INVESTMENT & ECONOMIC GROWTH: A NEXUS BETWEEN DOMESTIC INVESTMENT AND FOREIGN DIRECT INVESTMENT IN VIETNAM

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—Abstract—
In the context of the Vietnamese economy, this research examines the effect of investment on long- and short-term economic growth. The study utilized numerous techniques to evaluate the association, including Granger causality, Johansen cointegration, and Vector Error Correction Model (VECM). Financial data from the World Bank and the General Statistics Office are used to compile data from 2000 to
According to empirical evidence, domestic and foreign direct investment positively impact long-term economic growth. However, foreign direct investment has short-term crowding-out consequences before the emergence of economic spillover effects. Meanwhile, domestic investment plays a crucial role in both the short- and long-term promotion of economic growth. Our research indicates that investment activities should be concentrated, but foreign direct investment should only play a supporting role for capital and technology; meanwhile, the government is encouraged to promote domestic investment development by implementing regulations.

**Keywords:** Economic growth, Domestic Investment, Foreign Direct Investment, VECM, Vietnam.

1. **INTRODUCTION**

Investment's contribution to economic growth cannot be overlooked. Due to the poor infrastructure and lack of distinguishing characteristics, emerging economies invariably need considerable continuous investments. However, it is sad that emerging economies have limited investment resource options. Moreover, economic crises have caused the economy of nations to shrink, resulting in financial restructuring. Investments such as domestic investment (DI) and foreign direct investment (FDI) are crucial to economic progress in this regard (Bai et al., 2022; Chien et al., 2021; Solow, 1956). Multiple benefits accumulate from foreign direct investment, including development prospects, technological transfer, and spillover effects from industrialized countries to host countries (Makki et al., 2004; Phung et al., 2019). Previously, Easterly et al. (1994) suggested that technology transfer occurs via four models: transfer of technology and new ideas, import of high technology, application of foreign technology, and human resource qualifications.

On the other hand, DI is gaining increasing attention because of its contribution to the economic structure of countries. Firebaugh (1992) stated that DI had great potential for fostering partnerships inside the domestic industry. We cannot refute the reality that domestic investment is one of the most effective strategies for accelerating economic growth. Additionally, these investments make it easier to maintain productivity, development, exports, and capital formation (Adams, 2009; Chien, 2022b; Omri, 2014). Thus, DI and FDI are essential for economic growth (Chien et al., 2022; Liu, Lan, et al., 2022; Marcin, 2008; Szkorupová, 2015).

Existing research indicates a positive correlation between FDI and economic expansion. Makki et al. (2004), as cited in Ito et al. (2007), explored the relationship between investment and economic growth in the Korean setting. The authors stated that a consistent stream of FDI may assist the economy and preserve the country from the financial crisis of the 1990s; however, a more significant proportion of FDI could give foreign entities control, which is detrimental to the domestic economy. Ito et al. (2007)
investigate the link mentioned above in Taiwan. It was assumed that oscillations in FDI may forecast fluctuations in economic growth. Hence this was the primary focus of the study. The study concluded that foreign investors are keenly interested in GDP growth and that FDI contributed to this growth not by increasing capital accumulation but by facilitating the diffusion of technology (Phung et al., 2019).

In contrast, earlier empirical studies demonstrated that the Impact of FDI on economies varied according to the host country's capacity to absorb its advantages. The study also states that FDI inflows exert pressure on domestic companies to develop their technological capability to boost production efficiency. In addition, FDI-based initiatives enhance domestic workers' management competence and qualifications, establishing an efficient route for beneficial spillover effects (Chien, 2022b; Marcin, 2008; Wang, 2010). On the other hand, FDI competition also hinders the expansion of domestic companies. Markusen et al. (1999) suggested that the arrival of foreign enterprises decreased the earnings of indigenous firms, hence causing a drop in their operations.

Similarly, Aitken et al. (1999) suggested that the increase in the average cost of domestic firms due to the presence of foreign firms created a negative spillover effect. Consequently, it could result in a significant loss of market share, requiring them to operate at a less efficient scale and thereby increasing their average cost. Studies by Szkorupová (2015) and Epstein et al. (2002) demonstrated that FDI could have a long-term crowding-out effect on DI and cause the demise of domestic enterprises.

