The Effect of Trade Openness on Foreign Direct Investment in Vietnam*

Nguyen Thi Kim LIEN

Received: November 20, 2020 Revised: January 25, 2021 Accepted: February 03, 2021

Abstract

The purpose of this paper is to study the impact of trade openness on foreign direct investment (FDI) inflows into Vietnam, an emerging country with relatively high trade openness in recent years. The study used the vector autoregression (VAR) model to examine the impact of trade openness on FDI in Vietnam, in the period from 2005 to 2019. The research data are time-series data, with quarterly frequency, from 2005:Q4 to 2019:Q3. The FDI data were collected by International Financial Statistics. The data of trade openness were calculated based on Vietnam’s export, import, and GDP data collected by the General Statistics Office of Vietnam. The estimated result shows that the trade openness has a positive effect on FDI. The current FDI is heavily influenced by FDI in the past with an average explanation of 74%. The main findings indicate that trade openness has a positive effect on FDI inflows into Vietnam. The findings also show that FDI in Vietnam is significantly affected by the shocks of the FDI itself in the past. The findings of the study suggest the Vietnamese Government improves the quality of trade openness and FDI, continues and maintains economic relations with other countries to increase trade openness.

Keywords: Trade Openness, Foreign Direct Investment, VAR, Vietnam

JEL Classification Code: E22, F21, F41

1. Introduction

Foreign investment capital is a very important resource for economic and social development. Vietnam, a developing countries, has made great efforts to attract foreign direct investment (FDI) to exploit this capital resource. The results of FDI attraction have achieved remarkable results associated with the process of opening international economic integration. Especially, in 2005, the Law on Investment was issued together with the fact that Vietnam became an official member of the World Trade Organization (WTO), promoting FDI in Vietnam to continuously increase rapidly. In fact, FDI has responded to the rising trend of trade openness in Vietnam. FDI in Vietnam is taking advantage of the large trade openness and focusing on sectors associated with the roadmap for tariff reduction and investment incentives under FTA (Free Trade Agreements) commitments. On the other hand, the proportion of raw, semi-finished and processed and assembled goods in the total export turnover is still large, so the value-added of exports is low and the import value of raw materials is high. This in turn contributes to increasing the openness of the economy. However, most of the FDI projects in Vietnam are scattered in many fields with small project scale. Vietnam is still limited in attracting FDI inflows to the development of key industries such as energy, heavy automobile manufacturing, port support equipment, optical equipment, new materials, and high technology.

In the world, in the recent decades, FDI inflows in many countries have increased, strongly associated with the process of economic integration between countries. Growth in FDI inflows to countries has also been accompanied by an increase in theories and empirical studies related to this capital inflow. Many empirical studies have been conducted to examine the impact of trade openness on FDI flow. Many studies agreed that trade openness is an indicator of a country’s trade openness policy, and trade openness has an impact on FDI. Some studies indicated that the characteristics of FDI flows in each country may have different responses to trade openness. In addition, some studies found that FDI has a strong impact on itself.
In general, the Vietnamese context shows that the large trade openness has driven FDI inflows. However, the question is: does the nature of the trade openness in Vietnam affect the FDI flow characteristics? The main problem facing the Vietnamese government is how trade openness affects FDI, and what the government needs to do to take advantage of these effects to get the real benefits of FDI inflows. Therefore, assessing the impact of trade openness on FDI is an urgent requirement in the current period. This study aims to analyze the impact of trade openness on FDI into Vietnam with the following main points: (1) examine the impact of trade openness on FDI inflows to Vietnam, a case study figure for groups of emerging countries; (2) discuss research results in the Vietnamese context to assess the nature of trade openness and FDI inflow characteristics. On that basis, the article will propose some recommendations for the government to adjust its policies to attract FDI inflows to take advantage of the real benefits of FDI inflows as well as trade openness.

