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Exploring the Link Between Globalization and Economic Growth in Vietnam

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Abstract

This research sought to assess how globalization affects economic growth in Vietnam over the period 1995 to 2017, with a focus on the three key dimensions of globalization: political, economic, and social. Using the autoregressive distributed lag (ARDL) cointegration approach, the study identified a long-term relationship between globalization and economic growth, alongside other macroeconomic factors. The findings suggest that economic globalization had a significantly negative impact on growth, whereas political globalization exerted a positive impact. No substantial influence of social globalization on growth was found over the long term. In the short term, the three dimensions of globalization did not show any significant relationship with growth. Furthermore, the analysis showed that trade openness positively contributed to economic growth, while the ratio of foreign direct investment to GDP had a negative impact on growth in both the short and long term.

Keywords: Globalization, Openness, Economic growth, ARDL model.

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Introduction

The topic of economic growth has long been a subject of interest for both policymakers and researchers [1]. Despite extensive studies, the range of factors influencing economic growth continues to expand, with new contributors being incorporated into ongoing research. Among these, globalization has emerged as a central determinant in discussions of economic growth.

Globalization is a complex, multi-faceted concept, described as "an ongoing process of greater interdependence among countries and their citizens" [2]. The primary drivers of increased global interconnectedness include investment and trade liberalization, reductions in communication costs, technological innovations, entrepreneurial activities, and the rise of global social networks. Over recent decades, scholars have identified as many as 7 dimensions of globalization, with the political, economic, and social aspects being the most frequently studied. The impact of each of these three dimensions on economic growth varies depending on the specific context, study, and country in question.

In line with the global trend of increasing interconnectedness, Vietnam has made significant strides in integrating into the global economy since the late 1990s. The country became an active participant in organizations such as APEC, ASEAN, and ASEM in 1995, 1998, and 2001, respectively. Vietnam has continued to open its economy through enhanced trade relations with China, stronger bilateral ties with the United States, accession to the WTO in 2007, the signing of the CPTPP in 2018, and the ratification of the EVFTA in 2020, aiming to strengthen its position as a global competitor. Over the past 2 decades,

Vietnam has made notable progress in economic development [3], with an average annual growth rate of 6.69 percent from 1995 to 2019. In tandem with this economic growth, trade liberalization has significantly boosted international trade volumes, with trade openness rising from 74.72 percent in 1995 to 210.39 percent in 2019. Furthermore, foreign direct investment in Vietnam surged from 1.78 billion USD in 1995 to 16.12 billion USD in 2019, with both international trade and foreign direct investment serving as the primary links between Vietnam's economy and the global market.

Given the context of globalization, understanding its impact on economic growth is crucial. However, this relationship has not been thoroughly explored in Vietnam through past studies (e.g., Thoburn [4]; Jenkins [5]; Coxhead [6]), leaving a gap in the literature that this study aims to address. Thus, this research seeks to examine the effects of the three dimensions of globalization on Vietnam's economic development over the past few decades.

The structure of the paper is as follows: Section 2 reviews the existing literature on globalization and economic development. Section 3 outlines the econometric methods and data used in the analysis. Section 4 presents and discusses the empirical results. Finally, Section 5 concludes with some policy implications.

Literature review

The question of what drives the economic growth of nations remains a central issue in economics. Numerous theories have been proposed to identify the key factors influencing growth. A seminal contribution to growth theory was made by Solow [7] and Swan [8], who analyzed how three primary factors—capital accumulation, labor development, and technological progress—impact a nation's economic development. Solow's model has since been extended to include additional growth determinants, such as investment rates [9], human capital [10] institutional quality [11], foreign aid, technology imports, and the characteristics of both urban and rural populations [12, 13]. Among these, technological progress and innovation have become dominant discussions in the literature on growth. It is widely believed the technological gap between countries significantly influences their economic growth. Technological advances enhance productivity, which in turn increases per capita income and improves overall welfare.

Despite the development of various theories and empirical studies, the list of factors influencing growth is still not complete, and new contributors to economic growth continue to be identified. Innovative hypotheses and ideas are constantly emerging, and novel development factors are being proposed. In recent years, globalization has emerged as a key factor contributing to rapid changes in both living standards and the economic environments of countries, making it a critical element in contemporary growth research.

