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Bilateral investment treaties and foreign direct investment inflows: Evidence from an emerging economy

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Abstract: This study investigates the impact of Bilateral Investment Treaties (BITs) on Foreign Direct Investment (FDI) inflows to Vietnam using a panel dataset of 36 partner countries from 2007 to 2019. Employing the Gravity Model, the analysis incorporates key determinants of FDI, including economic size, geographical distance, trade openness, macroeconomic stability, infrastructure, and institutional quality. The findings confirm that BITs play a significant role in attracting FDI, as they reduce investment risks and enhance investor confidence. The results also reveal that larger economies attract more FDI, while greater geographical distance deters investment. ASEAN membership and trade openness positively influence FDI, whereas inflation volatility and exchange rate fluctuations deter investment. Additionally, strong digital infrastructure and telecommunications contribute to greater FDI attractiveness. Among institutional factors, government effectiveness, the rule of law, and corruption control emerge as critical drivers of investor confidence. The study concludes that BITs are a useful tool to attract FDI, but their effectiveness is contingent upon complementary reforms and sound economic fundamentals. These findings offer practical implications for policymakers by emphasizing the importance of not only signing BITs but also improving domestic institutions and infrastructure to fully realize the benefits of international investment agreements.

Keywords: *Bilateral investment treaties, Foreign direct investment, Gravity model, Vietnam.*

1. Introduction

Globalization and economic integration have significantly reshaped international trade and investment flows, with Foreign Direct Investment (FDI) playing a crucial role in economic development, technology transfer, and industrialization [1]. For many countries, particularly developing economies, attracting FDI is a key policy objective to accelerate growth, create employment, and enhance global competitiveness. In pursuit of these goals, governments have increasingly turned to Bilateral Investment Treaties (BITs) as a means to provide a stable legal framework, mitigate investment risks, and bolster investor confidence. These treaties typically include provisions that protect investors from expropriation, ensure fair and equitable treatment, and establish dispute resolution mechanisms, all aimed at making host countries more attractive to foreign capital. Despite the widespread adoption of BITs, their actual effectiveness in driving FDI inflows remains a contentious issue in economic literature. While some studies argue that BITs serve as credible commitment mechanisms that enhance investor trust and facilitate investment, others contend that their impact is marginal compared to broader economic and institutional factors such as market size, infrastructure, governance quality, and macroeconomic stability. The mixed empirical evidence suggests that the success of BITs in attracting FDI may be contingent on complementary factors that reinforce their credibility and enforceability.

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Vietnam presents an interesting case for examining this relationship. As part of its broader strategy to deepen economic integration, Vietnam has been proactive in signing BITs, with 67 agreements concluded as of 2019, 49 of which are currently in force [2]. Over the past two decades, the country has emerged as a major investment destination in Southeast Asia, benefiting from strong FDI inflows, export-led industrialization, and participation in global value chains. Between 2016 and 2019, Vietnam's GDP grew at an average annual rate of 6.8%, making it one of the fastest-growing economies globally. Even amid the COVID-19 pandemic, Vietnam demonstrated resilience, recording a GDP growth rate of 2.91% in 2020. Given the country's increasing reliance on BITs as a policy tool to attract foreign investment, it is critical to assess whether these treaties have played a significant role in driving FDI inflows, or whether other economic and institutional factors have been more influential.

The relationship between BITs and FDI has been widely debated in economic literature, with two competing theoretical perspectives offering contrasting views on their impact. The first perspective, known as the BITs-led FDI promotion hypothesis, argues that BITs enhance investor confidence, reduce risks, and create a more predictable investment environment, leading to increased FDI inflows. BITs provide legal protections that safeguard foreign investors from expropriation, discrimination, and arbitrary policy changes, thereby lowering investment risks [3]. Additionally, BITs function as a commitment mechanism, signaling that the host country is dedicated to upholding investment-friendly policies, even in cases of political or economic instability [4]. Empirical studies supporting this view suggest that developing countries that sign BITs attract significantly higher FDI inflows compared to those that do not [5, 6]. In contrast, the BITs skepticism hypothesis contends that BITs alone do not significantly influence FDI inflows, as investors prioritize broader economic and institutional factors over treaty protections. Critics argue that while BITs provide legal assurances, they do not directly improve fundamental investment determinants such as market size, labor costs, infrastructure, and macroeconomic stability [7]. Furthermore, BIT effectiveness depends on the strength of domestic institutions and governance quality—if a country lacks strong legal enforcement mechanisms, investors may remain skeptical about the actual protections offered by BITs [8]. Some studies suggest that countries with already strong economic fundamentals are more likely to sign BITs, leading to selection bias in measuring their impact on FDI [9].

Given these conflicting perspectives, recent research suggests that the effectiveness of BITs in attracting FDI is conditional on complementary factors. BITs tend to be more effective in countries with strong legal frameworks, low corruption, and efficient regulatory institutions, as these conditions enhance the credibility of investment protections [10]. Additionally, trade liberalization, infrastructure development, and macroeconomic stability further amplify the positive effects of BITs on FDI inflows [3].

Despite Vietnam's increasing reliance on BITs to attract FDI, empirical research on their actual impact remains inconclusive. While some studies find a positive correlation between BITs and FDI, others suggest that BITs have little to no effect unless accompanied by institutional and economic reforms. This study aims to fill this research gap by providing a quantitative analysis of the impact of BITs on FDI inflows into Vietnam.

Using the Gravity Model, a well-established framework for analyzing trade and investment flows , this study employs panel data from 2007 to 2019 to examine the extent to which BITs influence FDI inflows, alongside other key factors such as economic size, geographical distance, macroeconomic stability, institutional quality, and infrastructure. A particular emphasis is placed on the role of governance indicators—such as government effectiveness, control of corruption, and rule of law—in shaping investment attractiveness. As global investors increasingly prioritize governance quality and regulatory stability, understanding the interaction between institutional factors and BITs is crucial for policymakers seeking to optimize their investment policies.

