Impact of Foreign Direct Investment on Economic Growth in Vietnam

Nguyen Huu Cung[1]

Abstract

Foreign investment plays an important role in the socio-economic development of each country, in which FDI flows always give top priority in developing countries like Vietnam. The empirical method was employed on a secondary time series data set during the period 1995-2018 to determine the impact of FDI (net inflows) on economic growth in Vietnam by using a linear approach. An empirical model was built by a regression analysis between a dependent variable (GDP, current) and five independent variables (FDI, Export, Financial Freedom Index, Investment Freedom Index, Inflation). The empirical results find that the relationship between FDI (net inflows) and GDP (current) is a positive sign at 1% significance level, and the impact of FDI (net inflows) on economic growth is strongest. Export of goods and services (% of GDP) has a positive effect on GDP (current) at the 1% significance level. The financial freedom index has a positive effect on GDP (current) at the 5% significance level. Investment freedom index has a negative effect on GDP (current) at the 1% significance level. Moreover, the study also shows that the annual inflation rate has a negative effect on GDP (current) at the 10% significance level. Based on the findings, the article recommends that Vietnam continues to seek positive solutions to enhance the economic growth rate via attracting FDI inflows, increasing exports of goods and services, improving financial freedom index and investment freedom index, controlling inflation.

---

[1] Hanoi University of Industry, Vietnam.

1. Introduction

Due to the demands of optimal and efficient use of human resources, the emergence of foreign investment, including FDI flows is an indispensable requirement in the development of human society. Theories about foreign investment have become a source of light to illuminate the path to the success of foreign investors in all countries with the desire to seek maximum benefits from the investors' investment projects. What is Foreign Direct Investment? According to the WTO's definition, foreign direct investment occurs when an investor based in one country (the home country) acquires an asset in another country (the host country) with the intent to manage that asset. The management dimension is what distinguishes FDI from portfolio investment in foreign stocks, bonds, and other financial instruments. In most instances, both the investor and the asset it manages abroad are business firms. In such cases, the investor is typically referred to as the "parent firm" and the asset as the "affiliate" or "subsidiary." According to the IMF and OECD's definitions, foreign direct investment reflects the objective of obtaining a lasting interest by the resident entity in one economy ("direct investor") in an entity resident in an economy other than that of the investor ("direct investment enterprise"). The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence on the management of the enterprise. Direct investment involves both initial transaction between the two entities and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated. Thus, these two definitions refer to both two entities, including the host country and the home country. Moreover, FDI occurs when and only if both two entities expect to receive the benefits of this activity. What are the benefits?

When implementing direct investment projects in other countries, the home country will receive benefits such as (1) Improving the efficiency of using investment capital, (2) Foreign direct investment allows the home country's firms to extend the life cycle of products that have been manufactured and consumed in the domestic market, (3) Foreign direct investment helps the home country's firms to create a plentiful and stable supply of raw materials at low prices, (4) Through foreign direct investment, the home country's investors could achieve a number of essential purposes, such as expanding economic power and strengthening the influence in the international market by opening up expand product consumption markets, avoiding trade protection barriers of the host countries, reducing product costs, increasing competitiveness with goods and services imported from other countries. The positive impacts of FDI are not only in the home country, but also on the host country. In the field of economics, FDI supplements investment capital, promoting economic growth and economic reform, changing economic structure towards modernization, enhancing exports of goods and services. In the field of technology, FDI contributes to the development of new technologies and techniques through technology transfer, significantly improved infrastructure. In the field of foreign affairs, FDI aims to promote the development of external relations in the direction

of multilateralization and diversification for the common good, enhancing the prestige and position in the international arena, and international economic integration. In social fields, FDI contributes to an increase in employment and income, poverty reduction, human resource development.

In Vietnam, one of the important milestones to prove the transition from a centralized management economy to a free market economy is the application of the Law on Foreign Investment since 1987. This is also the time to start the flows of foreign direct investment into Vietnam and international integration in many fields. Although the capital flow was initially "dripping", "slowly" and "tentative" but with the efforts of Vietnam for many years thereafter by applying many positive policies to attract FDI inflows such as flexible financial and monetary policies, tax policy reform, economic openness, inflation under control, deep and wide international integration, others. As a result, there was a rapid increase in both quality and quantity of FDI flows, from which many multinational corporations have gradually presence in Vietnam. What are the impacts of FDI flows on the Vietnamese economy? The purpose of this article is to analyze the effect of FDI flows on Vietnam's GDP at current prices.