To investigate the connection between globalization and national growth, a variety of indices have been introduced to capture the different dimensions of globalization, such as KFP, KOF, CSRG, MGI, NGI, and the G-Index. Among these, the KOF globalization index is the most widely used. The KOF Index is considered one of the best measures of globalization for several reasons: (i) it evaluates the economic dimension of globalization by considering trade levels, foreign capital flows, and related restrictions, (ii) it offers a more comprehensive assessment of the political and social dimensions of globalization than other indices, (iii) it covers a broader range of countries and spans a longer period, and (iv) it is updated annually. The index's components—economic, political, and social globalization—are scored on a scale from 0 to 100, where higher values reflect greater levels of globalization. The KOF Globalization Index, introduced by Dherer [14], has been used in numerous studies examining the relationship between globalization and growth.

Since the 1980s, the increasing trend of globalization has sparked a range of debates in the academic literature regarding its effects on economic growth. Theoretical research has provided conflicting views on the relationship between economic development and globalization. Some scholars argue that globalization positively contributes to economic growth, while others contend that it has adverse effects. Stiglitz [15] argued that globalization does not necessarily foster economic growth, particularly when it is poorly managed, and he highlighted its negative impact on job creation. He further suggested that globalization tends to benefit developed countries more than developing ones. On the other hand, Huh and Park [16] and Ali *et al.* [17] asserted that higher levels of globalization positively affect growth. Despite these contrasting theoretical perspectives, numerous empirical studies have examined the impact of globalization on the development of countries at varying stages of development.

The question of how globalization affects the economic development of countries is a widely debated issue in the literature. While there is broad consensus that globalization influences both developed and developing countries, there is no agreement on the exact nature of its effects. Different studies have shown that the three dimensions of globalization—economic, political, and social—have varying impacts on economic growth. Below are some key studies that examine these relationships.

Dreher [14] conducted an analysis of GDP per capita growth in 123 countries between 1970 and 2000. His findings indicated that globalization had a generally positive effect on economic growth, with social globalization and economics contributing positively. In contrast, political globalization had no significant effect on growth.

Zhuang and Koo [18] evaluated the influence of globalization on the economic development of 56 countries between 1991 and 2004. Their research, which applied generalized least squares estimation, found a strong positive relationship between development and economic globalization for all countries considered.

Siddiqa *et al.* [19] investigated the effect of globalization on growth in developing countries between 2003 and 2013. The study found that all three dimensions of globalization—economic, social, and political—positively influenced economic growth to a significant extent.

Rao [20] examined the effects of globalization on economic development in 21 African nations over 35 years (1970-2005). The study concluded that globalization had a positive impact on growth, with this effect being stronger than the influence of investment on economic development.

Nguea [21] analyzed the relationship between growth and economic globalization in the Central African Economic and Monetary Community (CEMAC) countries during the period from 1970 to 2015. His findings revealed a positive and significant impact of economic globalization on growth within these countries.

Villaverde and Maza [22] investigated whether globalization stimulates economic growth and whether convergence in globalization makes convergence in per capita income. They concluded that globalization plays a key role in development and encourages convergence in income levels.

Leitao [23] explored the connections between globalization, trade, and economic growth. His findings pointed out that globalization accelerates growth and foreign direct investment, with growth being positively correlated with political, economic, and cultural globalization.

Gurgul and Lach [24] studied ten Central and Eastern European countries from 1990 to 2009. They found evidence of a positive growth-stimulating effect of globalization, particularly in the economic and social dimensions, while political globalization did not show any significant impact on growth.

Ying *et al.* [25] employed the fully modified ordinary least squares technique to analyze the relationship between globalization and growth in ASEAN countries from 1970 to 2008. The results highlighted a strong positive effect of economic globalization on growth, while social globalization had no impact, and political globalization had a negative influence.

Kilic [26] examined data from 74 developing nations between 1981 and 2011 to assess how the three dimensions of globalization influenced growth. His findings indicated a positive effect of political and economic globalization on growth, while social globalization had no significant effect.

Suci [37] analyzed the impact of globalization on growth in six developing countries from 2006 to 2012. The study showed that the overall globalization index had a positive and significant effect on growth. Economic and political globalization were positively related to growth, while social globalization had no effect. Additionally, factors like government spending, infrastructure, inflation, and education quality were found to influence economic development.

Olimpia and Stela [28] focused on the impact of globalization on Romania's development from 1990 to 2013. Their econometric analysis indicated a positive link between GDP per capita growth and both the total globalization index and economic and political globalization, while social globalization was negatively correlated with development.

