DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN VIETNAM IN THE CONTEXT OF GLOBAL INTEGRATION

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Abstract

This study is conducted to find out the determinants of Foreign Direct Investment in Vietnam, especially focusing on the roles of economic growth, financial stability, trade openness, debt, inflation, and impacts of FTAs. The multiple linear regression model is applied to analyze these enablers' impacts on FDI inflows. Further, the study tries to analyze the impacts that Vietnam's becoming a part of the WTO and different FTAs has, in particular: ASEAN Free Trade Area (AFTA), Vietnam-Japan Economic Partnership Agreement (VJEPA), Vietnam-Korea Free Trade Agreement (VKFTA), and the EU-Vietnam Free Trade Agreement (EVFTA), by using them as the dummies in our model. Moreover, the comparison of models with and without the dummy variables is performed in order to have a clearly look at global integration when it comes to attracting FDI. Each dummy variable is also considered both simultaneously and separately, so as to clarify its role. The results highlight that lagged FDI, infrastructure, and natural resources are significant positive factors for FDI, whereas inflation has a negative impact. Trade openness and market size, however, do not show consistent significance. The WTO's significance, particularly in models with FTAs, underscores the importance of global trade norms and reduced trade barriers in attracting FDI.

Keywords*: FDI, FTAs, globalization*
JEL*: F15, F62, G15*

Introduction

Globalization has been rapidly accelerating worldwide, fostering economic, cultural, political, and social integration among nations. It has become an essential driver of economic development. As economies become more interconnected, they are increasingly vulnerable to global economic fluctuations (Pekarskienea & Susnieneb, 2015). Countries must actively attract and retain foreign direct investment (FDI) to fuel economic growth. As a key driver of long-term economic development, FDI is a strategic priority for many nations (Ali & Hussaim, 2017). The flow of FDI into a country is influenced by foreign investors' decisions, prompting extensive research to identify the factors that shape these decisions. However, the specific factors influencing foreign direct investment (FDI) and their relative importance vary across countries and evolve over time due to changing investor motivations. Consequently, attracting FDI remains a significant challenge for host countries, necessitating ongoing efforts to identify and address critical influencing factors (Duong, Holmes, & Strutt, 2020).

　　Furthermore, in the context of economic globalization, the spreading of bilateral and multilateral free trade agreements (FTAs) has become increasingly prominent. FTAs are widely recognized as a significant driver of FDI in emerging economies. One of the primary motivations for countries to enter into FTAs is the anticipated increase in FDI inflows (Medvedev 2012). In the long term, such integration is expected to boost growth rates among member countries through expanded markets, enhanced competitive capacity, improved resource allocation, and positive externalities (Yoo, 2016). Unfortunately, previous research on the relationship between FDI and

FTAs has primarily focused on either multiple FTAs for a group of countries or specific case studies of individual FTAs. The impact of a country's overall participation in FTAs on its FDI flows has been relatively unexplored (Duong, Holmes, & Strutt, 2020).

In Vietnam, the involvement of the FDI sector in various industries has played a crucial role in modernizing the country's economic structure, creating a dynamic business environment, and enhancing production capabilities. FDI has contributed significantly to boosting exports and trade surpluses, thereby stimulating economic growth. In addition, as of August 2023, Vietnam has successfully negotiated or is currently negotiating a total of 19 FTAs (Vu, 2023). Notably, several of these agreements, including the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), the EU-Vietnam Free Trade Agreement (EVFTA), and the Vietnam-Korea Free Trade Agreement (VKFTA), represent a new generation of trade agreements with broader scopes beyond traditional commitments on trade, services, and investment. They encompass institutional and legal frameworks in areas such as the environment, labor, state-owned enterprises, intellectual property, and government procurement. The implementation of these FTAs could have a substantial impact on Vietnam's economic growth rate, institutional development, and international trade dynamics (Vietnamese Ministry of Industry and Trade, 2024).

Given the existing gaps in research on the impact of global integration and FTAs on FDI, as well as the roles of both FDI and FTAs in Vietnam, this study aims to identify the key determinants of FDI in Vietnam in the context of global integration. This study is conducted to identify the determinants of FDI in Vietnam, with a particular emphasis on the roles of global integration and the effects of FTAs.

