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# Labor Force and Foreign Direct Investment: Empirical Evidence from Vietnam

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## Abstract

The labor force plays an important role in attracting foreign direct investment (FDI) both in developed and developing countries. In countries where there are appropriate policies for training human resources and maintaining the health of human resources, such countries have a competitive advantage and can attract FDI inflows, besides having a workforce to meet the needs of foreign investors. The purpose of this paper is to analyze the effect of the labor force and several other factors on FDI attraction in Vietnam. The empirical model is employed to perform regression and correlation on the impact of the labor force, real gross domestic product, inflation, index of business freedom, and index of investment freedom on Vietnam's FDI attraction by using a secondary time series data set during the period 1995-2018. The empirical results found that both labor force and inflation have a positive influence on FDI at a 5% significance level; index of business freedom has a positive impact on FDI at a 10% significance level, and real gross domestic product and index of investment freedom have a positive impact on FDI at a 1% significance level. From these results, this study proposes several important policy implications for Vietnam in attracting FDI in the future.

**Keywords:** Economic Growth, FDI, Labor Force, Inflation Rate, Vietnam

**JEL Classification Code:** E2, F3, O1, 04

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## 1. Introduction

In the early stage of development corresponding to the low starting point, available resources are exploited by countries to achieve the expected growth rate (Nguyen, 2020). However, to develop faster, countries have been seeking effective solutions to attract foreign resources, including foreign direct investment (FDI). FDI is a type of investment that moves capital from one country to another to seek profits, disperse risks, expand markets, transfer technology, and others. Cung (2019) affirms the importance of FDI to each country and stated that FDI is an important source of investment capital within the development process of both developed and developing countries. FDI not only provides the optimal benefits as expected for the home country's

enterprises but also creates opportunities to receive benefits from the host country (Cung & Nhung, 2020). According to the IMF and OECD definitions of FDI –“Direct investment reflects the aim of obtaining a lasting interest by a resident entity of one economy (direct investor) in an enterprise that is resident in another economy (the direct investment enterprise)” (Duce & España, 2003). “Lasting interest” implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence (by the direct enterprise) on the management of the enterprise. Direct investment involves both the initial transaction between the two entities and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated.

A definition of the WTO was cited by Cung (2020) that FDI occurs when an investor based in one country (the home country) acquires an asset in another country (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.” Cung (2020)

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suggested that these two definitions refer to the host country and the home country, at the same time FDI occurs when and only if both these two countries expect to receive the benefits, and the negative impact of FDI is the lowest possible. FDI definition as cited by Business Standard on its website is that “Foreign direct investment (FDI) is when a company takes controlling ownership in a business entity in another country. With FDI, foreign companies are directly involved with day-to-day operations in other countries. This means they aren’t just bringing money with them, but also knowledge, skills, and technology.” This definition implies the difference between FDI and Foreign Portfolio Investment (FPI), which means that foreign investors directly operate production and business activities in the host country.

FDI flows have been achieved on a large scale and global scope. Almost all countries and territories around the world have been attracting a certain amount of FDI; however, it only differs in quality and quantity. (Cung & Hua, 2013). The appearance of FDI flows of the home countries invests in the host countries stemming from the causes such as differences in the marginal productivity of capital, product life cycle, market access, and trade conflict reduction, logistics cost reduction, labor, and technology exploitation, and access to available natural resources. The research results of Cung (2020) show that the benefits received by the home countries when investing in other countries include: First, improving the efficiency of using investment capital. Second, FDI allows the home country’s firms to extend the life cycle of products that have been manufactured and consumed in the domestic market. Third, FDI helps the home country’s firms to create a plentiful and stable supply of raw materials at low prices. Fourth, through FDI, the home country’s investors could achieve several 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.

Cung (2019) points out several benefits for the host countries such as 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. Cung and Hua (2013) stated that the benefits for both host and home countries are addition and diversity of development investment capital, opportunity to access modern technology and advanced management, an increase in employment and labor quality, an addition to state budget revenues, opportunities for domestic enterprises to participate in the international division of labor and global production network, an improvement of competitiveness and production efficiency for domestic enterprises.