Due to the disagreement concerning the roles of FDI and DI in economic growth, this article examines them within the context of Vietnam's economy. The present study applies the VECM approach to assess their links and contributions to the economic progress of Vietnam. This is essential because the mechanism of integration and openness that leads to an increase in foreign investment can affect local investment and economic growth. Therefore, the significance and relevance of this topic must be investigated. The study will contribute to the existing body of knowledge in two ways: First, the study provides empirical information regarding the benefits of investment in economic expansion. In addition, although many studies acknowledge that FDI encourages capital flows and technology, which can boost economic growth, its effects on domestic investment remain disputed. These indications lead to the paper's second contribution, in which the authors analyze the long-term impacts of FDI on DI.

2. VIETNAMESE BACKGROUND

After the crucial reforms in 1986 and entering the WTO in 2007, Vietnam's economy has grown substantially. During the decade of 2000, the Vietnamese economy developed rapidly, averaging 6.8% each year, and 7.02 % in 2019. However, Vietnam's economy was sluggish from 1990 to 1999 and from 2018 to 2019 due to the Asian financial crisis.
and global recession. However, the nation recovered in 2000, and growth has since accelerated. The country now belongs to the club of high-growth nations and is a favorite target for foreign direct investment. According to the General Statistics Office (GSO), Vietnam had more than 33,900 FDI projects with a total registered capital of 454 billion USD as of 2019. Notably, the FDI growth rate frequently outpaces the GDP growth rate of Vietnam, whereas FDI's contribution to GDP climbed from 2% in 1992 to 12% in 2000 to 25.8% in 2010. FDI's contribution to GDP fluctuated around 23% throughout the period 2011-2019. Figure 1 depicts the total investment capital of DI and FDI and economic growth in Vietnam.

The changes in FDI inflow are directly tied to the economic cycle of Vietnam. During the period 2001-2005, the annual growth rate of GDP was 7.5%, and the annual contribution of FDI capital to GDP was 14.6%. From 2008 to 2009, the annual growth rate of GDP was 5.78 percent, while the annual contribution of FDI capital to GDP was 18.14 percent. The economic cycle with an upward tendency in 2000-2007 coincided with high FDI inflows, whereas economic downturns in 1997-1998 and 2008-2009 coincided with low FDI inflows.

![Figure 1. Graphical Representation of GDP-DI-FDI (2000-2018)](source: www.gso.gov.vn)

Observation suggests that there may be a relationship between FDI and economic growth. Comparatively, the growth rate of DI from 2000 to 2014 was larger than that of FDI, hitting 59.9% in 2001 and declining to 33.3% in 2008. In 2017 and 2018, the proportion of DI to GDP reached 35.7% and 33.3%, respectively, whereas FDI's contribution to GDP averaged 23% annually from 2016 to 2018. Figure 1 demonstrates that FDI and DI may exhibit opposing patterns. This raises the question of whether these connections are the product of direct mutual causality or long-term negative causality between FDI and DI. Vietnam's economic growth as a whole has undergone extraordinary expansion. In addition, the country's foreign investment has made remarkable progress. FDI and DI are crucial for countries like Vietnam, which have
suffered severely from a war. FDI and DI are crucial because they help alleviate poverty and modernize the country. In addition, international investors are interested in the pace of economic growth. Although the efficiency of FDI is disputed and contradictory opinions exist, in the context of Vietnam, it plays a crucial role that cannot be denied.

3. LITERATURE REVIEW

From a theoretical standpoint, neoclassical theory demonstrates that an economy's output depends on multiple elements, including labor quantity and human, physical, and technological capital. From this perspective, we can conclude that FDI and DI are both positive and essential indicators of economic growth, therefore meeting the criterion (De Mello Jr, 1997; Firebaugh, 1992; Tan et al., 2022). Romer (1993) asserts that FDI and DI are crucial for creating physical infrastructure, consequently boosting the FDI absorption capacity. However, under diminishing margins, economic development slows when foreign direct investment (FDI) is absorbed in greater quantities and ceases when the economy achieves stability. Since capital flows are rare in developing nations, the neoclassical theory of economic growth suggests that the returns on capital flows in impoverished countries should be greater than in affluent countries. As a result, FDI inflows from wealthy nations go to developing nations and cease until all nations are equally rich. This neoclassical prediction means that the influence of FDI is restricted to its short-run contribution to output growth, with no effect on the long-term growth rate. In addition, they propose that FDI and DI have a symbiotic relationship (Liu, Lan, et al., 2022; Szkorupová, 2015).

