and robustness, further suggesting the primarily consistent role of these variables for multinational companies for location advantage. In particular, specific details of each control variable's results and their discussions are given below.

The impact of economic growth was strong and consistently positive, with coefficients ranging from 0.548 to 0.905. These coefficients suggest that a 1% increase in ASEAN's economic growth rate is directly associated with an increase in the FDI inflows from 0.548% to 0.905% in the region. In an economic sense, these highly significant results offer clear support for the market-size seeking motive among multinational firms, suggesting that foreign investors are mainly attracted to expanding local and regional markets.

Similarly, the coefficients for the exchange rate ranged from 0.293 to 0.385, which demonstrates a significantly positive impact of the exchange rate on FDI net inflows. These results indicate that, in economic terms, an overall 10% depreciation of the region's currency (i.e., a rise in an overall LCU/US$ rate) is associated with an increase in the FDI net inflows in the range between 2.93% to 3.85% in the region. These modest but significantly positive results support the "location advantage" perspective, suggesting that the domestic currency devaluation attracts FDI and it serves to reduce the cost of local assets, whereas enhances the competitiveness of exports.

The coefficient for the financial development index was highly elastic, ranging between 1.262 and 3.121. This means that a 1% improvement in the financial development index (i.e., the combined score for financial depth, access, and efficiency) directly correlates with a significant increase in net FDI inflows, which ranged from a 1.262% to 3.121% rise. These results indicate that improvements in the financial sector are disproportionately larger, suggesting that foreign investors prefer a stable financial system because the existence of sophisticated financial market channels better facilitates capital intermediation and mitigates financing-related risks for international companies.

The impact of the human development index also exhibited a significant and consistently positive correlation with FDI net inflows, demonstrating the most extreme elasticities of the coefficients ranging between 5.813 and 15.45. This means that even a small 1% enhancement in the HDI is correlated with a huge rise in FDI net inflows, ranging from 5.813% to 15.45%, indicating the support for the notion of asset-seeking motivations of international companies, proposing that the availability of high-quality and healthy human resources is a crucial prerequisite as a "location-specific advantage" by foreign companies for attracting FDI inflows (Noorbakhsh, Paloni, & Youssef, 2001).

Conversely, the coefficients of unemployment rate consistently were found to be negative and statistically significant, ranging from -0.87 to -1.46. Economically, a 1% increase in unemployment is correlated with a decrease in FDI net inflows in the range between 0.87% and 1.46%. These findings propose that international companies prefer investment locations marked by stable labor markets compared to those offering inexpensive but unskilled or volatile workforce.

5. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

5.1. Conclusion

We used an annual panel dataset from 2002 to 2020 of the ten member states of ASEAN and employed a robust Panel EGLS (Cross-section SUR) methodology that appropriately corrected issues like CSD and endogeneity in this study. The results offer robust insights into determinants of FDI in the ASEAN bloc. At a disaggregated level, analysis showed that three governance indicators–voice and accountability, rule of law, and control of corruption–emerged as consistent and positive drivers of FDI inflows. These findings strongly support (Dunning & Lundan, 2008) theoretical framework, which posits that foreign companies prefer stable and transparent institutional mechanisms to mitigate risks related to policy changes, regulatory uncertainty, and corruption. Conversely, the impact of government effectiveness, political stability, and regulatory quality was less consistent, reflecting the deep political and economic heterogeneity within the ASEAN bloc.

More importantly, the aggregated composite index results validated a significantly positive relationship between the overall indicators of the Worldwide Governance framework and FDI attraction. This suggests that overall institutional improvements are a viable strategy to significantly enhance ASEAN's appeal to international investors. Additionally, results on all macroeconomic control variables were found consistent, supporting established theoretical frameworks.

5.2. Limitations

Given that we employed robust EGLS-SUR panel methodology to handle econometric issues, estimating eight models using aggregated and disaggregated WGI alongside five key macroeconomic control variables, the study's conclusions should be interpreted with care, in light of two limitations: Firstly, perception-based WGI data usage.