Root and Ahmed’s (1978) work is one of the earliest studies that investigated the determinants of FDI in three groups of developing countries (unattractive, moderately attractive, and highly attractive) which consists of 44 different economic, social, political, and policy determinants. The determinants mentioned in their work have repeatedly been investigated in the empirical studies focusing on FDI attractiveness, mostly on economic determinants. The four main determinants are: economic (GDP or GNP, GDP per capita, GDP growth rate, the purchasing power of the currency, the ratio of raw material exports to GDP, manufactured imports/GDP, and the ratio of exports to imports, others); social (ratio of literacy and school enrolment, availability of technical and professional workers, modernization of outlook, the strength of labors movement, the extent of urbanization); political (frequency of government change by type and period, number of internal armed attacks period, degree of administrative efficiency, degree on nationalism, colonial affiliation, others); policy (corporate taxation, tax incentive laws, attitude toward joint ventures, local content requirements, limitations on foreign personnel). The impact of factors (determinants) on FDI attraction in countries revolves around these four main determinants, which depend on policies and comparative advantages of FDI attraction of each country in different stages.

## 2. Literature Review

FDI has always been of special interest in countries where there is a need for combined exploitation of investment capital sources for rapid and sustainable development, especially for emerging economies. There have been a lot of studies on FDI and the determinants for its flow. Nayak and Dev (2003) found some determinants of FDI in India such as Surplus labor due to the rise in unemployment, retrenchments, enticing voluntary retirements, compulsory retirements, the decline in the bargaining power of labor are some of the determinants of FDI in India. Their study results also showed the important role of the labor force in attracting FDI inflows into any country. An abundant, young, and qualified labor force is one of the most important factors in FDI attraction. Ali and Guo (2005) analyzed data from 22 firms operating in China to find

an answer to what motivates these firms to invest in China. The research results showed that market size is a major factor in the determinants of FDI, especially for US firms. These findings are also consistent with observations and reality in China because China is a country with a large land area and a dense population, and is one of the largest consumer markets in the world. Demirhan and Masca (2008) employed a cross-section econometric model to identify the factors of foreign direct investment (FDI) inflows in developing countries throughout 2000-2004. The study is based on a sample of cross-sectional data on 38 developing countries. In the model, the dependent variable is FDI, and the independent variables are growth rate of per capita GDP, inflation rate, telephone main-lines per 1,000 people measured in logs, labor cost per worker in manufacturing industry measured in logs, degree of openness, risk and corporate top tax rate. According to the econometric results, in the main model, the growth rate of per capita, telephone main lines, and the degree of openness have a positive sign and are statistically significant. The inflation rate and tax rate present a negative sign and are statistically significant. Labour cost has a positive sign and risk has a negative sign. However, both are not significant. Ang (2008) used a series of time series data for the period 1960-2005 to identify the determinants of FDI in Malaysia. Consistent with the prediction of the market size hypothesis, real GDP is found to have a significant positive impact on FDI inflows. The growth rate of GDP has a small positive impact on FDI. From a policy point of view, the results suggest that increases in the level of financial development, infrastructure development, and trade openness promote FDI. On the other hand, higher statutory corporate tax rates and appreciation of the real exchange rate appear to discourage FDI inflows. The results also suggested that higher macroeconomic uncertainty encourages more FDI inflows.

Mottaleba and Kalirajan (2010) employed panel data from 68 low-income and lower-middle-income developing countries to identify the determinants of FDI inflows into developing countries. The results suggested that countries have an advantage in attracting FDI when they have larger GDP and a high GDP growth rate, higher international trade rates, and a more business-friendly environment. Mohiuddin and Salam (2011) found that several factors affected FDI in which real GDP and exchange rate have a positive effect on FDI, meaning that an increase in real GDP and appreciations in rupee increases FDI as investors see it as a positive sign for the economy and expect high profits. Wani and Rehman (2017) employed time series data for the years 2005 - 2015 by using the OLS method. The results showed that the effect of total debt service, total external debt, gross domestic product, and gross fixed capital on FDI is a strong positive sign. Some previous studies showed that inflation had a negative effect on FDI (Egbo, Onwumere, & Okpara, 2011; Omankhanlen, 2011; Faroh & Shen, 2015; Xaypanya,

Rangkakulnuwat, & Paweenawat, 2015). Besides, there are several studies on the relationship between labor and FDI in many different perspectives such as labor market flexibility as a determinant of FDI inflows (Pham, 2008), labor markets and the demand for FDI (Pandya, 2010), FDI effects on the labor market of host countries (Hale & Xu, 2016), labor costs and FDI (Saglam & Boke, 2017), FDI, labor market flexibility and employment in China (Eastin & Zeng, 2020).