In the meantime, the endogenous growth theory demonstrates that FDI's spillover effects (i.e., technology transfers and knowledge spillovers) can be converted into productivity gains and, consequently, that long-term economic growth increases (Abdul Hamid et al., 2020; Barro et al., 1997; Grossman et al., 1991; Sadiq, Ngo, et al., 2022). Endogenous growth models, distinguished by consistent returns to a set of endogenous production sources, view technological change as endogenous instead of exogenous. Therefore, technological advancement is a significant factor in long-term economic growth (Romer, 1993; Sadiq, Amayri, et al., 2022; Sadiq, Ou, et al., 2022). In this regard, FDI serves as a conduit for the diffusion of new ideas and technology and the application of high-tech products from advanced economies (Kumar et al., 2005; Liu, Yin, et al., 2022). FDI not only diversifies the capital structure of recipients but also contributes to external factors such as technology and information dissemination (Blomström et al., 1998; Khattak et al., 2021), enhancing total factor productivity (Nath, 2009). In addition, Markusen et al. (1999) assert that FDI influences the host economy through two channels: establishing market rivalry through which multinational corporations might displace local firms and creating a cohesive effect through which multinationals can complement local firms.

The relationship between foreign direct investment (FDI) and economic growth is also examined by Moosa (2002), who focuses primarily on the host country's capacity to
absorb and reallocate foreign capital for optimal benefit. The study demonstrated a positive link between these variables when excess resources might be interested and efficiency increased by reallocation. That is, it will be beneficial if FDI succeeds in increasing the productivity of domestically reproduced sources by reallocating them from low-productivity sectors to high-productivity sectors. Through information dissemination, FDI can also enhance the efficiency of indigenous companies. These knowledge spillovers result from the transfer of human capital through FDI. Coe et al. (1997) highlight the significance of R&D spillovers in growth models and view FDI as a technology transfer channel. Consequently, the spillover of worldwide R&D resulting from investment is a crucial aspect of the economic process. However, even though FDI is essential for developing economies in particular, many economists claim that the absence of suitable infrastructure and institutional structure still presents challenges for countries, reducing the likelihood that they would gain from FDI (Phung et al., 2019; Tan et al., 2022). According to Erhieyovwe et al. (2013), FDI increases investment and narrows the gap between savings and investment. Foreign direct investment is also the key to global economic integration, bringing financial stability, fostering economic growth, and enhancing social welfare (Borensztein et al., 1998; Sadiq, Amayri, et al., 2022; Linhai Zhao et al., 2022).

However, the consequences of FDI on other economic entities are debatable in the context of its purported purpose. This FDI may affect the human capital level, the financial system, and the quality of native enterprises (Fu et al., 2011; Phung et al., 2019; Linhao Zhao et al., 2021). Ang (2007) investigated the long-term relationship between private, public, and FDI in the Malaysian setting from 1965 to 2003. Using the multivariate cointegration technique, the results demonstrate that governmental investment and FDI are complementary rather than competitive with private domestic investment. Also, in the example of Malaysia, Lean et al. (2011) utilized VAR and VECM techniques to reveal the ambiguous influence of foreign direct inflow on domestic investment. In the host country, FDI is a complement (crowd-in) rather than a substitute (crowd-out) for domestic investment. Concerning the crowding-in effect of FDI inflows on DI, Al-Sadiq (2013) concludes that a one-percentage-point rise in FDI inflows leads to a nine-percentage-point increase in DI in 91 developing countries between 1970 and 2000. However, the crowding-out impacts of FDI activities on domestic investment are discovered, and this is likely to impede growth, raise unemployment, and exacerbate poverty. Adams (2009) similarly finds that FDI has an early negative effect on domestic investment while positively connected with Sub-Saharan Africa’s economic growth from 1990 to 2003. On the one hand, Multinational Firms’ (MFs) superior managerial, financial, and technological advantages enable them to establish monopoly or monopoly-like positions and destroy domestic competition. Thus, FDI may exacerbate business challenges for domestic enterprises (Haroon et al., 2021; Helpman et al., 2004; Markusen et al., 1999). In contrast, when MFs concentrate on exploiting natural resources, the real exchange rate rises, resulting in a decline in
economic competitiveness described as "Dutch disease" (Ali et al., 2022; Bresser-Pereira, 2008; Chien, 2022a). Institutionally, the records demonstrate that MNFs contribute to corruption in developing nations' licensing and operation of local markets. Thus, FDI reinforces inadequate governance to reduce domestic investment (Ainou et al., 2022; Kamarudin et al., 2021). Similarly, Pham (2016) asserts that FDI has the potential to displace domestic investment and reduce the market share of Vietnamese-owned businesses. However, the effect could be favorable if FDI flows into the industry in question are substantial. Inconsistencies in the function of FDI in economic growth and other economic entities necessitate further research, particularly in economically distinct nations. As a scientific response, this study continues to seek evidence for the role of FDI in Vietnam's economic setting.