How comprehensive are the estimates of WGI? All six dimensions are compiled based on perceptions of survey participants and expert assessments, which are subjective and could introduce inherent measurement limitations, or quality may not be completely consistent with objective institutional reality, potentially affecting the precise estimation of effects. Secondly, the study's use of aggregated FDI net capital inflows as the dependent variable cannot differentiate greenfield investments from mergers & acquisitions (M&A). Since dissimilar WGI can influence these investment modes differently, focusing only on net capital inflows potentially overlooks significant, policy-relevant nuances in investor decision-making, which limits the specificity of this study's policy recommendations.

5.3. Future Research

The study offers three suggestions for future research: First, research could dissect the dependent variable into greenfield investment versus M&A, conduct comparative analysis, and offer micro-level insights for attracting specific types of investments. Second, certain research could explore objective, de jure institutional indicators to complement the perception-based WGI data. Lastly, given inconsistent or unexpectedly reverse effects of certain WGI (i.e., GE, RQ, or PS), future research may utilize non-linear modeling techniques to explore specific context-dependent governance-FDI nexus of these dimensions in the ASEAN region.

6. POLICY RECOMMENDATIONS

Our disaggregated analysis of WGI provides significant evidence for governance reforms aimed at attracting sustained FDI inflows into ASEAN. Based on the magnitudes of three coefficients, rule of law, control of corruption, and voice and accountability, and their strong statistical significance, this study offers four actionable priority recommendations: (i) Strengthen judicial systems by ensuring the reliability and independence of courts, and the timely enforcement of property rights and business contracts. (ii) Reduce bureaucratic grafts by establishing transparent e-government systems for public services and setting up independent anti-corruption mechanisms with full enforcement authority. (iii) Engage civil society and the private sector in drafting and reviewing new investment regulations and economic policies. (iv) Build political trust and stability by providing open access to government data and decision-making mechanisms.

Given that reforms on reliability and enforcement are priority areas, do not neglect administrative reforms related to government effectiveness, regulatory quality, and political stability. Although these dimensions showed inconsistent or weaker effects on FDI net inflow in this study, they are essential for state function. Policy attention to these drivers should follow success in the rule of law and control of corruption.

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REFERENCES

Aluko, B., Garri, M., Owalla, B., Kim, J.-Y., & Pickernell, D. (2024). Informal institutions' influence on FDI flows: A configurational fsQCA analysis of corruption as part of the MNEs' FDI motivation system. *International Business Review, 33*(6), 102327. https://doi.org/10.1016/j.ibusrev.2024.102327

ASEAN Secretariat & UNCTAD. (2024). *ASEAN investment report 2024: ASEAN economic community 2025 and foreign direct investment*. Retrieved from https://asean.org/book/asean-investment-report-2024-asean-economic-community-2025-and-foreign-direct-investment/

Bai, J., & Ng, S. (2004). A panic attack on unit roots and cointegration. *Econometrica, 72*(4), 1127-1177. https://doi.org/10.1111/j.1468-0262.2004.00528.x

Baltagi, B. H., & Pesaran, H. M. (2007). Heterogeneity and cross section dependence in panel data models: Theory and applications introduction. *Journal of Applied Economics, 22*(2), 229-232. https://doi.org/10.1002/jae.955

Barassi, M. R., & Zhou, Y. (2012). The effect of corruption on FDI: A parametric and non-parametric analysis. *European Journal of Political Economy, 28*(3), 302-312. https://doi.org/10.1016/j.ejpoleco.2012.01.001

Bastiaens, I. (2016). The politics of foreign direct investment in authoritarian regimes. *International Interactions, 42*(1), 140-171. https://doi.org/10.1080/03050629.2015.1065699

Bhujabal, P., Sethi, N., & Padhan, P. C. (2024). Effect of institutional quality on FDI inflows in South Asian and Southeast Asian countries. *Heliyon, 10*(5), e27060. https://doi.org/10.1016/j.heliyon.2024.e27060

Breusch, T. S., & Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies, 47*(1), 239-253. https://doi.org/10.2307/2297111

Buracom, P. (2014). ASEAN economic performance, institutional effectiveness, and foreign direct investment. *Asian Affairs: An American Review, 41*(3), 108-126. https://doi.org/10.1080/00927678.2014.936801