2. Literature Review and Hypotheses

2.1. Impact of Trade Openness on FDI Inflows

2.1.1. Positive Impact of Trade Openness on FDI Inflows

According to Chakrabarti (2001), trade openness indicates how easily investors can move capital in and out of a country, so trade openness is an important determinant of FDI inflows. Chakrabarti (2001) examined the determinants of FDI in 135 countries, including Vietnam. Research results show that a country's trade openness has a significant positive impact on FDI inflows. Similarly, Campos and Kinoshita (2003) found that greater trade openness contributes to more FDI inflows in emerging market economies. Ta, Le, Nguyen, Phan, and Do (2020) found that trade openness positively impacted foreign direct investment in Vietnam. Also, Le, and Kim (2020) found that the opening of the economy and easing barrier restrictions have a positive impact on investment flows into Vietnam.

Asiedu (2002) argued that the impact of trade openness on FDI depends on investment orientation. For investors seeking markets, low trade openness (due to many trade barriers) will boost FDI. In contrast, for export-oriented companies that want to manufacture products to supply many countries around the world, the high trade openness will promote an increase in FDI. Asiedu’s (2002) results show that trade openness has a positive impact on FDI in African countries, including the Southern Sahara (sub-Saharan Africa–SSA) and non-Southern Sahara (non-SSA). However, the study also found that the extent of the impact of trade openness on FDI in these two regions differs. FDI to SSA is less responsive to changes in openness than FDI to other regions. These results show that the impact of trade openness on FDI varies between African countries. Similarly, Yasin (2005) on FDI in 11 African countries in the Southern Sahara in the period 1990-2003 also showed that trade openness has a significant positive impact on FDI inflows. He and Choi (2020) also found an increase in Chinese FDI flow into countries focus on open trade policies, which has signed Free Trade Agreement with China.

Abdullah, Bakar, and Hassan (2006) identified factors affecting FDI inflows into China from five ASEAN countries, namely, Malaysia, Thailand, Philippines, Indonesia, and Singapore in the 1990s. Empirical results show that trade openness is an important variable in explaining FDI inflows into China. Ang (2008) considered the determinants of FDI inflows in Malaysia during 1960–2005. The study shows that trade openness promotes FDI. Similarly, the study by Yol and Teng (2009) on FDI inflows to Malaysia in the period 1975–2006 also shows that FDI is positively affected by the openness of the economy. Boateng, Nisar, and Wu (2015) used quarterly data to measure the impact of macroeconomic factors on FDI inflows to Norway in 1986–2009. The study used the VAR/VECM model to assess the impact of past FDI and control variables likely to affect FDI. The results show that trade openness has a statistically significant impact on FDI inflows into Norway. Djulis (2017) said that Indonesia has long been interested in opening trade. Research results of Djulis (2017) shows the impact of increasing international trade of host countries with FDI. Specifically, trade openness has a positive relationship with FDI. Burakov, Itse, and Freidin (2018) studied FDI inflows in the Russian Federation and Belarus between 1997 and 2017. Research results show that trade openness has a positive impact on FDI.

Liargovas and Skandalis (2012) considered the importance of trade openness to attract FDI inflows by regression analysis using a sample of 36 developing economies between 1990 and 2008. The main empirical findings show that in the long run, trade openness contributes positively to FDI inflows into developing economies. Jabri, Guesmi, and Abid (2013) show that trade openness affects FDI in Middle East and North Africa (MENA) countries in the period 1970–2010. Similarly, the study by Leitão (2015) on Portuguese FDI in the period of 1990–2011 also shows that trade openness has a positive correlation with FDI.