The findings of this study have important implications for policymakers in Vietnam and other emerging economies aiming to leverage BITs as a tool for FDI attraction. While BITs provide a legal

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foundation for investment, their effectiveness depends on broader structural reforms in governance, infrastructure, and economic policy. This research contributes to both academic and policy discussions by offering empirical insights into the relationship between BITs and FDI, identifying key challenges, and proposing strategic recommendations to enhance Vietnam's investment climate.

The remainder of this paper is structured as follows: Section 2 reviews the relevant literature on BITs and FDI determinants; Section 3 outlines the research methodology and data sources; Section 4 presents the empirical findings; and Section 5 discusses policy implications and concludes the study.

2. Literature Review

2.1. Determinants of Foreign Direct Investment

Foreign direct investment is influenced by a wide range of economic, institutional, and structural factors that shape investment decisions across countries. Extensive empirical research has demonstrated that FDI flows are primarily determined by economic size, geographical distance, economic openness, macroeconomic stability, infrastructure quality, and institutional frameworks. These factors interact to influence the attractiveness of a host country by affecting market potential, investment risks, and operational efficiency.

Economic size is one of the most significant determinants of FDI inflows, as larger economies offer greater market potential, stronger consumer demand, and enhanced business opportunities [11]. Theoretically, the market size hypothesis suggests that foreign investors are drawn to economies with higher gross domestic product (GDP) and strong economic growth, as these indicators signal long-term profitability and investment stability [12, 13]. Empirical studies confirm that countries with high and sustained GDP growth rates attract market-seeking FDI, as expanding economies provide a larger customer base, increased purchasing power, and improved financial market stability [14, 15]. Furthermore, stable GDP growth enhances investor confidence by reducing the risks associated with economic downturns and demand fluctuations [16].

Geographical factors, particularly distance and proximity to key trade partners, significantly influence FDI decisions by affecting transportation costs, logistical efficiency, and market accessibility. According to the gravity model of trade and investment, geographical distance negatively impacts FDI by increasing transaction costs, communication barriers, and regulatory complexities [12, 17]. Investors tend to favor destinations that are geographically closer to their home country, as shorter distances reduce operational expenses and facilitate market entry [18]. However, proximity can also enhance FDI flows by enabling regional economic integration, trade facilitation, and cross-border investment synergies [19].

Economic openness plays a vital role in attracting FDI, as liberal trade policies, reduced investment restrictions, and free trade agreements facilitate cross-border capital flows, market access, and business expansion [12, 20]. Open economies tend to receive higher FDI inflows due to their transparent regulatory environments, ease of doing business, and integration into global value chains [21]. Empirical evidence shows that trade openness reduces investment barriers and increases investor confidence by promoting predictable and stable trade policies [14].

Stable macroeconomic conditions are crucial for sustaining investor confidence and ensuring long-term FDI growth. Key macroeconomic factors such as inflation, exchange rate stability, and interest rates affect investment decisions by influencing the cost of doing business, profitability, and financial risks [12, 22].

High inflation negatively impacts FDI inflows by eroding purchasing power, increasing production costs, and creating economic uncertainty [10]. Countries with stable and low inflation rates tend to attract more investment, as they provide a predictable pricing environment and minimize financial risks [20]. Similarly, exchange rate fluctuations introduce currency risks for foreign investors, affecting the cost of investment, profit repatriation, and international competitiveness [23]. Investors prefer destinations with stable exchange rates, as they reduce the risks associated with currency devaluation

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and financial volatility [24]. Vietnam has implemented exchange rate stabilization policies to mitigate these risks and enhance investor confidence.

Infrastructure quality is a fundamental determinant of FDI, as well-developed infrastructure reduces logistical costs, enhances operational efficiency, and improves business competitiveness [25]. Strong infrastructure facilitates investment by ensuring efficient transportation networks, reliable digital connectivity, and modern telecommunications [26].

Telecommunications infrastructure, particularly mobile network penetration and internet access, plays a crucial role in attracting technology-intensive FDI. Countries with advanced digital infrastructure are more likely to attract foreign firms engaged in e-commerce, information technology, and digital services [13]. Vietnam has made significant investments in digital connectivity, expanding broadband coverage and modernizing its telecommunications sector, which has further enhanced its appeal to foreign investors.

Institutional quality is a critical factor influencing FDI, as it affects business regulations, legal protections, and governance effectiveness. Investors seek destinations with strong legal frameworks, political stability, and transparent regulatory systems that reduce business risks and ensure fair market competition [27, 28].

Political stability is essential for maintaining investor confidence. Unstable political environments deter FDI by increasing risks related to policy uncertainty, government intervention, and regulatory unpredictability [10]. Similarly, government effectiveness strengthens FDI inflows by ensuring efficient administrative procedures, contract enforcement, and investor protections [20]. Rule of law and control of corruption also play significant roles in shaping investor decisions. Countries with strong anti-corruption measures and well-functioning judicial systems tend to attract more investment, as they provide a fair and predictable business environment [28].

2.2. The Interaction between Bilateral Investment Treaties and Foreign Direct Investment

Bilateral Investment Treaties (BITs) have become a fundamental policy tool for host countries seeking to attract FDI. These treaties establish legally binding commitments between two countries, aiming to enhance investor confidence by reducing risks associated with political instability, regulatory uncertainty, and expropriation [3, 29]. Theoretically, BITs facilitate FDI by providing guarantees such as fair and equitable treatment, national treatment, and investor-state dispute settlement mechanisms, thereby ensuring a stable and predictable investment environment [30]. However, the actual impact of BITs on FDI remains contested, with empirical studies producing mixed findings regarding their effectiveness in attracting investment [7, 10].