Literature review

Determinants of Foreign Direct Investment in the context of Global Integration

There are many empirical papers on researching the factors affecting FDI. However, the variables identified as determinants of FDI vary from one to another. Therefore, it is difficult to unify the determinants of FDI especially some explanatory variables that have been attained but are less important over time. All studies try to answer the question of why some countries attract more FDI than others (Ngo et al., 2020).

Market size is considered as an important determinant of FDI and most of the empirical studies found positive relationship between host countries' market size, market growth and FDI (Ho, Vo, & Vu, 2019; Pehlivan, 2019; Ngo et al., 2020; Iweze, Akinsola, & Olanrewaju, 2020). This is because a large market will attract firms that want to expand into other markets to obtain greater sales or market share. Also, the firms may want to enter into markets where they can grow (Çene & Karaman, 2023). Almost all investigations discovered a positive significant effect of the Market size on FDI flows. However, Arbatli (2011) provided research, which results show a significant negative relationship between GDP per capita and FDI flows. The author suggests that this variable is related to the capital-to-labor ratio and, hence, the productivity of capital; countries with lower level of per capita income might attract more inflows, consistent with a higher marginal productivity of capital. Although, these results are not confirmed by other researches and cannot be considered relevant. Thus, the great majority of studies prove that Market Size is one of the most important incentives influencing investors' decisions (Tocar, 2018). In most of the studies, gross national

product (GNP) or gross domestic product (GDP) are being used as a proxy for market size. In some studies, population is also preferred as an indicator of market size (Çene & Karaman, 2023).

Another macroeconomic factor that is considered to influence FDI flows is Inflation, which is meant to measure instability at the macro level (Tocar, 2018). Relating to empirical evidence on macroeconomic policy, some authors found that the inflation rate and its negatively impact on FDI (Yao & Wei, 2007; Hong & Ali, 2020; Mehak & Waqas, 2023). Countries with high inflation rates are often associated with reduced capital inflows due to increased macroeconomic risks. Investors may be less inclined to invest in countries with high inflation, as it can create uncertainty and erode the value of their investments (Shukurov, Maitah, & Smutka, 2016). In contrast, Alfaro et al. (2009) shows that the increase in domestic inflation speeds up foreign investment through changes in consumption patterns over time. Coban & Yussif (2019), examine the connection between Ghana's economic expansion, FDI, and inflation. According to his research, a low inflation rate stabilizes the host nation internally, which in turn encourages FDI and increases its returns.

The primary basis for an investment decision is whether the investment environment supports foreign-invested enterprises' activities or not (Ho, Vo, & Vu, 2019). A higher level of infrastructure means better transportation and better communication opportunities. Also, the infrastructure level may indicate a high level of urbanization and many consumers (Çene & Karaman, 2023). The availability of well-developed infrastructure will reduce the cost of doing business for foreign investors and enable them to maximize the rate of return on investment (Bekana, 2016). This factor appears to have a significant positive influence on FDI, proving the fact that superior infrastructure facilities increase the attractiveness of a country to foreign investors (Bellos & Subasat, 2012; Sánchez-Martín et al., 2014; Shukurov, Maitah, & Smutka, 2016). The investment environment can be seen as the infrastructure that promotes economic activities such as harbors, water systems, electricity, road transportation, telecommunications, internet services, mobile phones, air transport, rail ways (Ho, Vo, & Vu, 2019).

Natural resources are a confident impactor on FDI. Al-Matari (2021) suggests that natural resources have a negative impact on FDI and that the FDI source curse perseveres even afterward directed to the institution's quality and other vital FDI factors. Asongu, Akpan, & Isihak (2018) suggests that the negative contribution of natural resource endowment to FDI resulted because countries that are highly endowed are more likely to have protectionist policies, thereby limiting potential FDI from resource-seeking MNCs. However, Asiedu (2006) examined the determinants of FDI inflows to African countries during 1984-2000, suggesting that natural resource endowments can attract FDI. Subsequent studies by Sichei and Kinyondo (2012) and Shukurov et al. (2016) corroborate this finding.