2. Literature Reviews

Foreign investment includes two different sources of capital, such as foreign direct investment and foreign indirect investment. FDI is an indispensable source of capital for any country including developed countries as well as developing countries, and a key driver of global economic integration of the host countries. Early stages of development, developing countries' limited ability to accumulate capital, weak national governance, incomplete legal systems, underdeveloped market economies, and others. To minimize risks in attracting foreign capital flows, developing countries have really prioritized attracting FDI inflows through preferential tax policies and many other policies. A number of substantial literatures have demonstrated the effects of FDI flows on economic growth in the host countries via empirical studies in Vietnam as well as other countries.

An empirical study on the relationship between FDI and economic growth in Pakistan, Ali and Hussain (2017) used a time series data set from 1991 to 2015, the results show that FDI has a positive effect and significant on economic growth. Also an empirical study in Pakistan, This article employed a time series data set for the years from 1981 to 2010 by using a Multiple regression techniques, the results indicated that the relationship between FDI and economic growth has a positive effect and significant (Rahman, 2014). In addition, in both the short-term and long-term, this article also found that the impact of domestic investment and human capital on economic growth is a positive and significant sign, while the relationship between trade openness and economic growth has a negative effect. An empirical study in Tunisia on the short-term and long-term relationship between FDI and economic growth, Bouchoucha and Ali (2019) employed a times series data set for the years from 1980 to 2015 by using the ARDL (Autoregressive Lag Distribution)

approach, the results of this article found that the impact of FDI on economic growth is a positive sign and significant in both the short-term and long-term. An empirical study in Malaysia employed a time series data set for the period from 1970 to 2005 by using Toda-Yamamoto test for causality relationship and the bounds testing (ARDL).

However, the impact of FDI on economic growth has a strong link or a significant positive effect, not in all countries. Evidence that, in a little of countries, the relationship between FDI and economic growth has an indirect effect, a weak or insignificant effect. Athukorala (2003) studied the relationship between FDI and economic growth in Sri Lanka, the article employed a time series data set for the years 1959-2002, and the results found that there was no a robust link between FDI and economic growth as expected initially. The results found that there is no a robust link between FDI and economic growth in a bi-directional causality and long-run relationship. This means that the relationship between FDI and economic growth is an indirect effect (Karimi and Yusop, 2009).

In Vietnam, there are several empirical studies on the causality relationship between FDI and economic growth. In the case of FDI as a dependent variable, Nguyen and Liu (2015) have an empirical study on the relationship between tax burden and FDI and the results found that the impact of tax burden on FDI is a negative sign and significant. Another study analyzes the role of GDP at current prices in attracting FDI inflows into Vietnam for the years 2003-2018 and the results have shown that the relationship between real GDP and FDI has a positive effect and significant at 1% significant level (Nguyen, 2019). Hoang et al. (2010) employed a panel data set for the years from 1995 to 2006 to analyze the impact of FDI on economic growth in Vietnam's sixty-one provinces, and the empirical results found that the effect of FDI on economic growth is a positive sign and significant. Doan (2004) and Nguyen (2007) found the role of FDI in the Vietnamese economy, and there was a positive effect of FDI on economic growth, the addition of development investment capital, economic restructuring, job creation, commodity production, exports, and others for the period under consideration. Liu et al. (2012) employed a secondary time series data set for the years 2002-2011 by using a linear model and the OLS method to determine the impact of tax burden on economic growth in Vietnam. Empirical evidence in this study found that tax burden has a positive effect and significant on economic growth. This proves that Vietnam's tax burden was not exceeded the tolerance of the economy in the research period. Ha et al. (2017) studied the relationship between FDI and economic growth by using a time series data set for the period 1990-2015. Through empirical results, the article concluded that the effect of FDI inflows to GDP growth has a positive sign. This means that FDI inflows contribute to faster GDP growth for Vietnam's economy. In the study of Nguyen (2018) employed a data set during the period 1977-2016 to determine factors affecting economic growth in Vietnam. The research results found that the impact of several factors such as FDI, share of exports, added value of agriculture, forestry and fishery sector, and ASEAN participation is a positive sign on economic growth.