Several empirical studies support the argument that BITs play a crucial role in attracting FDI. Neumayer and Spess [3] found that developing countries signing BITs experienced a significant increase in FDI inflows, particularly when agreements were signed with economically advanced countries. Similarly, Egger and Pfaffermayr [30] provided evidence that BITs function as credible commitment devices, reassuring foreign investors that their investments will be protected from arbitrary government intervention. This credibility is particularly important for host countries with weak institutional frameworks or unstable political environments, where BITs act as a substitute for domestic legal protections [29].

Additionally, BITs contribute to market liberalization and economic openness, both of which are positively correlated with FDI attraction [20]. By imposing international legal standards, BITs incentivize host governments to implement investment-friendly policies, reduce bureaucratic inefficiencies, and strengthen contract enforcement mechanisms, thereby making them more competitive in the global investment landscape [4]. Vietnam, for instance, has actively pursued an extensive network of BITs, with 67 agreements signed as of 2019, reflecting its commitment to creating a secure and transparent investment environment [1].

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One of the indirect benefits of BITs is their potential to drive institutional reforms and policy enhancements in host countries. BITs often require signatory states to align their legal and regulatory frameworks with international best practices, leading to improvements in governance quality and investment climate [31]. Empirical studies suggest that countries with a high number of BITs tend to experience regulatory improvements, including enhanced contract enforcement, dispute resolution mechanisms, and reduced corruption [3]. Vietnam's engagement in BITs has coincided with significant regulatory reforms, particularly in sectors such as foreign ownership liberalization, corporate governance, and tax incentives for foreign investors [32]. This suggests that while BITs may not directly increase FDI, they contribute to long-term structural improvements that make host countries more attractive to investors.

Considering these complexities, we put forward the following hypothesis:

H_1: The presence of Bilateral Investment Treaties has a positive effect on FDI inflows into Vietnam.

Despite the theoretical benefits of BITs, some scholars argue that these agreements alone are insufficient to guarantee increased FDI inflows [7, 33]. A key concern is that BITs are only as effective as the legal and institutional frameworks that enforce them. In countries with weak judicial systems, high levels of corruption, or inconsistent policy implementation, foreign investors may remain skeptical about the actual enforcement of BIT provisions, reducing the treaties' effectiveness [34].

Another limitation is that BITs may produce diminishing returns when a country signs multiple agreements. Tobin and Rose-Ackerman [29] argued that once a host country has signed a critical mass of BITs, additional agreements contribute little to no additional FDI inflows, suggesting that economic fundamentals such as macroeconomic stability, infrastructure, and governance quality are more influential determinants of investment. This is evident in Vietnam's case, where despite signing a large number of BITs, FDI inflows have been more strongly correlated with economic liberalization policies and participation in regional trade agreements such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the EU-Vietnam Free Trade Agreement (EVFTA) [35].

Moreover, BITs do not always protect host countries from investor-state disputes. Several developing countries have faced investor claims under ISDS (Investor-State Dispute Settlement) provisions, leading to costly arbitration proceedings [7]. This has raised concerns that BITs might create legal liabilities for host countries without necessarily delivering proportional FDI benefits, particularly when investment treaties favor foreign investors over domestic policy autonomy [34].

3. Methodology

3.1. Research Model

This study examines the impact of Bilateral Investment Treaties on Foreign Direct Investment inflows to Vietnam using the Gravity Model, a widely recognized empirical framework derived from Newton's universal law of gravitation. The model has been extensively applied in international economics to analyze trade and investment flows, positing that the volume of trade or investment between two economies is directly proportional to their economic sizes and inversely proportional to the geographical distance between them. Over the years, scholars such as Lin and Saggi [36]; Anderson [37]; Bergstrand [38] and Deardorff [39] have refined and extended the model to incorporate various economic, institutional, and policy-related factors influencing cross-border trade and investment. The empirical model is formulated as follows:

$$LnFDI_{ivnt}=\alpha DummyBITs + \beta 1LnGDP_{it} + \beta 2LnGDP_{vnt} + \beta 3Lndist_{ivn} + \beta 4Ctg_{ivn} + \gamma jW_{ivn} + \epsilon_{ivn}$$

where i denotes partner country, vn indicates Vietnam, and t represents year; ε_{ivnt} is error term capturing unobserved factors.

$LnFDI_{ivnt}$ is the dependent variable, measured by the natural logarithm of the value of FDI inflows from partner country i to Vietnam in year t. The key independent variable is $DummyBITs$, which takes

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a value of 1 if a BIT between Vietnam and partner country i is in force in year t, and 0 otherwise. Economic size is measured using the natural logarithm of GDP ($LnGDP_{it}/LnGDP_{vnt}$) of partner country I and Vietnam, capturing the influence of market potential on investment decisions. Geographical distance ($LnDist_{ivn}$) between Vietnam and partner country i is included to account for the cost of investment transactions, with greater distances generally implying higher investment costs. A contiguity variable (CTG_{ivn}) is also introduced, taking a value of 1 if Vietnam shares a border with partner country i and 0 otherwise, as geographical proximity often facilitates trade and investment flows.

To control for additional factors influencing FDI, several economic, institutional, and policy-related variables are included (W_{ivn}). Trade openness, represented by (OPN_{it}/OPN_{vnt}), measures the degree of economic openness for both Vietnam and its partner country in year t. The model also accounts for regional economic integration by including ASE_i, a dummy variable that takes a value of 1 if the partner country is a member of ASEAN and 0 otherwise. Macroeconomic stability is captured through INF_{it} and INF_{vnt}, which denote the inflation rates of partner country i and Vietnam in year t, along with DIF_{ivn} which measures the inflation rate differential between the two countries to assess how disparities in price stability affect investment decisions. Exchange rate fluctuations are accounted for using EXR_{it} and EXR_{vnt}, which represent the natural logarithm of the real exchange rate of each country's currency against the US dollar in year t.