2.1.2. The Negative Impact of Trade Openness on FDI Inflows

Schmitz and Bieri (1972) studied the FDI flows from the United State to Canada, the European Economic Community (EEC), and the European Free Trade Association (EFTA) during 1952–1966. According to Schmitz and Bieri (1972),
there is the tariff discrimination hypothesis focusing specifically on U.S. direct investment in the European Economic Community (EEC). To avoid obstacles to trade resulting from the imposition of a tariff, foreign investment is undertaken in the country to which it is difficult to export because of the tariff obstacle. Therefore, the authors argued that removing tariffs (increasing trade openness) would reduce FDI. Their research results show that trade openness reduces FDI to countries with trade restrictions such as Canada and EEC countries.

2.1.3. No Statistically Significant Impact of Trade Openness on FDI Inflows

While finding negative effects of trade openness on FDI in countries with trade restrictions such as Canada and EEC countries, Schmitz and Bieri (1972) have found no statistically significant effect of trade openness for EFTA free trade countries.

Wheeler and Mody (1992) analyzed the factors affecting international investment decisions with aggregate data on US investment in 42 countries during 1982-1988. The results show that the openness of the economy has a negative impact on multinational investment. Economies with smaller trade openings (such as Brazil and Mexico) have found it more attractive to US multinationals. These countries are recipient countries of FDI instead of imports, so FDI is attracted by high trade barriers. However, in the significance and stability tests of Wheeler and Mody model, this result is only true in manufacturing but unstable and varies across industries production results in general product that is slightly different and not statistically significant.

2.2. Impact of FDI Inflows in the Past on FDI Inflows at the Current Period

Head and Ries (1996) argued that foreign firms would prefer cities that already have other foreign firms. Head and Ries (1996) constructed an experimental model using data of 931 foreign-invested companies established between 1984 and 1991 in China. According to Head and Ries (1996), foreign investment creates demand (for specialized input suppliers) and supply response in a city depends on the potential number of participants. The results are consistent with the assumption that previous foreign investment and a large number of potential suppliers make the city more attractive to foreign investors. These results support the idea that the most cumulative economies in cities with large industrial bases and a presence of foreign investment.

Cheng and Kwan (2000) investigated the impact of the determinants of FDI inflows on 29 regions of China from 1985 to 1995. They found a strong positive self-reinforcing effect of FDI on itself, consistent with the agglomeration effect identified by Head and Ries (1996). Good infrastructure (roads) contributed to FDI, but high-grade paved roads did not perform any better than all roads. Regional income had a positive effect but wage cost had a negative effect on FDI. None of the education variables serving as proxies for labor quality had a significant impact on FDI. At the same time, the coefficients for Special Economic Zones and ZONE show significant positive effects. The evidence shows that SEZs, near Hong Kong and Taiwan, have been more successful than others in attracting FDI into China.

Table 1: Summary Table for Literature Review

<table>
<thead>
<tr>
<th>Trade Openness Positive Impact on FDI</th>
<th>Trade Openness Negative Impact on FDI</th>
<th>No Statistically Significant Impact of Trade Openness on FDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chakrabarti (2001); Asiedu (2002); Yasin (2005); Abdullah et al. (2006); Ang (2008); Yol and Teng (2009); Liargovas and Skandalis (2012); Jabri et al. (2013); Boateng et al. (2015); Leitão (2015); Djulius (2017); Burakov et al. (2018); Le and Kim (2020); He and Choi (2020); Ta et al. (2020)</td>
<td>Schmitz and Bieri (1972) (in case Canada and EEC countries)</td>
<td>Schmitz and Bieri (1972) (in case EFTA free trade countries); Wheeler and Mody (1992)</td>
</tr>
</tbody>
</table>
Carstensen and Toubal (2004) used dynamic panel data methods to examine the determinants of FDI inflows into Central and Eastern European countries (CEECs). They identified a set of traditional determinants of FDI, namely, market size, trade costs, plant and firm specific costs, and relative factor endowments. In addition, they included a second set of explanatory variables, namely share of private firms, mode of privatization and risks associated with each host country may influence investment decisions in CEECs. Their empirical model showed the significant and positive short-term impact of the lagged FDI on FDI inflows into CEECs at the study period. Besides that, market potential, low relative unit labor costs, a skilled workforce and relative endowments, have positive significant to FDI inflows in those countries. Especially, the education of the labor force in the host country, as measured by skill ratio, has a strong positive impact on FDI inflows.