3. Data and Model

An empirical study is used to determine the effect of FDI and other factors on economic growth in Vietnam. Within the scope of this article, the author performs the regression and correlation analysis by using a linear model. To accomplish the purpose of the study, the author employs a time series secondary data set ranging from 1995– 2018 to be collected from relevant organizations such as The World Bank, The Heritage Foundation, General Statistics Office of Vietnam. Ordinary Least Squire (OLS) with multiple variables was used to assess the relation between dependent and independent variables. Data are analyzed, explained and presented by using descriptive statistics, inferential statistics such as regression, correlation. The regression results show that there is no any serious problem to conclude for the model mismatch.

The following model is developed based on previous literature.

GDP = F(FDI, EXP, FINF, INVF, INFL)

$$\text{GDP} = \beta_0 + \beta_1\text{FDI} + \beta_2\text{EXP} + \beta_3\text{FINF} + \beta_4\text{INVF} + \beta_5\text{INFL} + \varepsilon_t$$

Where, GDP is Gross Domestic Product (Bill. US$)

Where, β_0 is Intercept Term and β_1, β_2, β_3, β_4, β_5 are Coefficients

FDI = Foreign Direct Investment, net inflows (BoP, current, Bill.US$)

EXP = Exports of goods and services (% of GDP)

FINF = Financial Freedom Index (%)

INVF = Investment Freedom Index (%)

INFL = Annual Inflation Rate (annual %)

ε = Error Variable

With the given data this article perform a linear regression on the relationship between five independent variables (FDI, EXP, FINF, INVF, INFL) and a dependent variable (GDP) in Vietnam to analyze the role of FDI on economic growth, at the same time to compare the effect degree between FDI and other factors on economic growth.

4. Results and Discussion

4.1   Descriptive Statistics

The descriptive statistics on the relationship between independent variables (FDI, Export, Financial freedom index, Investment freedom index, Inflation) and GDP at current prices in Vietnam to be showed in Table 1 below.

Table 1. Descriptive Statistics.

	GDP	FDI	EXP	FINF	INVF	INFL
Mean	97.9400	5.8611	67.0184	31.2500	25.8333	6.2814
Maximum	244.9480	15.5000	101.5930	40.0000	30.0000	23.1160
Minimum	20.7360	1.2980	32.8130	30.0000	15.0000	-1.7100
Std. Deviation	73.5523	4.6546	18.7810	3.3783	6.1972	5.3671
Observations	24	24	24	24	24	24

Source: Descriptive Statistics Output of Data Collected

4.2   Correlation and regression analysis

4.2.1   Correlation and Regression Analysis between GDP and Independent Variables

In table below, the correlation analysis was undertaken between GDP at current prices and explanatory variables such as FDI, export, financial freedom index, investment freedom index, annual inflation rate. The impact of factors on GDP at current prices could be a positive or negative sign.

Table 2. Correlation Matrix between GDP and Independent Variables.

		FDI	EXP	FINF	INVF	INFL	GDP
	FDI	1					
	EXP	0.8955	1				
Pearson Correlation	**FINF**	0.6806	0.6136	1			
	INVF	-0.5883	-0.6573	-0.0519	1		
	INFL	0.1584	0.1092	-0.2048	-0.1454	1	
	GDP	0.9609	0.9508	0.6652	-0.7026	0.0595	1

Source: Correlation Output of Data Collected

The correlation output shows that there is a positive correlation between GDP and FDI, export, financial freedom index and annual inflation rate while, the correlation between GDP and investment freedom index is a negative sign.

Table 3. Regression Analysis Results for GDP and Explanatory Variables.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-40.93094	27.89026	-1.467571	0.1595
FDI	7.601406	1.122120	6.774146	0.0000
EXP	1.154006	0.258429	4.465462	0.0003
FINFREE	2.918715	1.145909	2.547073	0.0202
INVFREE	-2.691965	0.550224	-4.892487	0.0001
INFL	-0.746458	0.416047	-1.794165	0.0896
R-squared	0.987760	F-statistic		290.5082
Durbin-Watson stat	2.029945	Prob(F-statistic)		0.000000

Source: Correlation Output of Data Collected

4.2.2 Model Fitness

In Table 3, the regression results indicate that the model is consistent and statistically significant at a 1% significance level (Prob(F-statistic) = 0.000000). There is a significant positive effect between a dependent variable and three independent variables. Besides, there is a negative effect between a dependent variable and two explanatory variables. Further, R-squared = 0.987760, the explanatory level of the determinants of GDP at current prices in terms of R^2 by 98.7760%. This means that around 98.77 percent of variation in GDP at current prices is explained by this model through independent variables such as FDI (net inflows), Exports of goods and services (% of GDP), financial freedom index, investment freedom index and annual inflation rate. The value d of Durbin-Watson test by d = 2.029945 while at 5% level significance (α = 5 % = 0.05), sample numbers n = 24, independent variables in the model k' = 5, inferred d_L = 0.925 and d_U = 1.902. Due to d_u = 1.902 < d = 2.029945 < 4 - d_u = 2.098, this concludes that the model has not an autocorrelation phenomena. To have a comparison of importance among factors, the author continues to analyze the regression results of each factor.