In Vietnam, there are many research results on the determinants of FDI inflows into Vietnam. Cung and Hua (2013) used a secondary time series data set for the years 1999-2011. The results showed that three important factors affect FDI inflows into Vietnam namely, tax burden rates, unit labor cost, and inflation index. The tax burden rates have a negative impact on a 1% significance level. The unit labor cost has a positive impact on FDI at a 1% significance level, and the inflation index has a positive impact on FDI at a 5% significance level. Cung (2019) analyzed the relationship between real GDP and FDI in 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 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 a 1% significance level, and the impact of FDI (net inflows) on economic growth is strongest. The 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. The 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.

Cung and Nhung (2020) employed an empirical method on a secondary time series data set during the period 1999-2018 to determine the impact of economic freedom index and corruption perceptions index on foreign direct investment in Vietnam by using the linear approach. The empirical results show that the relationship between corruption perceptions index and foreign direct investment is a positive sign at a 1% significant level. The effect of economic freedom index on foreign direct investment has a positive effect at a 5% significant level. Cung (2020) examined the relationship between various factors such as FDI, foreign aid, exports, and economic growth in Vietnam. The empirical method employed secondary time-series data set during the period 1997-2018. The results showed that the relationship between FDI (net inflows), aid, exports, and GDP (current) has a positive effect at a 1% significance level.

Besides, there are many types of research on the relationship between labor and FDI in Vietnam in many different perspectives such as the impact of foreign direct investment on the labor productivity in host countries - the case of Vietnam (Pham, 2008), child labor and FDI - evidence from Vietnam (Olarreaga, Piacentini, & Nguyen, 2010), the impact of FDI, human capital on labor productivity (Nguyen, 2019). Results of a recent study by using the OLS regression method that human resources, infrastructure, and private credit have a positive and significant impact on FDI attraction in Tay Ninh province, while consumer price index was proven to affect FDI attraction negatively (Tran, Dang, & Tran, 2020). Another study investigated the determinants of FDI in Vietnam in 2000-2019 period. The results show that market size impacts positively significant on FDI attraction: 1% -1.45% (PMG) and 1% -1.25% (GMM). Besides, some other factors have positive influences as labor force, macroeconomic policy, macroeconomic stability and skilled labor. Meantime, the trade openness negatively affects FDI inflows in the short-term, while not being statistically significant in the long-term. Moreover, economic shocks often have a negative impact on FDI inflows (Ngo et al., 2020).

Based on the empirical studies of different authors via the literature reviews above, many factors affect FDI in Vietnam and other countries such as real GDP, GDP growth rate, growth rate of per capita, market size, inflation rate, tax rate, risk, financial development, infrastructure development, trade openness, international trade rates, business-friendly environment, exchange rate, total debt service, total external debt, gross fixed capital formation, labor market flexibility, labor costs, tax burden rates, business freedom index, investment freedom index, corruption perceptions index, economic freedom index, among others. Thus, within the scope of the author’s research, there are no studies conducted in Vietnam as well as other countries that studied or assessed the impact of the labor force on FDI inflows into Vietnam. Hence, the purpose of this study is to analyze the effect of the labor force and several other factors on FDI inflows to Vietnam in the period 1995-2018.