Kılıçarslan and Dumrul [29] examined Turkey's economic growth between 1980 and 2015 concerning globalization. They found that economic and social globalization had a positive impact on growth, whereas political globalization had a negative effect.

Ulucak [30] studied the effect of globalization on emerging economies from 1970 to 2014. The findings showed that both the overall KOF globalization index and its social dimensions and economic positively influenced growth, while political globalization had a negative impact.

Titalessy [31] explored the influence of globalization on the economic growth of Asia-Pacific countries between 2000 and 2014. His research found that economic and political globalization significantly boosted growth, while social globalization had a negative effect.

The question of what drives economic growth remains central in economic research, with many studies seeking to identify the factors influencing growth. Over time, several theories have emerged, each contributing to our understanding of economic growth. Solow [7] and Swan [8] introduced models that highlighted the importance of capital accumulation, labor force expansion, and technological advancement. These ideas have since been expanded to include other key factors, such as human capital [10], investment rates [9], foreign aid, and institutional quality [11], as well as technology transfer and demographic characteristics [12, 13]. Technological innovation has been particularly emphasized, as it boosts productivity, increases income levels, and enhances overall welfare.

However, despite the numerous theories developed, the search for the main determinants of growth continues. In recent years, globalization has emerged as a central factor influencing economic development. The concept of globalization, with its multiple facets, has gained attention in growth studies due to its significant role in shaping the economic landscapes of countries. Researchers have proposed various indices to measure globalization, including KFP, KOF, and G-Index, with the KOF Globalization Index being the most widely used due to its comprehensive measurement of economic, social, and political globalization. The index's widespread use is attributed to its ability to account for trade volumes, foreign investments, and other critical factors, while also offering an extensive timeframe for data comparison.

Despite its importance, the relationship between globalization and economic growth remains a subject of debate. While some scholars argue that globalization fosters economic growth, others believe that it can have detrimental effects. For example, Stiglitz [15] suggests that globalization may hinder growth if not properly managed, particularly in developing countries. On the other hand, researchers like Huh and Park [16] and Ali *et al.* [17] emphasize the positive influence of globalization on growth, particularly when it leads to higher integration into the global economy. This ongoing debate underscores the need for more empirical studies to better understand the complexities of globalization's impact.

Empirical research on globalization's effects on growth is mixed, with various studies producing differing results depending on the regions and periods considered. For instance, Dreher [14] found that globalization contributed positively to GDP growth in 123 countries between 1970 and 2000, though the impact was more pronounced for economic and social dimensions than for political globalization. In contrast, studies like those by Zhuang and Koo [18] and Siddiqa *et al.* [19] confirm that economic and social globalization generally have a positive impact on growth in developing countries, while political globalization's effect remains less clear.

Similarly, Rao [20] found that globalization's impact on economic development in 21 African countries between 1970 and 2005 was positive, with globalization having a more significant effect on growth than investment. Nguea [21] observed a positive and statistically significant link between economic globalization and growth in CEMAC countries from 1970 to 2015. Additionally, Villaverde and Maza [22] found that globalization plays a crucial role in fostering economic development and income convergence among nations. However, these findings are not universally applicable, as the effects of globalization vary across regions and contexts.

In the case of Vietnam, various studies have explored the effects of globalization on the economy. Thoburn [4] and Coxhead [6] examined the relationship between globalization and poverty, while Nguyen [32] focused on the impact of globalization on healthcare and employment. Studies by Jenkins [5], Nguyen and Fraser [33], and Le [34] also analyzed globalization's influence on higher education and employment. Despite these contributions, there is a notable lack of research specifically addressing the effects of the 3 dimensions of globalization on economic growth in Vietnam, a gap this study seeks to address.

Materials and Methods

For this study, the augmented neoclassical growth model, derived from Solow's framework, will be utilized as the foundational approach. Building on these principles, the model incorporates the KOF globalization index to assess the impact of the three dimensions of globalization on economic growth in Vietnam. The model is specified as follows:

$$LGDP = f(LK.LL.EGI.PGI.SGI.FDI.OPEN) \quad (1)$$

This study uses the natural logarithm of GDP (LGDP) as the dependent variable to represent economic growth.

The independent variables in the model are described as follows:

Capital (LK) and labor (LL) are included in the model following the Solow framework.

Globalization variables are added to the model to examine their effect on economic growth. The globalization proxies are divided into three distinct indices: 1) the economic dimension, 2) the political dimension, and 3) the social dimension.