4.3   Foreign Direct Investment (net inflows)

In economic theory and practice in developed countries as well as developing countries have shown that the relationship between FDI and economic growth is a positive effect. This means that FDI contributes to speed up economic growth. In the case of Vietnam, the regression results show that FDI (net inflows) has a positive effect and significant on GDP at current prices at a 1% level of significance. This value implies that in constant condition of other factors, FDI (net inflows) rises to USD 1 billion, an increase in GDP at current prices is USD 7.601406 billion for the years 1995-2018. This is mainly due to an increase in FDI inflows, technological innovation, an increase in labor productivity and exports. This result is consistent

with the finding of Ali and Hussain (2017), Rahman (2014), Bouchoucha and Ali (2019), Hoang et al. (2010), Doan (2004) and Nguyen (2007), Ha et al. (2017).

4.4   Exports of goods and services (% of GDP)

In economic theory as well as empirical evidence shows that FDI and economic growth have a causal relationship. Export growth will help to improve resource factors such as creating more jobs, adding capital to the economy, and increasing total-factor productivity (TFP), thereby promoting economic growth. In contrast, economic growth contributes to increase productivity through exploiting economic efficiency by scale, thereby reducing production costs and commodity prices. This will have the effect of increasing the real exchange rate, improving international trade competitiveness, and thus, promoting exports for goods and services. In the case of Vietnam, the regression results show that the relationship between Exports of goods and services (% of GDP) and GDP at current prices has a positive effect and significant at a 1% level of significance. This means that 1% increase in exports share to GDP results in USD 1.154006 billion increase in GDP at current prices keeping other things constant.

4.5   Financial Freedom Index

According to The Heritage Foundation, there are five broad areas to calculate an economy's financial freedom index, including (1) The extent of government regulation of financial services, (2) The degree of state intervention in banks and other financial firms through direct and indirect ownership, (3) The extent of financial and capital market development, (4) Government influence on the allocation of credit, and (5) Openness to foreign competition. Generally, the increase in this index of the economy in any country will have more attraction for easy access to investment capital sources, leading to an expansion in production scale, thereby stimulating economic growth. In the case of Vietnam, the regression results show that financial freedom index and GDP at current prices have a positive effect and significant at a 5% significance level. This value implies that in constant condition of other factors, 1% increase in financial freedom index results in USD 2.918715 billion rise in GDP at current prices in Vietnam.

4.6   Investment Freedom Index

In constant condition of other factors, an increase in investment freedom index results in an increase or a decrease in GDP at current prices depends on whether this indicator is high or low in each period. In the case of Vietnam, the regression results show that investment freedom index has a negative effect and significant on GDP at current prices at a 1% significance level. Based on the slope of β_4, if investment freedom index increases by 1%, GDP at current prices decreases to USD 2.691965 billion in Vietnam during the period 1995-2018. This is also consistent with the result of Vietnam's investment freedom index has dropped from 30% in the period 1995-20009 to 18.9% in the period 2010-2018.

4.7   Annual Inflation Rate

In economic theory as well as empirical evidence shows that the relationship between annual inflation index and economic growth has a positive or negative sign depending on the economic governance capacity of the government in each period. In the case of Vietnam, the regression results show that annual inflation rate has a negative effect and significant on GDP at current prices at a 10% significance level. Based on the slope of β_5, a 1% increase in annual inflation rate results in USD 0.746458 billion decrease in GDP at current prices in Vietnam. This confirms that Vietnam's average annual inflation rate has negatively affected on economic growth during 1995-2018.

Within the scope of this article, the results show that FDI (net inflows), exports for goods and services (% of GDP), financial freedom index and investment freedom index effect on economic growth at a 1% significance level while annual inflation rate effects on economic growth at a 10% significance level. The effect of FDI (net inflows) on economic growth is strongest in the review period. In fact, there are still several other factors that could impact on economic growth such as trade openness, interest rate, share of agriculture sector to GDP, share of industry sector to GDP, government expenditure, others. Therefore, this is the research gap for the next studies of the author.