### 3. Data and Model

This study used an empirical model to identify the effect of the labor force and several other factors on FDI inflows into Vietnam. Within the scope of this study, the author performs the regression and correlation by using a linear model. To accomplish the purpose of the study, a time series secondary data set ranging from 1995–2018 is employed and collected from relevant organizations such as the World Bank and the Heritage Foundation. Ordinary Least Square (OLS) with multiple variables is used to

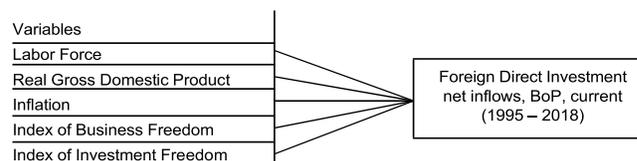
assess the relationship between the dependent variable (FDI, net inflows) and several independent variables (labor force, real GDP, inflation rate, index of business freedom, and index of investment freedom). Data was analyzed, explained, and presented by using descriptive statistics, inferential statistics such as regression, correlation. The empirical results showed that there is no serious problem to conclude a model mismatch. Figure 1 shows the relationship between five independent variables and one dependent variable.

The relationship being tested is

$$FDI = F(LF, GDP, INF, BUS, INV)$$

$$FDI = \beta_0 + \beta_1LF + \beta_2GDP + \beta_3INF + \beta_4BUS + \beta_5INV + \epsilon_t$$

With the given data, this study performed a linear regression on the relationship between five independent variables (LF, GDP, INF, BUS, INV) and the dependent variable FDI (net inflows, BoP, current) in Vietnam to analyze the impact of the labor force and several other factors on FDI in Vietnam, at the same time to compare the relationship between the labor force and other factors on FDI (see Table 1).



**Figure 1:** The Relationship between Five Independent Variables and A Dependent Variable

**Table 1:** Meaning of Variables

Variables	Meaning	Unit
FDI	Foreign direct investment, net inflows	BoP, current, Bill.US\$
LF	Labor Force	Total (million)
GDP	Real Gross domestic product	Current, Bill.US\$
ILF	Inflation, Consumer Prices	Annual %
BUS	Index of Business Freedom	Annual %
INV	Index of Investment Freedom	Annual %
$\epsilon$	Error variable	

## 4. Results and Discussion

### 4.1. Descriptive Statistics

The descriptive statistics on the relationship between the labor force and other factors including real GDP, inflation, index of business freedom, index of investment freedom on FDI (net inflows, BoP, current) in Vietnam during the period 1995–2018 is shown in Table 2

Output data in Table 2 shows, the mean of FDI reached USD 5.861125 billion between 1995 to 2018, and the annual inflation rate was 6.281417%. Vietnam is a developing country that had once belonged to the group of countries with the highest growth rate in the world; therefore, the inflation rate is suitable for a developing economy like Vietnam. The level of moderate inflation is always under the control of the Vietnamese government and has not yet exceeded the threshold of constraining economic growth; therefore, inflation is still one of the important factors to attract FDI flows into Vietnam in this period. Thus, the relationship between inflation and FDI with a positive sign is not an anomaly in the case of Vietnam. However, there is an abnormal indicator of inflation, that is, the minimum inflation rate was -1.71% in 2000. This is because, in 1997–1999, there was an Asian financial crisis, and the Vietnamese government had adopted a tight monetary and fiscal policy, and due to the impact of the 2008 financial crisis, the maximum inflation rate was 23.116%.

The minimum FDI (net inflows) was USD 1.298 billion in 2000, due to the effect of the Asian financial crisis during the period 1997–1999. FDI inflows into Vietnam gradually decreased

from USD 2.22 billion in 1997 to USD 1.298 billion in 2000, gradually increasing from 2003 and then increasing sharply in 2007 to USD 6.7 billion. The mean labor force was 47.668120 million, which shows that about 55–60% of the total population have become laborers. In this period, Vietnam's labor force was abundant and young, and the labor force increased over time; however, the growth rate between the following year and previous year decreased (for example, 2.38% in 1995, 0.94% in 2018) and the aging population is a concern for the Vietnamese government. Encouraging people to get married before the age of 30 and give birth early has been declared by the Vietnamese government starting in early 2020. The average annual growth rate of the labor force and FDI (net inflows) during the period 1995–2018 were 1.9% and 13.16% respectively, which means that more and more FDI projects have used high-quality labor in Vietnam. This also proves that the Vietnamese government has not been attracting FDI projects that employ many unskilled laborers and exploit natural resources.