EGI (economic globalization index): This index measures the level of economic integration. It captures the flows of goods, services, capital, and information across borders, as well as the restrictions on international trade and investment. The expectation is that economic globalization has a positive and significant impact on economic growth.

PGI (political globalization index): This index evaluates the extent of a country's political integration. It measures the spread of government policies across borders, with the assumption that political globalization positively influences growth.

SGI (social globalization index): This index assesses a country's social integration. It reflects the diffusion of people, information, ideas, and cultural expressions [35]. Social globalization is categorized into three areas: personal contacts, information flows, and cultural proximity. It is expected that social globalization will not have a significant impact on economic growth.

FDI (foreign direct investment): Measured as a percentage of GDP, this variable is included to examine the impact of foreign investment on growth.

OPEN (trade openness): This is the ratio of total trade to GDP, indicating the extent of a country's engagement with global markets. According to Winters [36], trade openness promotes faster and more stable economic development.

To assess the impact of globalization on economic growth, the ARDL bound testing approach is employed. The long-term relationships between the variables are tested using a cointegration approach. In the ARDL model, the series do not need to be integrated at the same level, but they must not be integrated of order two or higher.

The ARDL approach is specified as follows:

$$\Delta LGDP_t = \beta_0 + \sum_{i=1}^{p} \beta_{0i} \Delta LGDP_{t-i} + \sum_{i=0}^{q_1} \beta_{1i} \Delta LK_{t-i} + \sum_{i=0}^{q_2} \beta_{2i} \Delta LL_{t-i} \quad (2)$$

$$+\sum_{i=0}^{q_3}\beta_{3i}\Delta LEGI_{t-i}+\sum_{i=0}^{q_4}\beta_{4i}\Delta LPGI_{t-i}+\sum_{i=0}^{q_5}\beta_{5i}\Delta LSGI_{t-i}$$
$$+\sum_{i=0}^{q_6}\beta_{6i}\Delta FDI_{t-i}+\sum_{i=0}^{q_7}\beta_{7i}\Delta OPEN_{t-i}+\theta_0 LGDP_{t-1}$$
$$+\theta_1 LK_{t-1}+\theta_2 LL_{t-1}+\theta_3 LEGI_{t-1}+\theta_4 LPGI_{t-1}$$
$$+\theta_5 LSGI_{t-1}+\theta_6 FDI_{t-1}+\theta_7 OPEN_{t-1}+u_t \quad (3.1)$$

In this model, θ_i (where i = 1, 2, ..., 7) and β_kj (where k = 1, 2, ..., 7) represent the long-term and short-term coefficients between each variable and economic growth, respectively. Δ denotes the first difference, β_0 is the constant term, and u_t is the error term.

The ARDL approach is used to examine the short-term and long-term relationships among the variables in three main steps. First, a hypothesis test is conducted to determine if a long-term relationship (cointegration) exists among the series. The null hypothesis H_0 assumes that there is no long-term relationship, i.e., θ_1 = θ_2 = θ_3 = θ_4 = θ_5 = θ_6 = θ_7 = 0. The alternative hypothesis H_1 argues that the long-term relationship does exist, with the assumption θ_1 ≠ θ_2 ≠ θ_3 ≠ θ_4 ≠ θ_5 ≠ θ_6 ≠ θ_7 ≠ 0. If the F-statistic value is lower than the critical lower limit, H_0 cannot be rejected, meaning the null hypothesis is accepted. Conversely, if the F-statistic is greater than the upper limit, H_1 is accepted. If the F-statistic falls between the two limits, no definitive conclusion can be made.

To determine the appropriate lag lengths for the variables in the model, the Akaike information criterion (AIC) is used. The assumed lag structure is (p.q_1.q_2.q_3.q_4.q_5.q_6.q_7), where p refers to the lag length of LGDP, and q_1, q_2, ..., q_7 correspond to the lags for the LK, LL, LEGI, LPGI, LSGI, FDI, and OPEN series, respectively.