Infrastructure development is another key determinant of investment attractiveness. This study includes CEL_{it} and CEL_{vnt}, which measure the number of mobile network subscribers (per 100 people) in partner country *i* and Vietnam, respectively. Additionally, INT_{it} and INT_{vnt} capture the percentage of Internet users in each country, reflecting digital connectivity and technological readiness. Institutional quality is assessed using governance-related indicators, including the Government Effectiveness Index (GEI_{it} and GEI_{vnt}), the Control of Corruption Index (CCI_{it} and CCI_{vnt}), and the Political Stability and Absence of Violence Index (PVI_{it} and PVI_{vnt}). These indicators reflect the efficiency of public administration, the extent of corruption, and the overall stability of the political environment, all of which are critical in shaping investor confidence. Furthermore, RLI_{it} and RLI_{vnt} measure the rule of law in each country, representing the strength of legal institutions and the protection of property rights, which are crucial for fostering a secure investment climate.

The primary advantage of employing the Gravity Model in this study lies in its ability to systematically capture the determinants of FDI flows while controlling for multiple factors, including policy frameworks of BITs, economic size and institutional quality. By integrating these elements, the model provides a robust analytical tool for assessing the role of BITs in attracting foreign investment. Given its flexibility, the model can also incorporate additional control variables, such as macroeconomic stability, infrastructure development, and trade openness, which are essential in understanding FDI dynamics in a developing economy like Vietnam. To ensure the robustness of the empirical analysis, this study employs the Hausman test and the Breusch-Pagan Lagrange Multiplier test to determine the most suitable estimation technique for panel data. The Hausman test is used to assess whether the Fixed Effects (FE) or Random Effects (RE) model provides a more consistent estimation, while the Breusch-Pagan Lagrange Multiplier test evaluates the appropriateness of using panel data over a pooled ordinary least squares (OLS) approach. The results indicate that the Random Effects (RE) model is the most appropriate specification for the dataset, as it allows for variations across countries while maintaining efficiency in parameter estimation (Appendix 2 and 3).

3.2. Data

This study employs panel data, which provides a two-dimensional structure encompassing both spatial and temporal dimensions. Panel data offers significant advantages over cross-sectional or time-

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series data, as it captures variations across multiple entities over time, thereby improving the reliability of parameter estimates. The inclusion of both cross-sectional and longitudinal components enhances the precision of statistical analysis by reducing multicollinearity and increasing the robustness of the estimated relationships. Given these benefits, panel data has been widely utilized in empirical research on international trade and investment, particularly within the framework of the Gravity Model [40].

The dataset utilized in this study spans the period from 2007 to 2019 and includes information on FDI inflows into Vietnam from 36 partner countries that have signed BITs with Vietnam. These countries, listed in Appendix 1, collectively account for over 85% of total foreign investment in Vietnam in recent decades, according to the Ministry of Planning and Investment of Vietnam. By covering a diverse range of economies with varying levels of economic development, institutional quality, and geographic proximity to Vietnam, the dataset allows for a comprehensive analysis of the role of BITs in shaping FDI inflows

The data used in this study is sourced from multiple reputable institutions, ensuring the credibility and accuracy of the dataset. Key data sources include the General Statistics Office of Vietnam (GSO) for domestic economic indicators, the World Bank (WB) for global economic and governance metrics, the United Nations Conference on Trade and Development (UNCTAD) for FDI data, the Centre d'Études Prospectives et d'Informations Internationales (CEPII) for geographical distance measures, and the World Governance Indicators (WGI) for institutional quality measures. By integrating these diverse data sources, the study provides a comprehensive and empirical assessment of the impact of BITs on FDI inflows into Vietnam.

Table 1.
Statistical summary.

Variable	Count	Mean	Sd	Min.	Max.
$Lnfdi_{ivnt}$	468	-3.1389	2.9657	-11.5129	2.7155
$Dummybits$	468	0.9295	0.2563	0	1
$Lngdp_{it}$	468	5.9821	1.6358	1.4405	9.5710
$Lngdp_{vnt}$	468	5.0584	0.3638	4.3492	5.5680
$Lndist\_ivn$	468	8.5383	0.8807	5.9713	9.2842
$Lnexchangerate_{it}$	468	1.8200	2.2753	-0.1205	9.5637
$Lnexchangerate_{vnt}$	468	9.9188	0.1229	9.6855	10.0529
$Contig_{ivn}$	468	0.0833	0.2767	0	1
$Open_{vnt}$	468	171.7299	22.5160	134.7063	210.4002
$Open_{it}$	468	103.8122	62.9405	24.4909	437.3267
$Inflation_{it}$	468	2.8967	3.3154	-1.9311	29.5066
$Inflation_{vnt}$	468	7.6146	6.2828	0.6312	23.1155
$Difinflation_{ivn}$	468	233.906	134.5686	1	466
$Asean_{i}$	468	0.1880	0.3912	0	1
$Cellular_{it}$	468	118.5962	28.1708	18.88	212.64
$Cellular_{vnt}$	468	125.2338	26.5144	52.71	148.45
$Internet_{it}$	468	307.5774	3688.294	0.49	59826
$Internet_{vnt}$	468	42.1873	15.5599	20.755	70.35
$Prsge_{vnt}$	468	-0.1287	0.1328	-0.2698	0.0674
$Prsge_{it}$	468	0.9192	0.8620	-0.9888	2.4370
$Prsrl_{vnt}$	468	-0.3289	0.2508	-0.5914	0.0754
$Prsrl_{it}$	468	0.8123	0.9526	-1.1483	2.1003
$Prspv_{vnt}$	468	0.1814	0.0886	-0.0223	0.2884
$Prspv_{it}$	468	0.4115	0.7970	-1.7783	1.6559
$Prscc_{it}$	468	0.7634	1.1110	-1.3257	2.4465
$Prscc_{vnt}$	468	-0.5396	0.0825	-0.7071	-0.4262