### 4.2. Correlation and Regression Analysis

#### 4.2.1. Correlation and Regression Analysis between FDI and Independent Variables

The correlation analysis was undertaken between FDI (net inflows, BoP, current) and explanatory variables such as labor force, GDP, inflation, index of business freedom, and index of investment freedom. The impact of factors on FDI (net inflows, BoP, current) could be a positive or negative sign as shown in Table 3.

**Table 2:** Descriptive Statistics

	FDI	LF	GDP	INF	BUS	INV
Mean	5.861125	47.66812	97.94004	6.281417	51.46250	25.83333
Maximum	15.50000	56.93342	244.9480	23.11600	63.80000	30.00000
Minimum	1.298000	37.09998	20.73600	-1.710000	40.00000	15.00000
Std. Deviation	4.654614	6.356718	73.55227	5.367139	10.82147	6.197241
Observations	24	24	24	24	24	24

Source: Descriptive Statistics Output of Data Collected

**Table 3:** Correlation Matrix between GDP and Independent Variables

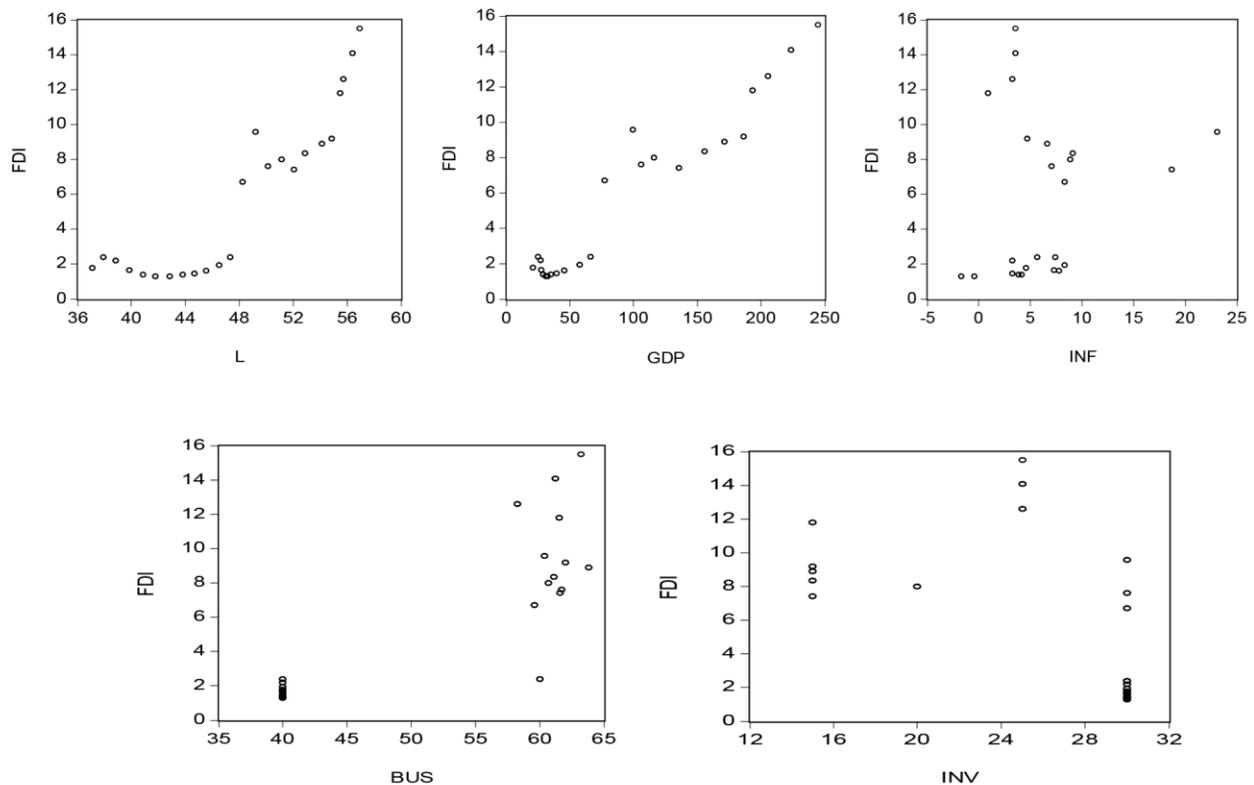
	LF	GDP	INF	BUS	INV	FDI
LF	1					
GDP	0.94870	1				
INF	0.16769	0.05946	1			
BUS	0.87971	0.83844	0.36033	1		
INV	-0.69563	-0.70257	-0.14543	-0.66403	1	
FDI	0.89661	0.96099	0.15842	0.85189	-0.58837	1