4. METHODOLOGY AND DATA

In this study, economic growth and DI are potentially related to FDI inflows. GDP per capita growth rate (GDPCG), the proportion of foreign direct investment to GDP (FDIR), and the proportion of domestic investment to GDP are the variables in this study (DIR). Vietnam's figures for the years 2000 to 2019 are derived from the World Bank database and the General Statistics Office. The research shows how FDI inflows influence other variables in cointegrated relationships. The fundamental model was used to examine FDIR and DIR on GDPCG, which are represented as follows:

\[ GDPCG = f(DIR, FDIR) \] (1)

The VECM method of Pesaran et al. (2000) was utilized in this paper. This method is ideal for investigating small samples' long- and short-term associations between variables. This strategy also mitigates the influence of autocorrelation (Zaidi et al., 2018). In addition, VECM can provide both short- and long-term associations between constructs. The VECM model also supports the testing of variance decomposition and impulse response functions. ADF and PP stationarity tests will be used to determine the stationarity of variables in the current investigation. To proceed with cointegration analysis, all constructs must be stationary at the I(1) levels. As previously stated, the Augmented Dickey-Fuller (ADF) and Phillipps-Perrons (PP) unit root tests are used to determine the stationarity properties of long-run association time series structures. Below is the ADF expression for the test:

\[ d(Y_t) = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{j=1}^{k} d_j \Delta Y_{t-j} + \varepsilon_t \] (2)

Also, PP general form is established by the following expression

\[ \Delta Y_t = \alpha_0 + \alpha_1 \Delta Y_{t-1} + \varepsilon_t \] (3)

Through ADF and PP, we could determine whether the estimated coefficients contain the unit root. A Pairwise Granger causality test and Johansen's procedure will evaluate
the cointegration between variables in a subsequent phase. Once this test validates the existence of cointegration, we will proceed to the next phase, which involves estimating the long-term equilibrium relationship using VECM. This model equation is depicted from model of Szkorupová (2015) as follows:

$$\Delta GDPCG_t = \alpha_{12} + \alpha_{13} \begin{bmatrix} \gamma \\ \mu \end{bmatrix} GDPCG_{t-i} + \sum_{i=1}^{n} \beta_{11i} \Delta GDPCG_{t-i} + \sum_{j=1}^{m} \beta_{12j} \Delta FDIR_{t-j} + \sum_{k=1}^{q} \beta_{13q} \Delta DIR_{t-k} + \varepsilon_t$$

where $\alpha_{12}$ is an unrestricted intercept, $\sum_{i=1}^{n} \beta_{11i} \cdot \sum_{j=1}^{m} \beta_{12j}$ and $\sum_{k=1}^{q} \beta_{13q}$ present the matrixes of coefficients for short-run effects, $\gamma$ is the matrix of long-run coefficients, $\mu$ shows the restricted intercept for the cointegrating vector, $\alpha_{13}$ shows the speed of adjustment to its equilibrium ($\theta ECM_{t-1}$) and $\varepsilon_t$ presents the error term. GDPCG, FDIR, and DIR are assumed as endogenous variables in VECM.

5. EMPIRICAL RESULTS

The article applied the descriptive method to expose the average values of chosen variables. The study's findings reveal that GDPCG mean value was 5.423 percent, while DIR was 28.055 percent, and followed FDIR at 5.619 percent. Table 1 presents the descriptive findings.