Trade openness is generally defined as the ratio of exports plus imports over GDP, and it also means the level of economic integration in the host country compared to the world economy (Çene & Karaman, 2023). Trade openness is an opportunity for foreign investors who can exploit the comparative advantage of the host country to re-export to another nation. This variable is created as TRADE = (Export + Import)/GDP, where TRADE represents for trade openness, GDP is for the gross domestic product (Ho, Vo, & Vu, 2019). Several studies (Rehman, 2016; Tocar, 2018; Kanazawa & Kang, 2019) suggest that countries with higher levels of trade openness are more likely to be integrated into the global economy and exhibit greater competitiveness in the global market. Consequently, higher trade openness is expected to positively influence FDI flows. However, Hintošová et al. (2018), in their analysis of FDI inflows in the Visegrad countries, found that trade openness may lead to a significant decrease in FDI. Similar findings were reported by Ho, Vo, & Vu (2019) and Ngo et al. (2020).

Shukurov et al. (2016), in their analysis of determinants of FDI in the Commonwealth of Independent States countries, identified lagged FDI as a significant predictor of FDI inflows. This finding suggests that foreign investors are attracted to countries with existing foreign investment, perceiving it as a positive indicator of a favorable investment environment.

Free trade agreements (FTAs) have been viewed as an increasingly important driver of FDI in emerging countries. One of the most important reasons a country enters into an FTA is the expectation of increased FDI flows. In the long run, the integration is expected to increase growth rates of members thanks to greater markets, improved competition capacity, better resource allocation and positive externalities (Duong, Holmes, & Strutt, 2020). FTAs may also alter the macroeconomic environment where firms operate by strengthening fiscal discipline, macroeconomic stability and the rule of law in the host country. Therefore, they might provide a more favorable setting to attract FDI. The literature has identified three main theoretical reasons why FTAs may impact FDI: they signal that signatory governments are willing to create an adequate institutional and economic environment for FDI; they provide an insurance for foreign investors by establishing compensation schemes and conflict resolution procedures; they deter non-compliance because of the potential reputation costs for countries breaching the treaties. When FTAs are considered as signals, they may attract FDI from both partner and non-partner countries. If FTAs are considered as insurers or deterrents, though, the attraction of FDI from partners will be higher than from non-partners, albeit both will be positive (Bengoa et al., 2020).

Yoo (2016) notes main goals of FTA, including the changes of the international trade environment and economic system as well as the elimination of trade barriers through tariff removal. They argued that FTA will contribute to increase in FDI regardless of types of affiliate and investment motives. FTA influences directly and indirectly on the increase in FDI. As a direct influence of FTA, FDI can be increased because regulations relative to investments and capital movements will be alleviated after concluding FTA. And as an indirect influence of FTA, it is noted that economic environments are changed after concluding FTA; FTA induces to realize the economy of scale as well as influences on the change of ratio in the factor endowments for manufacturing products. Therefore, not only does vertical FDI have complement relationship with trade transactions, it is possible that horizontal FDI can be also increased after FTA is in effect. Empirical studies about FTAs effect on FDI generally suggested that there is a positive relationship between FTA and FDI (Bengoa et al., 2020; Kanazawa & Kang, 2019; Shah & Khan, 2016).

Global integration in Vietnam

Since the implementation of the Doi Moi (Renovation) policy in 1986, Vietnam has undergone a significant transition from a centrally planned economy to a market-oriented economy, resulting in increased integration into the global economy. The Doi Moi reforms focused on liberalizing the economy, promoting private enterprise, and attracting foreign investment and trade. These reforms culminated in Vietnam's accession to the World Trade Organization (WTO) in 2007, marking a significant milestone in its global economic integration. WTO membership provided greater access to international markets, driving economic growth and poverty reduction. Since the early 2000s, Vietnam's GDP growth has averaged 6-7% annually, solidifying its position as one of the world's fastest-growing economies.

Beyond economic integration, Vietnam has actively participated in global governance and multilateral institutions. The country's membership in organizations such as the United Nations, ASEAN, and free trade agreements has not only strengthened its trade relations but also established

its position as a key player in regional security and diplomatic affairs. Vietnam's global integration has been characterized by significant economic reforms, strategic engagement in international trade agreements, and an active role in multilateral institutions, contributing to its emergence as a dynamic and influential country on the global stage. Table 1 describes the FTAs that Vietnam has participated in or is in the process of negotiating.