5. Conclusion and Policy Implication

The purpose of this paper is to analyze the relationship between FDI and economic growth in Vietnam during the period 1995-2018. At the same time, the author compares the impact between factors on economic growth. The empirical results show that the role of FDI net inflows on economic growth is strongest at 1% level of significance. Based on the findings of this article, the author proposes a number of policy implications as follows. *Firstly,* Vietnam needs to quickly shift from attracting FDI based on natural resources and cheap labor to high-tech FDI projects in order to become an new motivation for economic growth in the next period through tax policies, land, infrastructure development, high quality labor, others. *Secondly,* Vietnam continues to become a member of international organizations and seriously implements its signed commitments on trade and investment agreements, thereby expanding its export markets, and thus, stimulating economic growth. *Thirdly,* Vietnam continues to actively implement reforms to improve the index of investment freedom and financial freedom, thereby attracting domestic and foreign investment to expand production and stimulate economic growth. *Fourthly,* due to inflation has a negative impact on economic growth, Vietnam needs to strongly control annual inflation index in order to become a driving force for economic growth.

References

[1] Rahman (2014), Impact of Foreign Direct Investment on Economic Growth in Pakistan, Journal of Economics and Sustainable Development, 5(27): 251-255.

[2] Nguyen and Nguyen (2007), Foreign Direct Investment in Vietnam: An Overview and Analysis the Determinants of Spatial Distribution Across Provinces, MPRA Working Paper, No. 1921.

[3] Doan (2004), Foreign Direct investment Into Vietnam - Current Situation, Issues and Prospects, Journal of Economic Research, 315.

[4] Hoang et al. (2010), Does Foreign Direct Investment Promote Economic Growth in Vietnam? ASEAN Economic Bulletin, 27(3): 295-311.

[5] Nguyen and Liu (2013), Tax Burden and Foreign Direct Investment: Theory and Practice in Vietnam, Advances in Management and Applied Economics, 3(3): 85-103. http://www.scienpress.com/Upload/AMAE/Vol%203_3_6.pdf

[6] Ha et al. (2017), The Impact of Foreign Direct Investment on Economic Growth: A Case Study in Vietnam 1990–2015, Industrial Engineering Letters, 7(4): 1-7.

[7] Nguyen (2018), Determinants Affecting Economic Growth: The Case of Viet Nam, International Journal of Business and Economics, 3(1): 1-11.

[8] Bouchoucha and Ali (2019), The Impact of FDI on Economic Growth in Tunisia: An Estimate by the ARDL Approach, Munich Personal RePEc Archive, Paper No. 91465. https://mpra.ub.uni-muenchen.de/91465/

[9] Nguyen (2019), Gross Domestic Product and Foreign Direct Investment: Empirical Evidence from Vietnam, European Scientific Journal, 15(31): 38-51. https://eujournal.org/index.php/esj/article/view/12553

[10] Karimi and Yusop (2009), FDI and Economic Growth in Malaysia, Munich Personal RePEc Archive (MPRA), Paper No.14999. https://mpra.ub.uni-muenchen.de/14999/.

[11] Liu et al. (2012), Tax Burden and Economic Growth: Theory and Practice in Vietnam, 2nd International Conference on Business and Economics Research (ICBER), Cambodia, Vol. 46, pp. 78-85. http://www.ipedr.com/vol46/015-ICBER2012-N10010.pdf

[12] Wasantha Athukorala (2003), The Impact of Foreign Direct Investment for Economic Growth: A Case Study in Sri Lanka, 9th International Conference on Sri Lanka Studies, Full Paper Number 092.
https://www.researchgate.net/publication/228944269.

[13] Ali and Hussein (2017), Impact of Foreign Direct Investment on the Economic Growth of Pakistan, American Journal of Economics, 7(4): 163-170. DOI: 10.5923/j.economics.20170704.01

[14] Maitena Duce, Definition of Foreign Direct Investment (FDI): A Methodological Note, Final draft, July 31, 2003.
http://www.bis.org/publ/cgfs22bde3.pdf

[15] World Trade Organization. Trade and Foreign Direct Investment. New Report by the WTO, 9 October 1996.
http://www.wto.org/English/news_e/pres96_e/pr057_e.htm.

[16] https://www.heritage.org/index/visualize

[17] https://databank.worldbank.org/home.aspx