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European Journal of Political Economy, 23*(2), 397-415. https://doi.org/10.1016/j.ejpoleco.2006.02.003

Coe, D. T., & Helpman, E. (1995). International r&d spillovers. *European Economic Review, 39*(5), 859-887. https://doi.org/10.1016/0014-2921(94)00100-E

Daud, E. I., Mohamoud, M. A., Mohamed, J., & Abdi, A. A. (2025). Exploring the impact of foreign direct investment on poverty reduction in Latin America: Evidence from panel quantile regression model. *Cogent Economics & Finance, 13*(1), 2468886. https://doi.org/10.1080/23322039.2025.2468886

Dauti, B. (2015). Determinants of foreign direct investment in transition economies, with special reference to Macedonia. Evidence from gravity model. *The South East European Journal of Economics and Business, 10*(2), 7-28. https://doi.org/10.1515/jeb-2015-0007

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *The Quarterly Journal of Economics, 117*(1), 1-37. https://doi.org/10.1162/003355302753399436

Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies, 19*, 1–31. https://doi.org/10.1057/palgrave.jibs.8490372

Dunning, J. H., & Lundan, S. M. (2008). *Multinational enterprises and the global economy* (2nd ed.). Cheltenham, UK: Edward Elgar Publishing.

Egger, P., & Winner, H. (2005). Evidence on corruption as an incentive for foreign direct investment. *European Journal of Political Economy, 21*(4), 932-952. https://doi.org/10.1016/j.ejpoleco.2005.01.002

Gastanaga, V. M., Nugent, J. B., & Pashamova, B. (1998). Host country reforms and FDI inflows: How much difference do they make? *World Development, 26*(7), 1299-1314. https://doi.org/10.1016/S0305-750X(98)00049-7

Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows: The role of governance infrastructure. *World Development, 30*(11), 1899-1919. https://doi.org/10.1016/S0305-750X(02)00110-9

Gökçeli, E. (2023). Institutional quality and foreign direct investment: Evidence from OECD countries. *Ekonomický Časopis, 71*(03), 222-257. https://doi.org/10.31577/ekoncas.2023.03.03

GuechHeang, L., & Moolio, P. (2013). The relationship between gross domestic product and foreign direct investment: The case of cambodia. *KASBIT Business Journal, 6*(1), 87-99.

Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. *Journal of International Business Studies, 33*(2), 291-307. https://doi.org/10.1057/palgrave.jibs.8491017

Hananya, K. A., & Handoyo, R. D. (2021). The influence of institutional quality towards foreign direct investment (FDI) inflows in ASEAN's developing countries. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, *22*(2), 161–180. https://doi.org/10.23917/jep.v22i2.13752

International Labour Organization. (2024). *ILO modelled estimates and projections database (ILOEST). ILOSTAT*. Retrieved from https://ilostat.ilo.org/data/

International Monetary Fund. (2016). *Financial development in low-income countries.* Staff Discussion Note No. SDN/16/05. Washington, DC: International Monetary Fund.

Jensen, N. (2008). Political risk, democratic institutions, and foreign direct investment. *The Journal of Politics*, *70*(4), 1040-1052. https://doi.org/10.1017/S0022381608081048

Kapás, J., & Czeglédi, P. (2020). The impact of culture on FDI disentangled: Separating the "level" and the "distance" effects. *Economia Politica*, *37*(1), 223-250. https://doi.org/10.1007/s40888-020-00175-8

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). *The worldwide governance indicators: Methodology and analytical issues.* Policy Research Working Paper No. 5430. Washington, DC: World Bank.

Kaufmann, D., Kraay, A., & Zoido-Lobatón, P. (1999). *Governance matters.* Policy Research Working Paper No. 2196. Washington, DC: World Bank.

Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, *19*(3), 411-432. https://doi.org/10.1057/palgrave.jibs.8490394

Kurul, Z. (2017). Nonlinear relationship between institutional factors and FDI flows: Dynamic panel threshold analysis. *International Review of Economics & Finance*, *48*, 148-160. https://doi.org/10.1016/j.iref.2016.12.002

Masron, T. A., & Naseem, N. A. M. (2017). Institutional quality and foreign direct investment in ASEAN. *Institutions and Economies*, *9*(4), 5-30.