Bellak, Leibrecht, and Stehrer (2010) elaborated an empirical model using econometric panel data in the US and six old EU member countries (USplus-EU-6) as well as in four Central and Eastern European new EU member countries (CEEC-4) in the period of 1995–2004. Research results found that past FDI has an effect on attracting FDI in the present. At the same time, policies related to R&D and development of information technology infrastructure, improve skills for employees attracted most of FDI inflows.

2.3. Development of Research Hypotheses

The literature review shows that it is necessary to develop some hypotheses to measure the factors that can affect current FDI in different countries, especially emerging countries, including Vietnam. The main purpose of this paper is to test two main hypotheses.

**H1:** Trade openness at some lags has an impact on current FDI inflows into Vietnam.

Regarding the impact of trade openness, in general, many studies show that trade openness positively affects FDI inflows into countries (Chakrabarti, 2001; Yasin, 2005; Ang, 2008; Liargovas & Skandalis, 2012; Boateng et al., 2015; Leitão, 2015; Djulius, 2017; Burakov et al., 2018). However, this effect is not always in the positive direction in case studies. Therefore, researchers have argued that the trend of the impact of trade openness on FDI in different countries may differ, depending on the investment orientation of FDI projects (Asiedu, 2002). The studies have shown that trade openness positively affects FDI inflows, because FDI projects are export oriented by nature. Foreign investors invest in countries with large trade openings to facilitate exports. Trade open market oriented FDI projects tend to have a negative impact on FDI inflows into that country (Schmitz & Bieri, 1972). Projects invest in this country to supply goods to countries where it is difficult to overcome barriers to market entry. On the other hand, some studies show that the impact of trade openness on FDI differs from country to country (Asiedu, 2002; Schmitz & Bieri, 1972) and some studies show that it is not found the effect of trade openness to FDI inflows (Wheeler & Mody, 1992).

**H2:** FDI in some lags has an impact on current FDI inflows into Vietnam.

Previous studies show that FDI in the past has an impact on FDI in the present (Head & Ries, 1996; Cheng & Kwan, 2000; Carstensen & Toubal, 2004; Bellak et al., 2010). However, this impact is different depending on the factors of FDI such as transportation infrastructure (Head & Ries, 1996; Cheng & Kwan, 2000), skilled workforce (Carstensen & Toubal, 2004), R&D and development of information technology infrastructure, skills improvement for employees (Bellak et al., 2010).

3. Research Methods and Data

3.1. Data Collection

The study data are time-series data, with quarterly frequency, in the period from the fourth quarter of 2005 to the third quarter of 2019. The FDI data were collected by International Financial Statistics. The data on trade openness (OPEN) were calculated based on the data of Vietnam’s export, import, and GDP. These data were collected by the General Statistics Office of Vietnam.

3.2. Research Methods

To evaluate the impact of trade openness on FDI, the author used the vector autoregression (VAR) model proposed by Boateng et al. (2015). The research model to examine the impact of trade openness and lagged FDI on FDI at the current period takes the following form:

\[
\text{FDI}_t = \alpha_0 + \sum_{j=1}^{n} \alpha_{1j} \text{FDI}_{t-j} + \sum_{j=1}^{n} \alpha_{2j} \text{OPEN}_{t-j} + \varepsilon_t
\]

Where, the dependent variable (FDI) is Foreign Direct Investments in Vietnam (in million USD) and the independent variable (OPEN) is trade openness. The trade openness was calculated by the ratio of total exports and imports to a country’s GDP.
4. Results and Discussion

4.1. Descriptive Statistics

Descriptive statistical results show that the two variables in the estimation model have 56 observations over the research period. In particular, the FDI inflows reached an average of US$2395.9 million per quarter and reached the highest value in the fourth quarter of 2018 (US$4890 million) and the lowest was the first quarter of 2006 (US$480 million). In terms of trade openness, statistical results show that trade openness reached the highest value in the second quarter of 2018 (3.43) and the lowest was 1.11 in the fourth quarter of 2012 with an average trade opening of 0.48.