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4. Empirical Results

Table 2 reports the main findings regarding the impact of Bilateral Investment Treaties (BITs), economic size, and geographical distance on foreign direct investment (FDI) inflows into Vietnam. Column (1) presents the results using the Fixed Effects (FE) model, while Column (2) reports the Random Effects (RE) estimates. The coefficient for DummyBITs is 0.354 in the FE model and 0.352 in the RE model, both statistically significant at the 1% level. This suggests that the presence of a BIT between Vietnam and a partner country has a strong positive effect on FDI inflows. These findings align with those of Egger and Merlo [5] who reported a significant increase in FDI flows following BIT implementation, and Busse and Hefeker [10], who found that BITs positively influence FDI, particularly when supported by strong institutional frameworks.

Column (1) and Column (2) also examine the impact of economic size, measured by the GDP of both Vietnam and its partner countries, on FDI inflows. The coefficient for $LnGDP_{it}$ (partner country GDP) is 0.128 in the FE model and 0.120 in the RE model, both significant at the 1% level, indicating that larger economies tend to invest more in Vietnam. Similarly, the coefficient for $LnGDP_{vnt}$ (Vietnam's GDP) is 0.555 and 0.558, respectively, also significant at the 1% level, reinforcing the idea that Vietnam's economic growth enhances its attractiveness to foreign investors. These findings are consistent with Blonigen and Piger [13] who found that GDP is one of the most robust determinants of FDI, and Daude and Stein [41] who highlighted the role of market size in attracting investment.

The geographical distance variable ($LnDist_{ivn}$) is negative and statistically significant at the 5% level in the RE model, with a coefficient of -0.241, confirming that greater distance reduces FDI inflows. This result is consistent with Portes and Rey [18] who demonstrated that distance negatively affects cross-border investment due to higher transaction costs and information asymmetry. Similarly, Head and Mayer [42] found that firms prefer geographically closer destinations for investment, supporting the study's conclusion that distance remains a key barrier to FDI in Vietnam.

The coefficient for CTG_{ivn}, representing whether a partner country shares a border with Vietnam, is 0.068 and weakly significant at the 10% level, suggesting that border-sharing provides a small but positive advantage in attracting FDI. However, its limited significance implies that other factors, such as economic size and BITs, play a more critical role in investment decisions. This finding aligns with previous studies, such as Sahoo, et al. [43]which found that while proximity is a factor, institutional and economic determinants are more influential in driving FDI inflows.

Overall, the regression results confirm that BITs and economic size are the primary drivers of FDI inflows into Vietnam, while geographical distance acts as a barrier.

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Table 2.
Baseline results on the impact of BITs on FDI.

	$LnFDI_{ivnt}$	
	(1)	(2)
$DummyBITs$	0.354***	0.352***
	(0.029)	(0.029)
$Lngdp_{it}$	0.128***	0.120***
	(0.028)	(0.025)
$Lngdp_{vnt}$	0.555***	0.558***
	0.015	(0.014)
$Lndist_{ivn}$		-0.241**
		(0.114)
CTG_{ivn}		0.068*
		(0.369)
Ob.	468	468
No. Id	36	36
Type	FE	RE

Note: This table presents regression estimates of the relationship between BITs and FDI inflows to Vietnam. Robust standard errors are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3 highlights the role of economic openness in influencing FDI inflows, with a focus on the openness of both Vietnam (OPN_{vnt}) and its partner countries (OPN_{it}). The coefficient for OPN_{it} is 0.0024* and statistically significant at the 1% level, indicating that greater economic openness in Vietnam significantly enhances FDI inflows. In contrast, OPN_it is positive but statistically insignificant, suggesting that the openness of Vietnam's partner countries does not have a direct impact on FDI inflows into Vietnam. This result implies that Vietnam's internal economic reforms, trade liberalization, and investment-friendly policies are key drivers of FDI attraction, whereas the openness of partner economies plays a less decisive role.

The strong significance of Vietnam's economic openness suggests that policies promoting free trade, reducing investment restrictions, and enhancing market accessibility are critical in attracting FDI. This aligns with Busse and Hefeker [10] who found that countries with higher levels of trade and investment openness tend to attract more FDI due to reduced market entry barriers. Similarly, Asiedu [44] reported that openness to trade significantly increases FDI inflows, particularly in developing countries, by creating a more predictable and investor-friendly environment. The findings of Table 3.2 reinforce these conclusions, showing that economic openness is a fundamental determinant of FDI in Vietnam.

The relationship between BITs and economic openness further strengthens the impact of FDI. The coefficient for DummyBITs remains highly significant (0.343 in Column 2), indicating that BITs have a direct and positive effect on FDI. However, the simultaneous significance of OPN_{vnt} suggests that BITs and economic openness are complementary rather than independent factors. BITs provide legal security for investors, while openness enhances market access and reduces trade barriers, jointly making Vietnam a more attractive destination for foreign investors. This is consistent with Neumayer and Spess [3] who found that BITs alone do not guarantee higher FDI inflows unless they are supported by an open and liberalized economy.

Additionally, ASEAN membership (ASE_i), which represents regional economic openness, has a strong positive effect on FDI (0.633*, significant at the 1% level), reinforcing the idea that regional integration enhances investment attractiveness. This aligns with Petri, et al. [35] who found that ASEAN's trade agreements significantly boost FDI inflows by reducing trade costs and improving

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regulatory cooperation. The findings from Table 3 suggest that Vietnam's deeper integration into ASEAN strengthens the positive impact of both BITs and economic openness on FDI.