Lastly, the error correction model is estimated using the optimal lag lengths identified in the previous step:

$$LGDP_t=\beta_0+\sum_{i=1}^{p}\beta_{0i}\Delta LGDP_{t-i}+\sum_{i=0}^{q_1}\beta_{1i}\Delta LK_{t-i}+\sum_{i=0}^{q_2}\beta_{2i}\Delta LL_{t-i}$$
$$+\sum_{i=0}^{q_3}\beta_{3i}\Delta LEGI_{t-i}+\sum_{i=0}^{q_4}\beta_{4i}\Delta LPGI_{t-i}+\sum_{i=0}^{q_5}\beta_{5i}\Delta LSGI_{t-i} \quad (3)$$
$$+\sum_{i=0}^{q_6}\beta_{6i}\Delta FDI_{t-i}+\sum_{i=0}^{q_7}\beta_{7i}\Delta OPEN_{t-i}+\mu ECM_{t-1}+u_t \quad (3.2)$$

In the equation above, β_kj (where k = 1, 2, ..., 7) represents the coefficients; ECM is the error correction term (ECT), and μ signifies the speed of adjustment. The expected value for the adjustment speed is between -1 and 0, and it should be statistically significant.

The data used to estimate the model is sourced from The World Bank Development Indicators (2020) and the KOF Index of Globalization (2020), covering the period from 1995 to 2017.

Results and Discussion

Vietnam's level of globalization, as indicated by the KOF globalization index, showed a substantial rise from 37.94 in 1995 to 64.5 in 2017. Among the 3 dimensions of globalization, political globalization demonstrated the highest level, with a consistent upward trend from 48.7 in 1995 to 74.4 in 2017. Economic globalization, although increasing more gradually, ranked second, moving from 45.6 in 1995 to 60.4 in 2017. Social globalization, which ranked third, experienced a steady rise from 17.5 in 1995 to 58.6 in 2017 (**Figure 1**). In 2017, Vietnam was ranked 83rd out of 203 countries in terms of globalization. Within the three dimensions, Vietnam stood at 95th for economic globalization, 76th for political globalization, and 132nd for social globalization. This suggests that Vietnam has achieved considerable integration into the global sphere economically, politically, and socially, with a notable emphasis on political integration over the economic and social aspects.

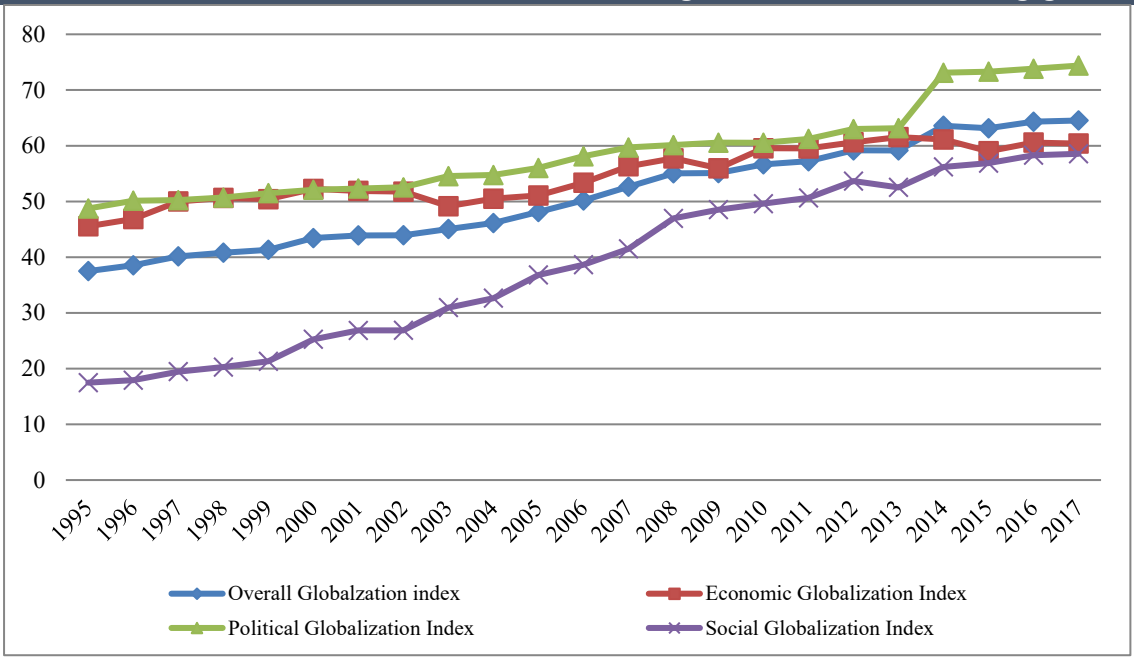


Figure 1. Change in globalization levels of Vietnam over time.

To examine the influence of globalization's three dimensions on Vietnam's economic growth, the empirical estimation followed these outlined procedures:

Unit Root Test for Stationarity of Variables

The augmented dickey-fuller (ADF) test was first applied to assess the stationarity of the variables at their levels, followed by testing the stationarity at their first differences. The results from both the level and first difference tests are provided in **Table 1**.