Table 1: Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>OBS</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPCG</td>
<td>20</td>
<td>5.423</td>
<td>0.709</td>
<td>4.156</td>
<td>6.560</td>
</tr>
<tr>
<td>DIR</td>
<td>20</td>
<td>28.055</td>
<td>3.391</td>
<td>23.838</td>
<td>34.892</td>
</tr>
<tr>
<td>FDIR</td>
<td>20</td>
<td>5.619</td>
<td>1.792</td>
<td>9.663</td>
<td>5.426</td>
</tr>
</tbody>
</table>

The article also used correlation to demonstrate the relationship between constructs, although this method does not explain the significance between variables. According to the findings, economic growth indicators such as DIR and FDIR have a substantial link with GDPCG. Table 2 displays the correlation coefficients.

Table 2: Correlation matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>GDPCG</th>
<th>DIR</th>
<th>FDIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDPCG</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIR</td>
<td>0.616</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>FDIR</td>
<td>-0.257</td>
<td>-0.371</td>
<td>1.000</td>
</tr>
</tbody>
</table>

A stationary series of economic variables is required to evaluate the long-run relationship between variables. Augmented Dickey-Fuller tests will investigate the unit root testing method (Dickey and Fuller, 1979). If these variables are non-stationary at
the root level, they are examined at the first-order difference I (1). Note that to utilize the VECM test, the series cannot be merged in order level. The test results are presented in Table 3. GDPCG, DIR, and FDIR are not integrated at the root level, whereas they are integrated at order one, according to ADF and PP findings. Hence the VECM method is suitable for empirical estimation.

Table 3. Results of the Unit Root Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF Test</th>
<th>PP Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
<td>Linear &amp; Constant</td>
</tr>
<tr>
<td>GDPCG</td>
<td>(-1.928)</td>
<td>[-4.006***]</td>
</tr>
<tr>
<td></td>
<td>[-4.006***]</td>
<td></td>
</tr>
<tr>
<td>DIR</td>
<td>(-1.873)</td>
<td>[-4.754***]</td>
</tr>
<tr>
<td></td>
<td>[-4.754***]</td>
<td></td>
</tr>
<tr>
<td>FDIR</td>
<td>(-1.703)</td>
<td>[-3.475**]</td>
</tr>
<tr>
<td></td>
<td>[-3.475**]</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***, **, * is critical values at 1%, 5% and 10% significant statistic () = non-stationarity in level and [] stationarity in 1st difference.

Table 4 indicates the optimal lag order through AIC (Akaike information criterion), SC (Schwart Bayesian criterion), and HQ (Hannan-Quinn Information criterion). The findings indicate that the optimal lag should be 2. Meanwhile, the results of the cointegration tests are presented in Table 5, where Johansen's procedure is employed to find the cointegration. After seeing the data in Table 5, we can conclude that, at most, a cointegration exists between variables in the setting of Vietnam at 5% significance.

Table 4. Optimal lag

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-55.347</td>
<td>-</td>
<td>5.727</td>
<td>7.418</td>
<td>7.612</td>
<td>7.428</td>
</tr>
<tr>
<td>1</td>
<td>-43.344</td>
<td>18.004</td>
<td>2.147</td>
<td>6.418</td>
<td>6.804</td>
<td>6.438</td>
</tr>
<tr>
<td>2</td>
<td>-32.350</td>
<td>13.742*</td>
<td>0.946*</td>
<td>5.544</td>
<td>6.123*</td>
<td>5.573</td>
</tr>
<tr>
<td>3</td>
<td>-30.997</td>
<td>1.353</td>
<td>1.486</td>
<td>5.875</td>
<td>6.647</td>
<td>5.914</td>
</tr>
<tr>
<td>4</td>
<td>-23.784</td>
<td>5.409</td>
<td>1.258</td>
<td>5.473*</td>
<td>6.439</td>
<td>5.523*</td>
</tr>
</tbody>
</table>

As cointegration validity is confirmed, we can examine the long- and short-term effects of DIR and FDIR on GDPCG in Vietnam. The long-term VECM model estimation is shown in Table 6. According to the data, there appears to be a positive and significant association between DIR and GDPCG. The results contradict the findings of Lean et al. (2011) and Bakari (2018), who concluded that there is no correlation between DIR and economic growth. As indicated, the results suggest that in both short-term and long-term coefficients, DIR positively influences GDPCG at 0.129, 0.257, and 0.160 units with significance levels of 0.031, 0.001, and 0.034, respectively. In the case of FDIR,
however, FDIR has a negative effect on GDPCG's short-run coefficient but a positive effect on GDPCG's long-run coefficient. These relationships are shown in Tables 6 and 7.