Table 3.
Regression results on the impact of BITs on FDI with controlled Economic Openness factor.

	$LnFDI_{ivnt}$	
	(1)	(2)
$DummyBITs$	0.367***	0.343***
	(0.029)	(0.029)
$Lngdp_{it}$	0.121***	0.069***
	(0.025)	(0.026)
$Lngdp_{vnt}$	0.416***	0.562***
	(0.014)	(0.014)
$Lndist_{ivn}$	-0.243**	0.041
	(0.113)	(0.125)
CTG_{ivn}	0.072*	0.006
	(0.367)	(0.374)
ASE_i		0.633***
		(0.080)
OPN_{it}	0.00009	
	(0.00005)	
OPN_{vnt}	0.0024***	
	(0.0004)	
Ob.	468	468
No. Id	36	36

Note: This table presents regression estimates of the relationship between BITs and FDI inflows to Vietnam. Robust standard errors are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4 presents the estimation results incorporating macroeconomic variables, including inflation (INF_{it}, INF_{vnt}), inflation rate differences (DIF_{ivn}), and exchange rates (EXR_it, EXR_vnt), alongside key Gravity Model variables. The results reaffirm the positive and significant effect of BITs (DummyBITs) on FDI inflows across all three columns (0.370, 0.354, and 0.369, all significant at the 1% level), indicating that BITs continue to be a crucial factor in attracting investment. Additionally, economic size ($LnGDP_{it}$ and $LnGDP_{vnt}$) remains a key determinant, with Vietnam's GDP showing increasing significance (0.340 in Column 1 to 0.858 in Column 3), suggesting that Vietnam's macroeconomic growth enhances its ability to attract FDI.

The macroeconomic variables, however, present mixed effects on FDI. Inflation in Vietnam (INF_{vnt}) has a significant negative impact (-0.017 at the 1% level), implying that rising inflation reduces investor confidence and deters FDI inflows. This is consistent with Asiedu [44] who found that macroeconomic instability, particularly inflation, negatively impacts FDI in developing economies. Similarly, DIF_{ivn} (the difference in inflation rates between Vietnam and its partner country) is weakly significant and negative (-0.00011 at the 10% level), suggesting that inflation disparities may create uncertainty in investment decision-making.

Exchange rate fluctuations further contribute to the detrimental effects of macroeconomic instability on FDI. The coefficients for EXR_{it} (-0.008 at the 1% level) and EXR_{vnt} (-1.102 at the 1% level) indicate that exchange rate volatility—both in Vietnam and its partner countries—negatively influences FDI inflows. This aligns with findings from Alemu [23] who observed that exchange rate uncertainty discourages foreign investors due to the risks associated with currency fluctuations. The strong negative impact of EXR_{vnt}suggests that a depreciation of Vietnam's currency may lead to investment caution, possibly due to concerns about profit repatriation and financial stability.

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Overall, the results indicate that while BITs and economic growth positively influence FDI, macroeconomic instability—particularly inflation and exchange rate volatility—creates challenges for investment attraction.

Table 4.
Regression Results on the Impact of BITs on FDI with Controlled Macro Variables.

	$LnFDI_{ivnt}$		
	(1)	(2)	(3)
$DummyBITs$	0.370***	0.354***	0.369***
	(0.029)	(0.029)	(0.030)
$Lngdp_{it}$	0.188***	0.124***	0.109***
	(0.026)	(0.025)	(0.027)
$Lngdp_{vnt}$	0.340***	0.537***	0.858***
	(0.018)	(0.016)	(0.042)
$Lndist_{ivn}$	-0.239**	-0.240**	-0.083
	(0.119)	(0.114)	(0.163)
CTG_{ivn}	0.098	0.064	0.791
	(0.392)	(0.371)	(0.555)
INF_{it}	0.00008*		
	(0.000044)		
INF_{vnt}	-0.017***		
	(0.0011)		
DIF_{ivnt}		-0.00011*	
		(0.000039)	
EXR_{it}			-0.008***
			(0.0004)
EXR_{vnt}			-1.102***
			(0.126)
Ob.	466	468	468
No. Id	36	36	36

Note: This table presents regression estimates of the relationship between BITs and FDI inflows to Vietnam. Robust standard errors are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5 presents the results of the controlled estimation of infrastructure variables, confirming that telecommunications and internet connectivity play a crucial role in attracting FDI into Vietnam. The findings indicate that Vietnam's infrastructure improvements have a stronger impact on FDI compared to similar developments in partner countries, suggesting that domestic infrastructure quality is a key factor in investment decisions.

The positive and highly significant coefficient for CEL_{vnt} (0.0054 at the 1% level) compared to CEL_{it} (0.0002 at the 1% level) demonstrates that mobile network penetration in Vietnam has a more pronounced effect on FDI than in partner countries. This supports the argument that efficient telecommunications infrastructure reduces operational costs, facilitates investor communication, and enhances business productivity. These results align with Chen, et al. [26] who found that strong mobile connectivity boosts FDI in developing economies by improving access to digital services and market integration. Similarly, Khanna and Palepu [25] emphasize that countries with better mobile infrastructure attract more FDI due to improved logistics and supply chain efficiency, further supporting the results in Table 3.4.

Internet penetration also plays a role in facilitating cross-border investment, as indicated by the significant coefficient for INT_{it} (0.000006 at the 1% level). This suggests that higher internet usage in partner countries strengthens digital connectivity, making it easier for foreign investors to access information and manage operations remotely. However, INT_{vnt} (0.0054) is positive but statistically insignificant, implying that while internet infrastructure in Vietnam contributes to investment

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attraction, its direct effect may be limited. This finding aligns with Zhang, et al. [45] who found that internet penetration enhances FDI flows but is most effective when combined with other infrastructure improvements, such as stable electricity and transportation networks.