Mercer-Blackman, V., Xiang, W., & Khan, F. (2021). *Understanding FDI spillovers in the presence of GVCs.* Policy Research Working Paper No. 9645. Washington, DC: World Bank.

Noorbakhsh, F., Paloni, A., & Youssef, A. (2001). Human capital and FDI inflows to developing countries: New empirical evidence. *World Development*, *29*(9), 1593-1610. https://doi.org/10.1016/S0305-750X(01)00054-7

North, D. C. (1990). *Institutions, institutional change and economic performance.* Cambridge, UK: Cambridge University Press.

Nupehewa, S., Liyanage, S., Polkotuwa, D., Thiyagarajah, M., Jayathilaka, R., & Lokeshwara, A. (2022). More than just investment: Causality analysis between foreign direct investment and economic growth. *PLoS One*, *17*(11), e0276621. https://doi.org/10.1371/journal.pone.0276621

Pesaran, M. H. (2004). *General diagnostic tests for cross section dependence in panels.* IZA Discussion Paper No. 1240. Bonn, Germany: Institute for the Study of Labor (IZA).

Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, *22*(2), 265-312. https://doi.org/10.1002/jae.951

Pesaran, M. H., & Yamagata, T. (2008). Testing slope homogeneity in large panels. *Journal of Econometrics*, *142*(1), 50-93. https://doi.org/10.1016/j.jeconom.2007.05.010

Phommouny, P., Shuquan, H., Xayphachanh, N., & Rakotondrazaka, T. H. (2024). Determinants of foreign direct investment in ASEAN: Evidence from ASEAN 4 countries (Cambodia, Laos, Myanmar, and Vietnam). *Saudi Journal of Economics and Finance*, *8*(7), 230-236. https://doi.org/10.36348/sjef.2024.v08i07.002

Ragoussis, A., Rigo, D., & Santoni, G. (2024). *The rising concentration of foreign direct investment.* Washington, DC: International Finance Corporation (World Bank Group).

Saha, S., Sadekin, M. N., & Saha, S. K. (2022). Effects of institutional quality on foreign direct investment inflow in lower-middle income countries. *Heliyon*, *8*(10), e10828. https://doi.org/10.1016/j.heliyon.2022.e10828

Sakinah, R. D., & Firmansyah, F. (2024). Governance and foreign direct investment: Evidence in ASEAN. *Jurnal Ilmiah Manajemen, Ekonomi dan Akuntansi (MEA)*, *8*(3), 2059-2074.

Saurav, A., & Kuo, R. C. (2020). *The voice of foreign direct investment: Foreign investor policy preferences and experiences in developing countries*. Policy Research Working Paper No. 9425. Washington, DC: World Bank.

Siddica, A., & Angkur, M. T. N. (2017). Does institution affect the inflow of FDI? A panel data analysis of developed and developing countries. *International Journal of Economics and Finance*, *9*(7), 214-221. https://doi.org/10.5539/ijef.v9n7p214

United Nations Development Programme. (2019). *Human development index. Human Development Report*. Retrieved from http://hdr.undp.org/en/composite/HDI

Vogiatzoglou, K. (2016). Ease of doing business and FDI inflows in ASEAN. *Journal of Southeast Asian Economies*, *33*(3), 343-363.

Wang, X., Xu, Z., Qin, Y., & Skare, M. (2022). Foreign direct investment and economic growth: A dynamic study of measurement approaches and results. *Economic Research-Ekonomska Istraživanja*, *35*(1), 1011-1034. https://doi.org/10.1080/1331677X.2021.1952090

Wei, S.-J. (2000). How taxing is corruption on international investors? *Review of Economics and Statistics*, *82*(1), 1-11. https://doi.org/10.1162/003465300558533

Wei, S.-J. (2000). Local corruption and global capital flows. *Brookings Papers on Economic Activity*, *2000*(2), 303-354. https://doi.org/10.1353/eca.2000.0021

Williamson, O. E. (1979). Transaction-cost economics: The governance of contractual relations. *The Journal of Law and Economics*, *22*(2), 233-261. https://doi.org/10.1086/466942