Table 1. Unit root test results

Variable	Level	1st difference	Test outcome
	t-statistic	Probability	t-statistic
LGDP	-0.035202	0.9447	-3.781778
LK	-1.8409932	0.5587	-3.803527
LL	-4.492081	0.0020	
LEGI	-1.646513	0.4432	-4.663331
LPGI	0.207871	0.9667	-5.265614
LSGI	-2.526478	0.1237	-4.723687
FDI	-0.891348	0.7715	-3.621300
OPEN	1.411575	0.9983	-4.232177

Note: The ADF test performed was with an intercept and without trend.

Based on the ADF results, LL is stationary at the level, indicating it is I(0), while all other variables—LGDP, LK, LEGI, LPGI, LSGI, FDI, and OPEN—are stationary at the first difference (I(1)). Since none of these variables are integrated at the second difference or higher, the ARDL boundary test can be employed to check for co-integration.

Selecting the Lag Length

After completing the unit root test, the ARDL model was chosen based on the AIC. From the list of the top 20 models with the lowest AIC scores, the ARDL (1, 0, 0, 1, 1, 0, 0, 1) model was identified as the best fit.

Co-integration Test Results

The results of the ARDL Bound test are presented in **Table 2**. The F-statistic of 5.3766 surpasses the upper bound of I(1) at all significance levels, leading to the rejection of the null hypothesis that there is no long-term relationship. This confirms the existence of a long-term equilibrium relationship between LGDP and the explanatory variables, including LK, LL, LEGI, LPGI, LSGI, FDI, and OPEN.

Table 2. Bound test results

Test statistic	Critical value bounds
k	F-statistic
7	5.376602

The long-run coefficient estimation results from the ARDL (1, 0, 0, 1, 1, 0, 0, 1) model are provided in **Table 3**. The coefficient for LEGI, which reflects economic globalization, is statistically significant, indicating that economic globalization plays a critical role in influencing growth. The value of -0.365047 implies that a 1% increase in the level of economic globalization is associated with a 0.36% reduction in economic growth, holding other factors constant. Consequently, economic globalization appears to exert a negative influence on growth in the long run. This finding contradicts the majority of prior research [25-29, 37-41], which typically suggests a positive relationship between economic globalization and growth. It also contrasts with Majidi's [42] findings, which suggested no significant effect of economic globalization on growth. This discrepancy may be due to differences in the sample countries, periods, and control variables used across studies. A further explanation could lie in the vulnerability of developing countries like Vietnam, where external factors might overshadow domestic economic conditions. Some studies have noted that the full positive effects of economic globalization on growth tend to be delayed, as investment flows, trade agreements, and other factors take time to materialize. Thus, while the immediate effect might be negative, a positive impact might arise over time with a lag.

The estimated coefficient for LPGI, which represents political globalization, is positive and statistically significant, showing that political globalization has a beneficial long-term effect on growth. This result is consistent with the findings of Kilic [26], Suci [27], and Olimpia and Stela [28], who observed a positive influence of political globalization in developing countries. However, this differs from the conclusions of Majidi [42] and Kılıçarslan and Dumrul [29], who found a negative relationship between political globalization and economic growth.

In contrast, the coefficient for LSGI, which indicates social globalization, is statistically insignificant, suggesting that social globalization does not have a measurable effect on growth in Vietnam. This aligns with the findings of Suci [27] and Monica *et al.* [43] but is inconsistent with the results of Ying *et al.* [25], Kilic [26], Olimpia and Stela [28], and Kılıçarslan and Dumrul [29], who found a positive relationship between social globalization and economic growth.

Table 3. Long-term coefficients of ARDL (1, 0, 0, 1, 1, 0, 0, 1) model dependent variable: LGDP

Variables	Coefficient	Std.	t-Statistic	Prob.
OPEN	0.224836	0.029111	7.723337	0.0000
LK	0.293536	0.047932	6.124026	0.0001
FDI	-1.469048	0.294945	-4.980747	0.0006
LL	0.612902	0.318529	1.924164	0.0832
LEGI	-0.365047	0.144070	-2.533821	0.0297
LPGI	0.183496	0.095926	1.912888	0.0848
LSGI	0.100805	0.058190	1.732348	0.1139
C	-7.063419	5.330452	-1.325107	0.2146

The statistically significant long-term coefficients of 0.293536 for the LK series and 0.612902 for the LL series align with economic theory, reinforcing the expected positive relationships.