Table 1. FTAs involving Vietnam until August 2023

FTA	Effective situation	Partners
ASEAN Free Trade Area (AFTA)	Effective from 1993	ASEAN
ASEAN – China Free Trade Agreement (ACFTA)	Effective from 2003	ASEAN, China
ASEAN – Korea Free Trade Agreement (AKFTA)	Effective from 2007	ASEAN, Korea
ASEAN-Japan Comprehensive Economic Partnership Agreement (AJCEP)	Effective from 2008	ASEAN, Japan
Vietnam-Japan Economic Partnership Agreement (VJEPA)	Effective from 2009	Vietnam, Japan
ASEAN – India Free Trade Agreement (AIFTA)	Effective from 2010	ASEAN, India
ASEAN – Australia – New Zealand Free Trade Area (AANZFTA)	Effective from 2010	ASEAN, Australia, New Zealand
Vietnam – Chile Free Trade Agreement (VCFTA)	Effective from 2014	Việt Nam, Chile
Vietnam – Korea Free Trade Agreement (VKFTA)	Effective from 2015	Việt Nam, Korea
Vietnam - Eurasian Economic Union Free Trade Agreement (VN-EAEU FTA)	Effective from 2016	Việt Nam, Russia, Belarus, Amenia, Kazakhstan, Kyrgyzstan
Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	Effective in Vietnam from 2019	Vietnam, Canada, Mexico, Peru, Chile, New Zealand, Australia, Japan, Singapore, Brunei, Malaysia, the UK
ASEAN – Hong Kong Free Trade Agreement (AHKFTA)	Effective in Vietnam from 2019	ASEAN, Hong Kong
EU – Vietnam Free Trade Agreement (EVFTA)	Effective from 2020	Vietnam, EU (27 members)
The UK – Vietnam Free Trade Agreement (UKVFTA)	Effective from 2021	Vietnam, the UK
Regional Comprehensive Economic Partnership (RCEP)	Effective from 2022	ASEAN, China, Korea, Japan, Australia, New Zealand
Vietnam – Israel Free Trade Agreement (VIFTA)	Officially signed on July 2023	Vietnam, Israel
Free Trade Agreement between Vietnam and EFTA States	Negotiations started on May 2012	Vietnam, EFTA States (Norway, Switzerland, Iceland, and Liechtenstein)
Free Trade Agreement between ASEAN and Canada	Negotiations restarted on November 2021	ASEAN, Canada

Free Trade Agreement between Vietnam and the UAE	In the process of preparing for negotiations	Vietnam, the UAE

Source: Vietnamese Ministry of Industry and Trade, 2024

Data and methodology

Data

To comprehensively evaluate the factors influencing FDI attraction in Vietnam, data will be gathered from 1987, one year after the Doi Moi policy was implemented, through 2022. The data used in this study originated from the World Bank database and included indicators on market size (MS), share of natural resources in GDP, trade, and infrastructure. Additionally, data from the General Statistics Office of Vietnam was utilized to compile information on net inflows of FDI, and inflation rate.

Model specification

This study used the empirical model developed by Asongu, Akpan, & Isihak (2018) to analyze the determinants of FDI, with independent variables being MS (market size), NR (share of natural resources in GDP), IFR (infrastructure), IFL (inflation), and TRADE (trade openess). Given the emphasis placed on global integration and FTAs as determinants of FDI in previous studies by Bengoa et al. (2020), Kanazawa & Kang (2019), and Shah & Khan (2016), this research will incorporate these factors into the proposed model to draw empirical conclusions specific to the Vietnamese context. Since ASEAN, Japan, South Korea, and the EU are Vietnam's major trading partners, this study will incorporate related FTAs as dummy variables in the model. Furthermore, recognizing the pivotal role of WTO membership in Vietnam's global economic integration, this study will also consider it as a variable to pay attention to.