Source: Correlation Output of Data Collected

**Table 4:** Regression Analysis Results for GDP and Explanatory Variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.30040	11.45419	-2.819965	0.0113
LF	0.352552	0.158888	2.218872	0.0396
GDP	0.074842	0.008028	9.322794	0.0000
IFL	0.111129	0.049341	2.252250	0.0370
BUS	0.089653	0.046233	1.939160	0.0683
INV	0.179528	0.048653	3.689939	0.0017
R-squared	0.965140	F-statistic		99.66915
Durbin-Watson stat	2.083803	Prob(F-statistic)		0.000000

Source: Correlation Output of Data Collected

**Figure 2:** Correlation between an independent variable and a dependent variable

The output shows that there is a positive correlation between FDI and labor force, GDP, inflation, index of business freedom, and index of investment freedom.

#### 4.2.2. Model Fitness

In Table 3, the regression results indicate that the model is consistent with economic theory and statistically significant at a 1% significance level (Prob(F-statistic) = 0.000000). There is a significant positive effect between FDI net inflows and real

GDP and index of investment freedom at a 1% significance level. The relationship between FDI net inflows and labor force and inflation is a positive sign at a 5% significance level. Index of business freedom has a weak positive effect on FDI net inflows at a 10% significance level. Further, R-squared = 0.965140, which is the explanatory level of the determinants of FDI at current prices in terms of  $R^2$  by 96.5140%. This means that around 96.51 percent of the variation in FDI is explained by this model via labor force, real GDP, inflation, index of business freedom, and index of investment freedom. The value

$d$  of Durbin-Watson test is  $d = 2.083803$  at a 5% significance level ( $\alpha = 5\% = 0.05$ ). The sample numbers  $n = 24$ , independent variables in the model  $k = 5$ , inferred  $d_L = d_U = 0.925$  and  $d_U = 1.902$ . Due to  $d_U = 1.902 < d = 2.083803 < 4 - d_U = 2.098$ , the model does not have autocorrelation phenomena grade 1. The following is an analysis of the regression results to show the importance of each factor on Vietnam's FDI attraction during the period 1995-2018.

### **Labor Force**

Economic theory and practice in developed countries as well as developing countries confirm that the relationship between the labor force and FDI attraction is positive. This means that other factors being constant, the increase in the labor force at sufficient and diversified levels will create an attraction for FDI inflows into any country, but only suitable for countries attracting FDI projects using more labor. However, in the long run, an increase in the number of laborers but not an increase in labor quality will lead to the risk of a decline in FDI inflows. Many countries in the early stages of development (from underdeveloped countries to developing countries) mainly use the competitive advantage of young and cheap labor, abundant and diversified natural resources, and many policy incentives to attract FDI flows. However, these countries have found that unskilled labor is no longer a competitive advantage in attracting FDI flows, at the same time, due to the continuous development of science, technology, and consumer demand, firms require FDI to change technology lines in production, business, and corporate governance. Therefore, a quick shift from unskilled labor to skilled labor by changing the growth model and improving the quality of human resource training helps to attract FDI into Vietnam.

Although annual growth rates of Vietnam's labor force decreased during 1995-2018 from 2.38% in 1995 to 0.94% in 2018 the number of the labor force increased over the years. For example, from 37.099978 million in 1995 to 48.232146 million in 2007 and 56.933418 million in 2018. The statistical results in Table 3 show,  $\hat{\beta}_1 = 0.352552$ , in constant conditions of other factors, if the labor force increases to 1 million people, FDI (net inflows, BoP, current) increases to USD 0.352552 billion. Thus, from the results of correlation analysis in Table 2 and regression analysis in Table 3, an increase in the labor force has a positive and significant effect on FDI inflows to Vietnam. This result reflects true reality in Vietnam, which means that Vietnam has recently been transforming its growth model to attract skilled labor-employing projects, nevertheless, FDI inflows still come into Vietnam with unskilled labor-intensive projects or/and product assembly and cheap labor costs. These results are consistent with economic theory and the author's new findings because, within the scope of the author's research, this study has not yet detected any research results on the relationship between the labor force and FDI in Vietnam.