Regarding foreign direct investment (FDI), the results indicate a negative impact on economic growth. The coefficient for FDI is estimated at -1.469048, and it is statistically significant at the 1% level. This means that a 1% increase in the ratio of foreign direct investment to GDP is associated with a decrease in growth by 1.47%, all else being equal. While foreign direct investment can contribute to GDP growth, it does not necessarily foster overall development in Vietnam.

Trade openness is another critical factor, significantly promoting economic growth in the long term. With a partial elasticity of 0.224836, this suggests that a 1% increase in trade openness leads to a 0.22% rise in growth, holding other factors constant. Economic theory suggests that business openness enhances growth by fostering technological advancements and intensifying competition, both domestically and internationally. These findings align with those of Harrison [44], who demonstrated a link between greater trade openness and economic growth and corroborate the views of Wacziarg [45], Vamvakidis [46], Lee *et al.* [47], Chang *et al.* [48], and Khyade [49], all of whom found similar positive effects of trade openness on development.

Short-run Coefficients of the Error Correction Model

The short-term estimation results, as presented in **Table 4**, show that the coefficients of the 3 dimensions of globalization are statistically insignificant. This suggests that, in the short run, there is no meaningful relationship between globalization and growth in Vietnam.

Table 4. Error correction representation of the ARDL model

Variables	Dependent variable D (LGDP)	Coefficient	Std. error	t-statistic	Prob.
D (LK)		0.158501	0.050344	3.148334	0.0104
D (LL)		0.330949	0.181581	1.822593	0.0984
D (LEGI)		-0.067479	0.043375	-1.555719	0.1508

D (LPGI)		-0.045862	0.045055	-1.017902	0.3327
D (LSGI)		0.054432	0.031287	1.739752	0.1125
D (FDI)		-0.793242	0.267006	-2.970875	0.0140
D (OPEN)		0.091681	0.021371	4.289874	0.0016
ECT (-1)	Error correction term	-0.539970	0.125739	-4.294377	0.0016

The findings presented in **Table 4** indicate that the coefficient for the ECT is negative (-0.539970) and statistically significant, aligning with expectations. This result confirms the presence of a long-term equilibrium relationship between the explanatory and economic growth variables. The ECT coefficient suggests that the speed of adjustment between the short-run dynamics and long-run equilibrium is 54%, meaning that roughly 54% of the short-term deviations from long-term growth are corrected annually.

Additionally, the coefficients for capital investment and labor are statistically significant at the 10% level and exhibit positive values, as anticipated. The results further reveal that foreign direct investment has a negative effect on growth, while trade openness has a positive impact on short-term growth.

Diagnostic and Stability Tests on the Error Correction Model

The adjusted R^2 value for the ECM model shows that over 87.7% of the variation in LGDP can be explained by changes in the levels of globalization and other explanatory variables in the model. The diagnostic tests presented in Table 5 confirm that the ARDL (1, 0, 0, 1, 1, 0, 0, 1) model successfully avoids issues with functional form misspecification, as evidenced by a p-value of 0.9120. The results of the Breusch-Pagan-Godfrey test indicate that there is no problem with heteroscedasticity, with a p-value of 0.4602, suggesting constant error term variance. Moreover, the Breusch-Godfrey serial correlation LM test results show that the model would not suffer from autocorrelation, with a p-value of 0.6956. Finally, the normality test yields a probability greater than 5%, confirming that the model's residuals follow a normal distribution.

The findings presented in Table 4 indicate that the ECT coefficient is negative (-0.539970) and statistically significant, which is consistent with expectations. This suggests a long-term equilibrium relationship between economic growth and the explanatory variables. The coefficient for ECT indicates that the adjustment rate between short-term fluctuations and long-term equilibrium is 54%, meaning that approximately 54% of the deviation from long-term growth is corrected annually.

Furthermore, the coefficients for capital investment and labor are statistically significant at the 10% level and have positive values, which align with expectations. The results also indicate that foreign direct investment negatively affects growth, while trade openness positively influences short-term growth.