4.2. Stationarity Test

Unit root tests are used to check the integration order or to verify the stability of variables. Before putting variables into the model, the study used the Dickey-Fuller test (Dickey & Fuller, 1979) to test the stationarity of the data series. With the hypothesis $H_0$: the data series is not stationary.

Stability test results show that both variables are stationary at the original data series. Specifically, the original FDI series is paused with a significance level of 10% and the original OPEN series is paused with a significance level of 1%.

4.3. Determining the Optimal Lag

Before testing for the Johansen cointegration, the study chose the lag length of the VAR model. Based on the results of testing the optimal lag, the criteria LR, FPE, AIC showed that the model has an optimal lag of 5. Accordingly, the study identified the use of the estimation model with a lag of 5.

4.4. Testing Cointegration

The results of the cointegration test showed that there was no cointegration in the long term in the data series. Therefore, the author used the VAR model in the study (Engle & Granger, 1987).

4.5. Examining the Model Reliability

After estimating the VAR model, the study considered the model stability. The stability test results showed that all Roots of Characteristic Polynominal are less than 1 and within the unit circle. The results of the self-object phenomenon test showed that the hypothesis $H_0$ was accepted, that is, the residual autocorrelation phenomenon did not exist. It means the VAR model to assess the impact of trade openness on FDI is appropriate and stable.

4.6. Results of Coefficient Estimation

The estimated result of the vector autoregression model (VAR) model shows that the trade openness variable has a positive effect on FDI. It means that trade openness has a positive impact on FDI inflows in Vietnam. The study result also shows that the lag of FDI has a positive impact on FDI. These results express the fact that FDI in Vietnam has a direct relation with trade openness. The results of impulse-response function (IRF) and forecast error variance decomposition (FEVD) are shown in Figure 1.

The impulse-response of one shock for each variable, not only has a direct influence on itself, but also influences the other endogenous variables in a dynamic structure. The study shows that how the FDI changes when one shock occurs in each variable. The IRF and FEVD tests confirm the estimated results of the relationship quite well. The occurrence of one shock in openness and FDI’s lagged values have a significant and positive effect on FDI.

<table>
<thead>
<tr>
<th>Table 2: Variables Used in the Research Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>**Abbreviation</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>FDI</td>
</tr>
<tr>
<td>OPEN</td>
</tr>
</tbody>
</table>
Table 3: 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>FDI</td>
<td>56</td>
<td>2395.911</td>
<td>997.377</td>
<td>480</td>
<td>4890</td>
</tr>
<tr>
<td>OPEN</td>
<td>56</td>
<td>1.926</td>
<td>0.438</td>
<td>1.11</td>
<td>3.43</td>
</tr>
</tbody>
</table>

Table 4: The Result of Unit Root Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Original Data Series</th>
<th>Test Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>−2.579</td>
<td>0.0974*</td>
<td></td>
</tr>
<tr>
<td>OPEN</td>
<td>−7.157</td>
<td>0.0000***</td>
<td></td>
</tr>
</tbody>
</table>

Note: *, *** indicates significance at the 10% level and 1% level.