Table 5. The results of the cointegration test

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>5% Critical Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.745</td>
<td>39.449</td>
<td>29.797</td>
<td>0.003</td>
</tr>
<tr>
<td>At most 1*</td>
<td>0.607</td>
<td>16.228</td>
<td>15.495</td>
<td>0.039</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.020</td>
<td>0.336</td>
<td>3.841</td>
<td>0.562</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>5% Critical Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.745</td>
<td>23.220</td>
<td>21.132</td>
<td>0.025</td>
</tr>
<tr>
<td>At most 1*</td>
<td>0.607</td>
<td>15.892</td>
<td>14.265</td>
<td>0.027</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.020</td>
<td>0.336</td>
<td>3.841</td>
<td>0.562</td>
</tr>
</tbody>
</table>

Table 6. Long-run Coefficients (GDPCG)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIR (-1)</td>
<td>0.129</td>
<td>0.055</td>
<td>2.359</td>
<td>0.031</td>
</tr>
<tr>
<td>FDIR (-1)</td>
<td>0.162</td>
<td>0.143</td>
<td>1.129</td>
<td>0.276</td>
</tr>
<tr>
<td>C</td>
<td>-9.933</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7. Short-run Coefficients (GDPCG)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D (GDP (-1))</td>
<td>-0.384</td>
<td>0.260</td>
<td>-1.478</td>
<td>0.159</td>
</tr>
<tr>
<td>D (GDP (-2))</td>
<td>-0.232</td>
<td>0.161</td>
<td>-1.444</td>
<td>0.168</td>
</tr>
<tr>
<td>D (DIR (-1))</td>
<td>0.257</td>
<td>0.061</td>
<td>4.231</td>
<td>0.001</td>
</tr>
<tr>
<td>D (DIR (-2))</td>
<td>0.160</td>
<td>0.069</td>
<td>2.311</td>
<td>0.034</td>
</tr>
<tr>
<td>D (FDIR (-1))</td>
<td>-0.232</td>
<td>0.066</td>
<td>-3.522</td>
<td>0.003</td>
</tr>
<tr>
<td>D (FDIR (-2))</td>
<td>0.123</td>
<td>0.075</td>
<td>1.645</td>
<td>0.119</td>
</tr>
<tr>
<td>CointEq (-1) *</td>
<td>-0.252</td>
<td>0.105</td>
<td>-2.410</td>
<td>0.028</td>
</tr>
<tr>
<td>C</td>
<td>0.158</td>
<td>0.089</td>
<td>1.779</td>
<td>0.094</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.856</td>
<td>Mean dependent var</td>
<td>0.042</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.744</td>
<td>SD dependent var</td>
<td>0.656</td>
<td></td>
</tr>
<tr>
<td>Diagnostic test</td>
<td>Lag 1</td>
<td>Lag 2</td>
<td>Lag 3</td>
<td></td>
</tr>
<tr>
<td>Serial correlation test</td>
<td>0.359</td>
<td>0.618</td>
<td>0.714</td>
<td></td>
</tr>
</tbody>
</table>
Heteroskedasticity test | Chi-sq = 88.348 (df = 84, Prob. = 0.352)

Figure 2 depicts the responses of factors in the shocks, and it can be observed that the shock in FDIR leads to a lower response in DIR during the first two periods, then recovers in the next three periods before adjusting to equilibrium. This indicates that an increase in the FDIR will likely produce a crowding-out effect before having a spillover effect on the economy. The substantial increase in FDIR may impede the capacity of DIR to stimulate economic growth. The empirical data demonstrate that DIR is the primary contributor to economic growth with positive benefits across all periods. In contrast, economic expansion primarily influences FDIR, and there is no evidence that it significantly affects DI in the short run. The Granger test in Table 8 is conducted on stationary series, and the lag order is determined using AIC, SC, and HQ criteria. Table 8 demonstrates that FDIR influences GDPCG and DIR, but insufficient statistical evidence indicates the converse.