Additionally, the results reaffirm the strong role of BITs (DummyBITs), with coefficients remaining positive and highly significant (0.440 in Column 1 and 0.324 in Column 2, both at the 1% level). This supports the argument that legal protections provided by BITs and infrastructure development work together to enhance Vietnam's investment climate. Dutta and Roy [46] also found that FDI inflows increase significantly when BITs are reinforced by improvements in telecommunications and digital infrastructure, further validating the findings in this study.

Overall, the results in Table 5 confirm that infrastructure improvements—particularly in mobile networks and digital connectivity—are critical in attracting FDI into Vietnam.

Table 5.
Regression Results on the Impact of BITs on FDI with Controlled Infrastructure variables.

	$LnFDI_{ivnt}$	
	(1)	(2)
$DummyBITs$	0.440***	0.324***
	(0.030)	(0.030)
$Lngdp_{it}$	0.171***	0.121***
	(0.025)	(0.025)
$Lngdp_{vnt}$	0.816***	0.780***
	(0.019)	(0.035)
$Lndist_{ivn}$	-0.245**	-0.241**
	(0.117)	(0.114)
CTG_{ivn}	0.550	0.063
	(0.385)	(0.369)
CEL_{it}	0.0002***	
	(0.00004)	
CEL_{vnt}	0.0054***	
	(0.0002)	
INT_{it}		0.000006***
		(0.0000013)
INT_{vnt}		0.0054
		(0.00074)
Ob.	467	468
No. Id	36	36

Note: This table presents regression estimates of the relationship between BITs and FDI inflows to Vietnam. Robust standard errors are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6 presents the results of the controlled estimation for institutional factors, focusing on Political Stability and Absence of Violence (PVI), Government Effectiveness (GEI), Rule of Law (RLI), and Control of Corruption (CCI). These factors are increasingly recognized as key determinants of FDI attractiveness, as they shape the business environment and investor confidence.

The results show that Government Effectiveness (GEI), Rule of Law (RLI), and Control of Corruption (CCI) have a significant and positive impact on FDI inflows into Vietnam. The coefficient for GEI_{vnt} (0.436*, significant at the 1% level) suggests that improved governance enhances investor confidence, making Vietnam a more attractive investment destination. Similarly, RLI_{vnt} (0.084 at the 1% level) and CCI_{vnt} (0.670 at the 1% level) indicate that stronger legal institutions and anti-corruption measures contribute to increased FDI inflows. These findings align with Globerman and Shapiro [28] who found that countries with effective governance and strong legal frameworks attract more stable and long-term foreign investment.

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Conversely, Political Stability and Absence of Violence (PVI_{it} and PVI_{vnt}) negatively affect FDI inflows, with PVI_{it} (-0.389*, significant at the 1% level) having the strongest negative effect. This suggests that political instability in partner countries discourages investment in Vietnam, possibly due to disruptions in trade relations and economic uncertainty. However, PVI_{vnt} (-0.057) is statistically insignificant, implying that while political stability is important, it is not the primary concern for foreign investors in Vietnam. These findings align with Busse and Hefeker [10] who found that political instability negatively impacts FDI but is often overshadowed by factors such as governance and legal stability.

The DummyBITs coefficient remains positive and highly significant across all models (0.405 to 0.460, all at the 1% level), reinforcing the idea that BITs contribute positively to FDI inflows. However, the strong effects of institutional quality variables (GEI, RLI, CCI) suggest that BITs alone are not sufficient; they must be complemented by good governance, legal certainty, and anti-corruption measures. This is supported by Neumayer and Spess [3] who argue that BITs are more effective in attracting FDI when paired with strong institutional frameworks.

Overall, the results confirm that institutional quality plays a crucial role in shaping Vietnam's investment climate. While BITs remain significant in attracting FDI, improvements in government effectiveness, legal transparency, and anti-corruption measures further enhance investor confidence.

Table 6.
Regression Results on the Impact of BITs on FDI with Controlled Institutional factors.

	$LnFDI_{ivnt}$			
	(1)	(2)	(3)	(4)
$DummyBITs$	0.405***	0.403***	0.380***	0.460***
	(0.030)	(0.030)	(0.030)	(0.031)
$Lngdp_{it}$	0.278***	0.116***	0.118***	0.040
	(0.029)	(0.026)	(0.025)	(0.027)
$Lngdp_{vnt}$	0.527***	0.413***	0.498***	0.474***
	(0.015)	(0.022)	(0.021)	(0.181)
$Lndist_{ivn}$	-0.122	-0.304**	-0.291**	-0.534***
	(0.162)	(0.120)	(0.113)	(0.167)
CTG_{ivn}	0.377	0.323	0.061	0.271
	(0.540)	(0.390)	(0.362)	(0.516)
PVI_{it}	-0.389***			
	(0.024)			
PVI_{vnt}	-0.057			
	(0.046)			
GEI_{it}		0.340***		
		(0.031)		
GEI_{vnt}		0.436***		
		(0.051)		
RLI_{it}			0.131***	
			(0.040)	
RLI_{vnt}			0.084***	
			(0.025)	
CCI_{it}				0.667***
				(0.038)
CCI_{vnt}				0.670***
				(0.068)
Ob.	468	468	468	468
No. Id	36	36	36	36

Note: This table presents regression estimates of the relationship between BITs and FDI inflows to Vietnam. Robust standard errors are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

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5. Discussion

The findings of this study provide strong empirical evidence supporting the positive impact of Bilateral Investment Treaties (BITs) on Foreign Direct Investment (FDI) inflows into Vietnam. The consistently significant and positive coefficients for DummyBITs across all models reaffirm the role of BITs in enhancing investor confidence and providing legal protection, thereby stimulating FDI inflows. This aligns with prior studies by Haftel [6] and Grosse and Trevino [47] which highlight the benefits of BITs in facilitating cross-border investment. However, the findings also emphasize that BITs alone are insufficient; complementary factors such as macroeconomic stability, infrastructure development, and institutional quality play critical roles in maximizing the benefits of BITs.