Table 5: Determining the Optimal Lag

<table>
<thead>
<tr>
<th>Selection-order Criteria</th>
<th>Number of obs = 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lag</td>
<td>LL</td>
</tr>
<tr>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>0</td>
<td>−436.921</td>
</tr>
<tr>
<td>1</td>
<td>−413.026</td>
</tr>
<tr>
<td>2</td>
<td>−402.977</td>
</tr>
<tr>
<td>3</td>
<td>−384.887</td>
</tr>
<tr>
<td>5</td>
<td>−379.588</td>
</tr>
<tr>
<td>6</td>
<td>−375.658</td>
</tr>
</tbody>
</table>

Table 6: Johansen Test for Cointegration

| Trend: Constant | Number of obs = 52 |
| Sample: 5–56 | Lags = 4 |
| maximum rank | Parms | LL | Eigenvalue | TraceStatistic | 5% critical value |
| 0   | 14   | −406.98 | — | 109185* | 15.41 |
| 1   | 17   | −402.30 | 0.16 | 1.55 | 3.76 |
| 2   | 18   | −401.52 | 0.03 | | |
Table 7: Variance Decomposition on FDI

<table>
<thead>
<tr>
<th>Lag</th>
<th>FDI</th>
<th>Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0.87</td>
<td>0.13</td>
</tr>
<tr>
<td>3</td>
<td>0.73</td>
<td>0.27</td>
</tr>
<tr>
<td>4</td>
<td>0.68</td>
<td>0.32</td>
</tr>
<tr>
<td>5</td>
<td>0.72</td>
<td>0.28</td>
</tr>
</tbody>
</table>

The variance decomposition results show that trade openness has a significant impact on FDI. The greater the lag, the greater the impact level. Special, at 2-quarter lag, trade openness explained 13% of the fluctuations of FDI, extending to the optimal 5-quarter lag. At 5-quarter lag, trade openness accounts for about 27% of the fluctuation of FDI. By entering international trade, Vietnam can attract more foreign investments, especially FDI. Gradual reduction of tariff and non-tariff barriers for creating competitive situations in domestic markets is very important. Also, trade volume which has a direct relation with openness shows the contribution of the economy in the world markets. The more the economy is open and consequently the more the trade balance leads to the attraction of more FDI.

Besides, the study also shows that current FDI is heavily influenced by FDI in the past with an average explanation of 74%. In particular, FDI in the 2-period lag explains about 87% of current FDI and FDI in the 3-period lag explains about 73% of the current FDI. The more the lag is, the lower the level of interpretation of the FDI lag variable. Large FDI inflows in the past, especially FDI in the high-tech sector for manufacturing as well as infrastructure development, are important for investors’ current investment decisions. FDI in the past helps technology transfer, human resource training and infrastructure development, especially transport infrastructure, which will facilitate new projects and FDI investors in the future. Therefore, the more FDI is attracted to high-tech industries and infrastructure development, the more positive FDI in the past has been.

5. Conclusions and Policy Implications

The study has examined the impact of trade openness on FDI inflows into Vietnam, an emerging country with relatively high trade openness in recent years. The author used the vector autoregression model (VAR) model to test the effect of trade openness on FDI in Vietnam, in the period 2005–2019. The main findings indicate that trade openness significantly explains FDI inflows to Vietnam. It may also imply that the type of FDI attracted to Vietnam is export-oriented FDI. FDI companies want to produce products and supply to other countries around the world.

These findings provide useful information to policymakers for designing macroeconomic policies with taking advantage of large trade openness to effectively attract foreign direct investment. The Vietnamese Government should continue and maintain economic relations with other countries to increase trade openness. At the same time, the Government should also improve the “quality” of trade openness and FDI. Specifically, there should be an orientation to increase trade openness in the direction of value of exports and reducing the value of imported goods, promoting production and export of high-tech products. In addition, it is necessary to focus on attracting FDI from high-tech industries with advanced technology transfer, improving labor skills and developing infrastructure (especially transport infrastructure) to create advantages to attract more FDI inflows in the future.

The study also contributes to the existing literature with empirical evidence of the trade openness effect on FDI in the case of emerging countries with the increased trade openness. The results provide useful material for further studies.

References


Carstensen, K., & Toubal, F. (2004). Foreign direct investment in Central and Eastern European countries: a dynamic panel