Therefore, the empirical equations are expressed as follows:

Original model:
(1) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE$

Model with dummy variables:
(2) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*WTO + \beta 8*AFTA + \beta 9*VJEPA + \beta 10*VKFTA + \beta 11*EVFTA$
(3) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*WTO$
(4) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*AFTA$
(5) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*VJEPA$
(6) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*VKFTA$
(7) $FDI \sim \beta 0 + \beta 1 lagFDI + \beta 2*MS + \beta 3*NR + \beta 4*IFR + \beta 5*IFL + \beta 6*TRADE + \beta 7*EVFTA$

Data analysis was conducted using R Studio (R Core Team, 2022). Descriptive statistics were generated using the 'psych' package (Revelle, 2023). Ordinary Least Squares (OLS) regression was employed to estimate the proposed models. In addition, the BIC test is employed to assess the

goodness-of-fit of models 1 and 2, and the model with a lower BIC value has greater appropriateness (Burnham & Anderson, 2002).

Table 2 presents a detailed overview of the variables in all models.

Table 2. Description of Variables

Variables	Description of Variables	Measurement unit	Data Sources
Dependent variable			
FDI	*Natural logarithm of Foreign Direct Investment	Million USD	General Statistics Office of Vietnam
Independent variable			
MS	Market size (measured by Natural logarithm of Gross domestic product)	Million USD	World Bank
NR	Natural resources	As a percentage of GDP	World Bank
IFR	Infrastructure (measured by Individuals using the Internet)	As a percentage of population	World Bank
IFL	Inflation rate	Percent	General Statistics Office of Vietnam
TRADE	Trade openness (measured by Total exports and imports)	As a percentage of GDP	World Bank
WTO	Dummy variable of WTO member	0 or 1	
AFTA	Dummy variable of AFTA member	0 or 1	
VJEPA	Dummy variable of VJEPA member	0 or 1	
VKFTA	Dummy variable of VKFTA member	0 or 1	
EVFTA	Dummy variable of EVFTA member	0 or 1	

*: Natural logarithm is usually used to reduce heteroscedasticity in the variables (Shah, 2016)
Source: Asongu, Akpan, & Isihak (2018); Bengoa et al. (2020), Kanazawa & Kang (2019), and Shah & Khan (2016)

Empirical results

Descriptive statistics

Table 3. Descriptive statistics

Variable	Observations	mean	Std. Dev.	median	min	max
FDI	36	7.85	1.62	7.74	4.04	9.79
lagFDI	36	7.69	1.70	7.64	4.04	9.69
MS	36	11.71	0.69	11.74	10.54	12.79
NR	36	0.07	0.03	0.07	0.01	0.14
IFR	36	0.23	0.27	0.11	0.00	0.79
IFL	36	0.30	0.82	0.07	-0.02	3.93
TRADE	36	1.22	0.44	1.28	0.19	1.86
WTO	36	0.44	0.50	0.00	0.00	1.00
AFTA	36	0.83	0.38	1.00	0.00	1.00

VJEPA	36	0.39	0.49	0.00	0.00	1.00
VKFTA	36	0.22	0.42	0.00	0.00	1.00
EVFTA	36	0.08	0.28	0.00	0.00	1.00

Source: Authors' own calculation

Table 3 shows the descriptive statistics of the variables in the models. The dataset with 36 observations shows that FDI, with a mean of 7.85 and a standard deviation of 1.62, demonstrates moderate variability, reflecting consistent data without extreme outliers. NR are quite stable, showing very low variability, as indicated by a small standard deviation relative to its mean. IFL, however, stands out with a higher standard deviation of 0.82, indicating considerable variability within this variable, with values ranging from negative to significantly positive. The dummy variables (WTO, AFTA, VJEPA, VKFTA, and EVFTA) reveal their proportions, with WTO and AFTA having means of 0.44 and 0.83 respectively, indicating their relative frequency in the data, while VJEPA, VKFTA, and EVFTA have lower means (0.39, 0.22, and 0.08), reflecting their less frequent occurrence.

Multicollinearity test

According to Hair et al. (1998), a model can be concluded to not have the multicollinearity problem if the VIF values of all independent variables are lower than 10. From the test results, the VIF values of IFR in models (2), (3) and (6) are too high (14.03, 14.65 and 11.51, respectively), which implies the existence of multicollinearity in these models. Therefore, the variable IFR will be removed from these two models.