Macroeconomic factors such as inflation and exchange rate volatility are found to have a negative impact on FDI inflows, indicating that macroeconomic instability can deter foreign investors. This aligns with findings by Alemu [23] who emphasized that unpredictable inflation and exchange rate fluctuations increase investment risks and discourage long-term commitments. These results suggest that while BITs create a favorable legal framework for investment, stable macroeconomic conditions are crucial for sustaining investor confidence.

The study also highlights the importance of infrastructure in attracting FDI, particularly mobile network penetration and internet usage. The positive and significant coefficients suggest that improved telecommunications infrastructure reduces transaction costs, enhances business efficiency, and facilitates digital connectivity, making Vietnam a more attractive investment destination. These findings align with Zhang, et al. [45] and OECD [48] who emphasize the growing role of digital infrastructure in shaping investment decisions. The stronger effect of Vietnam's own infrastructure compared to that of partner countries suggests that domestic improvements in digital connectivity have a direct and substantial influence on investor decisions.

Institutional quality emerges as a critical determinant of FDI inflows. The results indicate that Government Effectiveness, Rule of Law, and Control of Corruption significantly enhance Vietnam's ability to attract FDI. The positive impact of Control of Corruption highlights the importance of anti-corruption measures in fostering a transparent and stable business environment. These findings are consistent with Alemu [23] and Neumayer and Spess [3] who argue that institutional quality enhances BIT effectiveness by reducing investor uncertainty. Conversely, Political Stability and Absence of Violence show a negative impact on FDI, indicating that political risks in partner countries and Vietnam can create uncertainty for foreign investors, a result that aligns with Busse and Hefeker [10].

Furthermore, the results show that ASEAN membership positively influences FDI inflows, emphasizing the importance of regional economic integration. This finding supports Petri, et al. [35] who argue that regional trade agreements such as ASEAN Economic Community (AEC) enhance FDI attraction by reducing trade barriers and improving investment conditions.

Overall, the results indicate that BITs alone are not the sole driver of FDI; rather, their effectiveness depends on macroeconomic stability, infrastructure quality, and strong institutional frameworks. This underscores the need for a holistic policy approach, where Vietnam not only expands its BIT network but also strengthens governance, infrastructure, and economic stability to optimize FDI inflows.

6. Conclusion

This study examines the impact of Bilateral Investment Treaties (BITs) on FDI inflows to Vietnam using the Gravity Model and panel data from 2007 to 2019. The findings confirm that BITs play a significant role in attracting FDI, with a strong and positive effect across all models. However, the results also highlight that BITs work best when combined with sound macroeconomic policies, robust infrastructure, and high institutional quality.

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Macroeconomic stability is a crucial factor influencing FDI, as evidenced by the negative effects of inflation and exchange rate volatility. This suggests that Vietnam should implement policies to control inflation and stabilize the exchange rate to maintain investor confidence.

The role of infrastructure, particularly digital connectivity, is increasingly important in the context of Industry 4.0. The findings indicate that mobile penetration and internet access have a strong positive impact on FDI inflows, suggesting that Vietnam should prioritize investments in telecommunications and digital infrastructure to enhance its competitiveness.

Institutional quality is another key determinant of FDI attraction. The significant effects of Government Effectiveness, Rule of Law, and Control of Corruption highlight the importance of strong governance, legal transparency, and anti-corruption measures in fostering a stable investment environment. The findings suggest that Vietnam should continue institutional reforms to strengthen investor protections, improve regulatory efficiency, and enhance the rule of law.

These findings have important policy implications for Vietnam and other emerging economies aiming to leverage BITs as a tool for investment attraction. While BITs provide legal assurances and market access, their effectiveness depends on broader structural reforms. Countries seeking to maximize FDI inflows should not rely solely on BITs but also focus on strengthening institutions, stabilizing macroeconomic conditions, and improving infrastructure.

By adopting a comprehensive approach that integrates BITs with domestic reforms, Vietnam can enhance its investment climate, attract higher-quality FDI, and sustain long-term economic growth. Moving forward, future research should explore sector-specific FDI trends and the interaction between BITs and digital economy policies, providing deeper insights into Vietnam's evolving role as a global investment destination.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Appendix 1.
Countries included in the Study Sample.

No.	Country	No.	Country
1	Australia	19	Japan
2	Austria	20	Korea
3	Belgium	21	Laos
4	Bulgaria	22	Luxembourg
5	Cambodia	23	Malaysia
6	China	24	Philippines
7	Czech Republic	25	Poland
8	Denmark	26	Romania
9	Egypt	27	Russia
10	Estonia	28	Singapore
11	Finland	29	Slovakia
12	France	30	Spain
13	Germany	31	Sweden
14	Hungary	32	Switzerland
15	Iceland	33	Thailand
16	India	34	UAE
17	Indonesia	35	United Kingdom
18	Italy	36	United States

Appendix 2.
Hausman Test Results.

Statistic	Value
chi^2	0.45
Prob > chi^2	0.9296

In this test, the result shows that $chi^2 = 0.9296 > 0$. This means that we cannot reject the null hypothesis (H_0). Therefore, the Random Effects (RE) model is preferred over the Fixed Effects (FE) model for this study.

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Appendix 3.
Breusch-Pagan Lagrange Multiplier (LM) Test Results.

Statistic	**Value**
chi^2	285.42
Prob > chi^2	0.000

The result indicates a highly significant chi^2 value ($p < 0.01$), confirming that the Random Effects (RE) model is more appropriate than the Ordinary Least Squares (OLS) estimation for this dataset.

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