Figure 2. Response to Cholesky One S.D of GDPCG, DIR and FDIR

Table 8. Pairwise Granger Causality Test

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDIR does not Granger Cause GDPCG</td>
<td>17</td>
<td>5.069</td>
<td>0.022</td>
</tr>
<tr>
<td>GDPCG does not Granger Cause FDIR</td>
<td></td>
<td>0.622</td>
<td>0.709</td>
</tr>
<tr>
<td>DIR does not Granger Cause GDPCG</td>
<td>17</td>
<td>2.068</td>
<td>0.168</td>
</tr>
<tr>
<td>GDPCG does not Granger Cause DIR</td>
<td></td>
<td>0.533</td>
<td>0.670</td>
</tr>
<tr>
<td>DIR does not Granger Cause FDIR</td>
<td>17</td>
<td>2.237</td>
<td>0.147</td>
</tr>
</tbody>
</table>
FDIR does not Granger Cause DIR | 8.522 | 0.004

6. DISCUSSION

The research revealed that the domestic investment to GDP ratio, often known as DI, had a positive relationship with the GDP growth rate. Consistent with the research by Chien et al. (2021) and Omri (2014), which suggested that DI is gaining more and more attention due to its contribution to the structure of the economies in many nations, the results of the present study support these claims. In addition, DI possessed significant potential for fostering partnerships inside the domestic industry. We cannot deny the reality that domestic investment is one of the effective methods for accelerating economic growth. These investments simplify productivity, development growth, exports, and capital generation.

Similarly, the results of this study are consistent with the findings of Tang et al. (2008), who found that domestic investment is positively connected with economic development, as it is evident that when the economy advances, domestic investment increases automatically and vice versa. The findings are consistent with those of Chidoko et al. (2015), who concur that capital inflow stimulates economic growth and hence favorably affects the GDP per capita growth rate. This suggests that domestic investment in the Vietnamese context is viewed as a speedier and more sustainable pathway for the modern economy via many sources, such as capital formation, infrastructure development, export, and productivity. Specifically, domestic investment has a crucial influence on the economy's long-term growth.

The results reveal a positive and statistically significant relationship between FDIR and GDPCG in the long run but a negative and statistically significant relationship in the short term. Some results are consistent with the literature, while others contradict them. For instance, Amade et al. (2022) 's research indicates that the link between FDIR and GDPCG rate is positive in the short term and negative in the long term, indicating that growth in foreign direct investment may harm the economy in the long term. The results are also consistent with Mahmood (2018) findings, in which the authors state that a steady stream of FDI could assist the economy and save the country. Still, a bigger proportion of FDI could give foreign companies control, which is detrimental to the home economy. The results are also consistent with the findings of Kumar et al. (2005). They suggested that FDI functions as a conduit for the diffusion of new ideas and technology and applying high-tech products from advanced economies.

7. CONCLUSION

As foreign direct and domestic investment are the focus of this study, foreign direct investment throughout time is examined to represent cumulative reactions to economic growth and its entities. The analysis of Vietnam's economic data from 2000 to 2019 reveals that foreign direct investment initially outweighs domestic investment before
demonstrating a spillover impact later. The rise in foreign direct investment inflows does not boost (reduce) domestic investment over time, and domestic investment tends to return to equilibrium over time. This study supports the argument of Omri (2014). They contend that there is a relationship between foreign investment and economic growth, as well as domestic investment and economic development and that there is a unidirectional causal relationship between foreign direct investment and domestic investment.

Several recommendations are derived from this study's findings: I the government should direct economic policy to continue to attract foreign direct investment; (ii) the government should enact regulations to control foreign investment activities to minimize its negative effects and overwhelming effects on domestic investment; (iii) the government should provide sufficient resources and mechanisms to encourage domestic investment due to its essential role in the economy, and (iv) policies should be focused on removing barriers to domestic investment. This has the twin impact of attracting foreign investment and enhancing the quality of domestic investment (Alfaro et al., 2006), allowing host economies to maximize the benefits of foreign investment.

In addition to its consequences, the study includes a few shortcomings. Due to the chosen approach, the study cannot reveal Tripler-dimensional correlations in a meaningful way. Moreover, the role of human capital and technology is beyond the purview of this study; therefore, if considered by future researchers, they may yield intriguing insights.

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