The VIF values are calculated after removing the variable and presented in table 4.

Table 4. VIF values

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
lagFDI	5.01	6.17	5.58	5.36	5.65	5.07	5.29
MS	1.35	1.41	1.32	1.36	1.36	1.36	1.39
NR	1.90	2.11	1.61	1.98	1.93	2.10	2.00
IFR	5.79			6.34	6.20		6.95
IFL	2.30	2.65	2.39	2.30	2.30	2.99	2.40
TRADE	6.69	8.35	4.53	7.96	7.00	6.45	6.74
WTO		3.21	3.34				
AFTA		6.18		6.02			
VJEPA		5.99			5.53		
VKFTA		3.29				3.95	
EVFTA		1.58					1.75

Source: Authors' own calculation

The evaluation of the VIF values across the different models indicates that all variables exhibit acceptable levels of multicollinearity, as none of the VIF values exceed the commonly accepted threshold of 10. IFR and IFL have VIF values relatively high but still within acceptable limits, suggesting that multicollinearity is not severe enough to warrant concern. Variables like MS, NR,

IFL, WTO, AFTA, VKFTA, and EVFTA consistently show low VIF values across models, further indicating a lack of problematic multicollinearity. Therefore, the models can be considered stable with regard to multicollinearity, and the results from these models should be reliable.

Normality test

Shapiro-Wilk normality test is applied for examining the normality of the residuals in the suggested models. The test results are illustrated in table 5.

Table 5. Shapiro-Wilk normality test results

Index	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
W	0.96	0.98	0.97	0.96	0.97	0.98	0.96
p-value	0.30	0.60	0.53	0.17	0.60	0.66	0.17

Source: Authors' own calculation

The evaluation of W values and their corresponding p-values across the seven models suggests that the data generally meet the assumptions of normality. W values, ranging from 0.96 to 0.98, are close to 1, indicating a likely normal distribution of residuals. While p-values vary, with some models showing strong evidence of normality (Models 2, 5 and 6), others exhibit marginal deviations (Models 4 and 7). However, all p-values remain above the conventional alpha level of 0.05, supporting the assumption of normality across the models.

Autocorrelation test

The study employs the Durbin-Watson test to detect to detect whether there is an autocorrelation problem in the model. The results of the Durbin-Watson test after inserting the lagged predictors are presented in the table 6.

Table 6. Durbin-Watson test results

Index	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
DW	1.99	1.61	1.50	1.92	2.02	1.96	2.01
p-value	0.19	0.006	0.009	0.12	0.16	0.18	0.16

Source: Authors' own calculation

The p-values of models (1), (4), (5), (6), and (7) are all higher than 0.05, indicating that the autocorrelation problem has been solved. Unfortunately, models (2) and (3) have p-values lower than 0.05, which imply that there is an autocorrelation issue in these models. The study will apply Generalized Least Squares (GLS) to solve this problem.

Homogeneity of variances

To examine the homogeneity of variances of the models, the study applies Breusch-Pagan test. Table 7 shows the test results.

At a significance level of α = 0.05, models (2) and (6) exhibit p-values exceeding the threshold, suggesting no strong evidence of heteroscedasticity. On the other hand, the other models have p-values that are lower than the threshold, indicating potential heteroscedasticity. To address this issue, Generalized Least Squares will be employed to estimate these models instead of OLS.

Table 7. Breusch-Pagan test results

Index	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
BP	18.56	14.07	16.75	14.50	20.43	8.05	19.51
df	6	10	6	7	7	6	7
p-value	0.005	0.17	0.01	0.04	0.005	0.23	0.007

Source: Authors' own calculation

Estimation results and Discussion

Table 8. Estimated results (FDI is the dependent variable)