### **GDP at current prices**

Economic growth has a strong attraction for foreign investors in general and FDI in particular because the high growth of an economy is closely related to profitability ratios and expanded reinvestment of foreign investors. A country like Vietnam with an annual economic growth rate that belongs to the group of countries with the highest growth rates in the world still maintains its attraction to foreign direct investors. Besides, empirical evidence in different countries confirms that the relationship between economic growth and FDI attraction is a positive sign and also consistent with economic theories. The economic growth rate of the Vietnamese economy over the years has always created attention for foreign investors. Evidence that FDI net inflows gradually increased rapidly from USD 1.78 billion in 1995 to USD 15 billion in 2018, after 24 years increased by 8.43 times. Meanwhile, the average annual economic growth rate during the period 1995-2018 was about 6.75%, GDP at current prices increased from USD 20.736 billion in 1995 to USD 244.948 billion in 2018. The regression results in Table 3 show that the relationship between FDI and GDP is a positive sign at a 1% level of significance. Similarly,  $\hat{\beta}_2 = 0.074842$  shows that other factors being constant, if GDP at current prices increases to USD 1 billion, FDI net inflows increases to USD 0.074842 billion. This result is consistent with the economic theories and findings of Ang (2008), Mottaleba and Kalirajan (2010), Mohiuddin and Salam (2011), Cung (2019), Cung (2020).

### **Annual Inflation Rate**

Inflation could be a driving force or obstacle to socio-economic development in both developed and developing countries (Cung & Hung, 2020). This means that the impact of inflation on economic growth as a positive or negative sign depends on each country's inflation rate. A higher inflation rate that exceeds the optimal threshold of an economy results in a decrease in FDI flows into any country, therefore controlling an appropriate inflation rate will create an effective business environment for foreign investors. Due to the importance of inflation to the economy, Vietnam's government always has flexible solutions to control a reasonable inflation rate to achieve the annual socio-economic goals including the goal of attracting FDI flows; therefore the average annual inflation rate during the period 1995-2018 was 6.75% which is suitable for a developing economy like Vietnam. In Table 3, the regression results indicate that the impact of the annual inflation rate has a positive sign and is significant on FDI net inflows at a 5% significance level. Similarly,  $\hat{\beta}_3 = 0.111129$  shows that other factors being constant, if the annual inflation rate increases to 1%, FDI net inflows increases to USD 0.111129 billion. Thus, the inflation rate remained within the positive threshold

of Vietnam's economy for FDI attraction in the period 1995–2018, which means that it did not the optimal threshold. This result is consistent with the finding of Cung and Hua (2013).

### **Business Freedom Index**

According to *The Global Economy*, the index of business freedom is a set of 10 indicators by using data from the “*World Bank's Doing Business Study*”: Starting a business—procedures (number), time (days), cost (% of income per capita), and minimum capital (% of income per capita); Obtaining a license—procedures (number), time (days), and cost (% of income per capita); Closing a business—time (years), cost (% of estate), and recovery rate (cents on the dollar). The business freedom index reflects a part of the economic freedom index and measures the policy of business freedom in a country. In theory as well as practice an increase in the freedom of business index results in an increase in FDI inflow. The descriptive statistical analysis shows that Vietnam's business freedom score increased over the years from 1995 to 2018 from 40 percent in 1995 to 63.5 percent in 2018. According to the regression results, as shown in Table 3, the index of business freedom has a weak positive effect on FDI net inflows at a 10% significance level. Based on the slope of  $\hat{\beta}_4 = 0.089653$ , if the index of business freedom increases by 1 percent then FDI net inflows would increase to USD 0.089653 billion. The research results on the relationship between the index of business freedom and FDI net inflows are consistent with economic theory and the findings of Cung (2019), Cung and Nhung (2020).