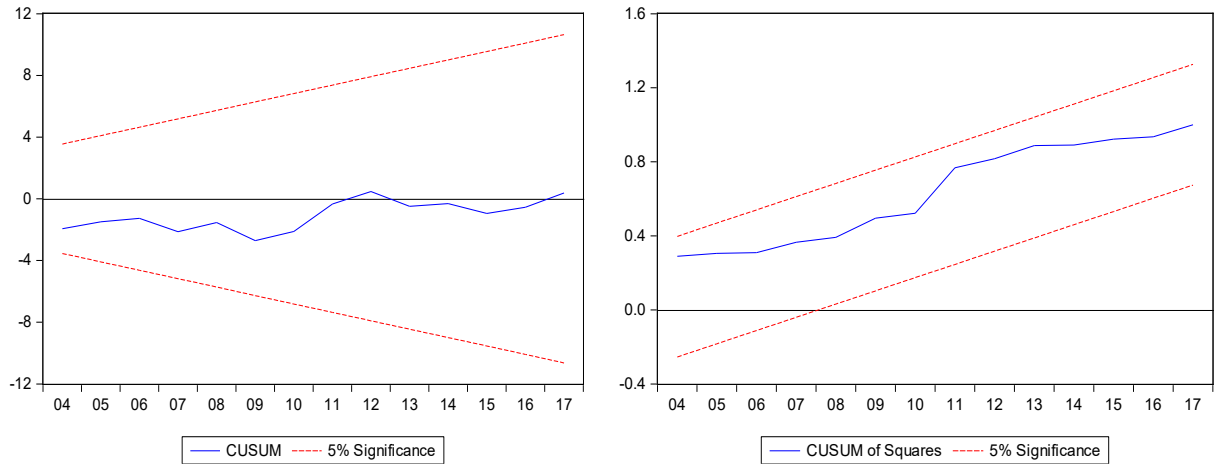
Diagnostic and Stability Tests on the Error Correction Model

The adjusted R^2 value for the ECM model suggests that over 87.7% of the variation in LGDP can be explained by changes in the levels of globalization and other explanatory variables in the model. The diagnostic tests presented in Table 5 confirm that the ARDL (1, 0, 0, 1, 1, 0, 0, 1) model passes several important checks. The test for functional form misspecification shows no issues with the model (P-value = 0.9120). The Breusch-Pagan-Godfrey test confirms the absence of heteroscedasticity, with a p-value of 0.4602, indicating constant error term variance. Additionally, the Breusch-Godfrey serial correlation LM test shows that there is no autocorrelation problem (P-value = 0.6956). Finally, the normality test indicates that the residuals are normally distributed, as the p-value is greater than 5%, confirming the model's stability.

Table 5. Results of diagnostic tests

Types of test	Test statistic	Prob.
Serial correlation	F-statistic = 0.374256	0.6956
Heteroscedasticity	F-statistic = 1.032290	0.4602
Functional form	F-statistic = 0.012713	0.9120
Normality	Jarque-Bera = 0.476864	0.787862

Figures 2a and **2b** illustrate that the statistics for the cumulative sum of recursive residuals and the cumulative sum of squares of recursive residuals stay within the 5% confidence interval's critical bands, indicating no issues with parameter instability. These findings, coupled with the diagnostic and stability test results, affirm the model's stability and its robust fit. As a result, the short-run and long-run coefficient estimates are deemed reliable.



a) b)

Figure 2. a) The plot of the cumulative sum of recursive residuals, b) The plot of the cumulative sum of squares of recursive residuals

Conclusion

This study aimed to assess the influence of globalization on Vietnam's development over the period 1995-2017. Globalization was analyzed using the economic, political, and social dimensions of the KOF globalization index. The empirical analysis employed the ARDL approach. Initially, the ARDL boundary test was conducted to determine whether a long-term relationship exists among the variables of interest. Subsequently, the short-run and long-run relationships were evaluated using the error correction model of the ARDL framework.

The findings revealed that economic globalization has a detrimental effect on growth, while political globalization positively influences growth. Additionally, social globalization showed no significant impact on growth in the long run. In the short term, no notable relationship was found between the three dimensions of globalization and economic growth. The results also highlighted that the ratio of foreign direct investment to GDP negatively affects growth, whereas trade openness positively impacts growth both in the short and long term.

Despite Vietnam’s integration into global political, economic, and social systems for over three decades, the relatively low level of globalization suggests there is room for further advancement, particularly in the political, economic, and social spheres. Based on the study's findings, Vietnam should focus on increasing political globalization to foster higher economic growth. Additionally, encouraging trade openness can drive significant growth. For sustained economic growth and to maximize the benefits of globalization, Vietnam needs to implement effective policies that support international trade and enhance human capital.

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