Variable	Model (Dependent variable: FDI)						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Estimation	GLS	GLS	GLS	GLS	GLS	OLS	GLS
Intercept	-0.23 (4.59)	-2.77 (4.02)	-3.16 (3.58)	1.06 (4.32)	-1.39 (4.62)	-5.44 (3.14)	-1.14 (4.62)
lagFDI	0.82*** (0.10)	0.63*** (0.12)	0.72*** (0.09)	0.69*** (0.11)	0.83*** (0.10)	0.79*** (0.10)	0.81*** (0.10)
MS	0.17 (0.49)	0.49 (0.42)	0.48 (0.37)	0.10 (0.46)	0.29 (0.49)	0.68 (0.35)	0.17 (0.49)
NR	3.84* (1.84)	4.59 (2.35)	3.43 (1.76)	4.65* (1.77)	3.38* (1.61)	4.57* (2.15)	3.60* (1.68)
IFR	1.13* (0.55)			1.95** (0.65)	1.38* (0.58)		1.28** (0.58)
IFL	-0.22* (0.10)	-0.23* (0.10)	-0.22* (0.09)	-0.23* (0.10)	-0.23* (0.09)	-0.22* (0.10)	-0.24* (0.10)
TRADE	-0.57 (0.40)	-0.75 (0.49)	-0.38 (0.44)	-0.77* (0.37)	-0.73* (0.31)	-0.91* (0.38)	-0.60* (0.29)
WTO		0.54* (0.20)	0.50* (0.15)				
AFTA		0.49 (0.29)		0.64* (0.27)			
VJEPA		-0.17 (0.25)			-0.25 (0.19)		
VKFTA		0.55* (0.24)				0.40* (0.18)	
EVFTA		-0.06 (0.08)					-0.16 (0.18)
R-squared	0.98	0.99	0.98	0.98	0.98	0.98	0.98
Adjusted R-squared	0.98	0.98	0.97	0.98	0.98	0.98	0.98
F-statistic	257.54***	174.9***	226.88***	261.88***	226.28***	255***	219.61***

*: p-value < 0.05, **: p-value < 0.01, ***: p-value < 0.001

Source: Authors' own calculation

After addressing the defects of the proposed models, the study estimates them with OLS and GLS. The results of these estimates are shown in Table 8.

In Model 1, the GLS estimation demonstrates that lagged FDI (lagFDI) is a significant predictor of current FDI levels, with a strong positive coefficient (0.85, p-value <0.01). This indicates the persistence of FDI inflows, where past investments influence future trends. Additionally, the model reveals that natural resources (NR) and infrastructure (IFR) are significant and positively related to FDI, suggesting that countries with abundant natural resources and well-developed infrastructure are more attractive to foreign investors. Conversely, inflation (IFL) is negatively correlated with FDI, indicating that higher inflation rates may deter investment due to increased economic instability and uncertainty.

In subsequent models, lagFDI continued to exhibit a positive impact on FDI inflows, even in the presence of WTO and FTA factors. The high confidence levels (p-values < 0.001) associated with lagFDI further reinforce its significance as a predictor of current FDI. This finding supports the conclusions of Shukurov et al. (2016) regarding the importance of considering lagged FDI in models of FDI determinants.

NR emerged as a significant determinant of FDI in models (1), (4), (5), and (7). The positive coefficients in models (1) and (4) (4.12 and 4.74, respectively) emphasize the importance of natural resources in attracting foreign investment. These findings align with previous research by Asiedu (2006), Sichei & Kinyondo (2012), and Shukurov et al. (2016). However, the insignificance of NR in model (2) suggests that trade agreements and global integration may reduce the reliance on natural resources as a primary driver of FDI. These agreements can enhance market access, reduce trade barriers, and create a more stable and predictable investment environment, making other factors more influential in attracting foreign capital.

IFR is found to be a significant determinant of FDI in all models where it appeared, with consistently positive coefficients. This highlights the importance of infrastructure in attracting foreign investment. Better infrastructure can reduce operating costs and improve accessibility, making countries more attractive to investors. These results are consistent with prior research by Sánchez-Martín et al. (2014), Shukurov, Maitah, & Smutka (2016), and Ho, Vo, & Vu (2019).

IFL shows consistent significance with a negative coefficient in most models, suggesting that higher inflation rates may deter FDI. Countries with high inflation rates are likely to experience reduced capital inflows due to increased macroeconomic risks. High inflation can create uncertainty for investors, leading to a decrease in their confidence and willingness to invest in such countries. These findings are compatible with earlier studies by Shukurov, Maitah, & Smutka (2016), Hong & Ali (2020), and Mehak & Waqas (2023), which have also identified the negative impact of inflation on FDI.