### **Investment Freedom Index**

Investment liberalization is one of the trends of economic globalization, the movement of investment capital among countries will gradually reduce economic as well as non-economic barriers. Cung (2019) stated that investment liberalization is a solution or measures to reduce or eliminate barriers that hinder investment activities from one country to another to create a more competitive and equitable investment environment, and favorable conditions for the movement of investment capital among countries, therefore, investors of the home countries will be more willing to invest in the host countries. This analysis temporarily asserts that the investment freedom index and FDI inflows have a positive relationship but weak or strong depending on the practice of improving this index in each country, which means that other factors being constant, an increase in investment freedom index increases by attracting FDI flows. In Table 3, the empirical results show that the impact of the investment freedom index has a strong positive sign on FDI net inflows at a 1% significance level. Based on the slope of  $\hat{\beta}_5 = 0.179528$ , if the index of investment freedom increases by 1 percent then FDI net inflows would increase to USD 0.179528 billion. Comparing

the impact of investment and business freedom index on FDI shows a clear difference. The influence of investment freedom on FDI net inflows is higher than business freedom. This result also reflects the reality of seriously implementing Vietnam's international commitments on economic liberalization in general and investment liberalization in particular in the process of international economic integration. Vietnam always sees foreign investment as one of the important sources of capital for socio-economic development; therefore liberalizing foreign investment activities by expanding business activities and implementing a non-discriminatory regime dealing with foreign investors is needed. The research results on the relationship between the index of investment freedom and FDI net inflows are consistent with economic theory and the findings of Cung (2019).

## **5. Conclusion and Policy Implication**

This study aims to analyze the impact of the labor force and several other factors on FDI net inflows in Vietnam during the period 1995–2018. The empirical results show that the effect of the labor force and inflation on FDI net inflows is positive at a 5% level of significance; real GDP and the index of investment freedom is positive at a 1% significance level on FDI net inflows, and the index of business freedom on FDI net inflows is positive at a 10% significance level. According to the findings of this study, the author will propose several policy implications as follows.

*First*, as a developing country, after many years of high economic growth, there has been a decline in economic growth. This is because the current growth model is outdated and no longer seems suitable for industrial revolution 4.0. Therefore, Vietnam currently is changing the growth model of using unskilled labor and natural resource exploitation to skilled labor, high and environmentally friendly technology. However, to have a labor force of sufficient quantity and high quality suitable with the new growth model and attracting FDI projects with high technology in the following years, a recommendation for Vietnam is to continue to maintain a young population through appropriate population policies, quickly improving the quality of human resource through adequate and high-quality training, professional development training, and imparting knowledge mainly to increase soft skills. Based on the statistical data posted on foreign investment electronic newspaper under the Ministry of Planning and Investment of Vietnam, 37% of the recruited workers are unable to meet the job requirement, 39.86% of FDI firms are labor shortage, many FDI firms take 1–2 years to retrain the recruited workers. To improve the quality of human resources, promoting the link between enterprises and training institutions is considered necessary because this relationship has not yet been developed in Vietnam for a long time.

*Second*, after the COVID-19 pandemic, Vietnam needs to continue to maintain high economic growth through the application of flexible monetary and fiscal policies, at the same time controlling annual inflation rate consistent with the goals of socio-economic development in each year or/and different periods. Thus, with a high growth rate and optimal inflation rate, Vietnam will be able to attract foreign investors including FDI projects and Vietnam can compete with other countries such as China, India, Thailand, Malaysia, Indonesia, and many other countries in attracting FDI inflows.

*Third*, the index of economic freedom reflects the openness of an economy and also has a positive effect on attracting FDI flows between countries. From the results of this study, Vietnam needs to improve the business freedom index and investment freedom index in the following years, because these two indexes of Vietnam are lower than many countries in the region during the period 1995-2018, such as China (52.3% and 33.1%), Thailand (71.4% and 48.1%), Malaysia (78.3% and 44%), Indonesia (53% and 44.4%), Cambodia (41% and 49.6%), and Vietnam (51.5% and 25.8%).

This study is based on the impact of the labor force and several other factors (GDP, inflation, index of business freedom, index of freedom of investment) on attracting FDI inflows into Vietnam. There are other factors that influence FDI attraction such as tax burden, distance, per capita income, market size, and so on. Therefore, future studies will supplement these variables or a comparative analysis of a correlation context among countries in the region.

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