Trade openness (TRADE) exhibited varying levels of significance across the models, with a negative impact in several cases. These findings similar to those of previous research by Hintošová et al. (2018) and Ho, Vo, & Vu (2019). The negative impact of TRADE on FDI, within the context of an FTA, could be attributed to several factors. The negative impact of trade openness on FDI may be attributed to several factors, including a substitution effect where firms prioritize exports over FDI due to reduced trade barriers, market saturation in open economies, increased domestic competition, and regulatory environments favoring trade over direct investment. Furthermore, while Vietnam has been an open economy since 1986, some developed countries, including major economies like the United States, have not fully recognized it as a perfect market economy. This perception may limit the attractiveness of Vietnam as a destination for FDI. To enhance its appeal to foreign investors, Vietnam should consider implementing appropriate trade openness measures.

By strategically opening its market, Vietnam can create a more favorable environment for FDI, leading to increased inflows and long-term economic benefits (Ngo et al., 2020).

Market size (MS) was found to be consistently insignificant across all models, indicating that it is not a critical determinant of FDI in this context. This finding contradicts previous research (Pehlivan, 2019; Ngo et al., 2020; Iweze, Akinsola, & Olanrewaju, 2020; Çene & Karaman, 2023), which identified a positive relationship between market size and FDI flows. The presence of FTAs may have leveled the playing field across markets, diminishing the relevance of GDP as investors gain similar market access regardless of the host country's size.

The analysis reveals that WTO, AFTA, and VKFTA significantly influence FDI, underscoring their importance in attracting foreign investment. WTO membership highlights the significance of global trade rules and standards in fostering investor confidence. In Model (2), WTO emerges as the most significant factor (0.88, p-value <0.001), with a substantial positive impact on FDI. This suggests that adherence to global trade norms and reduced trade barriers, as mandated by the WTO, create a more stable and predictable investment environment, attracting increased investor confidence. While WTO membership appears to be a key driver of FDI in this context, the specific impact of regional and bilateral trade agreements may vary depending on other factors. AFTA's positive impact suggests that regional integration within ASEAN boosts investment flows by reducing trade barriers and enhancing market access. The significance of VKFTA emphasizes the role of bilateral agreements in creating favorable conditions for FDI. On the other hand, VJEPA and EVFTA show insignificant signs.

Conclusion

This study attempts to examine the determinants of FDI in the context of global integration. It reveals that past FDI, infrastructure development, natural resources, and inflation are key determinants of FDI in the examined context. Lagged FDI consistently shows a strong positive influence across all models, highlighting the importance of existing investments in attracting further FDI. Additionally, infrastructure and natural resources positively impact FDI, with significant coefficients in various models. Conversely, inflation shows a negative impact, indicating that macroeconomic instability deters foreign investments. Interestingly, while trade openness and market size were expected to influence FDI, they did not show consistent significance, suggesting that other factors play a more pivotal role. The significance of WTO membership, particularly in the model including trade agreements, underscores the importance of global trade norms and the reduction of trade barriers in attracting FDI.

While this study offers valuable insights, it has limitations that warrant attention in future research. The relatively small dataset may affect the robustness and generalizability of the findings. The insignificance of market size despite its theoretical importance suggests that the dataset may not fully capture the complexities of this relationship. Additionally, the high R-squared and F-statistic values, while indicative of a good model fit, may be influenced by model complexity or small sample size. Future research should consider expanding the dataset to include a larger and more diverse sample. Exploring alternative specifications or methods, such as panel data analysis, can help address potential issues and overfitting concerns. Additionally, the inclusion of new indicators, such as sector-specific FDI inflows, exchange rate volatility, and technological advancements, could provide a more comprehensive understanding of the factors influencing FDI. Furthermore, future studies should analyze the effects of international trends, such as shifting

global supply chains and geopolitical developments, on Vietnam's FDI landscape, as these external factors may have significant implications for the country's ability to attract foreign investment. Analyzing these in greater detail would yield valuable insights for both policymakers and investors.

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