Mediterranean Journal of Basic and Applied Sciences (MJBAS)
Volume 8, Issue 2, Pages 101-116, April-June 2024

The relationship between Foreign investment (FDI), Trade internationalization and Labor productivity in Vietnamese localities

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DOI: https://doi.org/10.46382/MJBAS.2024.8209

Article Received: 12 March 2024 *Article Accepted: 19 May 2024* *Article Published: 24 May 2024*

ABSTRACT

This article studies the impact of FDI and international trade on labor productivity of Vietnamese provinces. Analyzing a sample of 63 provinces in the period 2010-2021, the research findings indicate positive impacts of FDI disbursed in the provincial economy. The number of employees in active FDI enterprises and exports on the labor productivity. In contrast, the number of active FDI enterprises and imports have insignificant effects on labor productivity; meanwhile, the economic growth influence negatively the labor productivity of provinces. On the basis of research results, we propose recommendations for attracting FDI implying large capital scale and high labor use: at the same time, it is necessary to increase exports by controlling selectively imports in order to improve labor productivity for Vietnamese provinces.

Keywords: Foreign direct investment; International trade; Export; Import; Labor productivity; Province; Vietnam.

1. Introduction

The contributions of foreign direct investment (FDI) affirm the important role of this capital source in the socio-economic development strategies of countries, especially for developing countries like Vietnam. FDI provides opportunities for exposure to new production and management methods and techniques, facilitating the transfer of knowledge and technology to the economy receiving investment, thereby improving labor productivity and productivity. Besides FDI, in the trend of integration and globalization, international trade is also assessed by national governments and researchers as having a role in improving labor productivity through increasing economic efficiency according to regulations, scale, increase competitiveness, rationalize economic structure and innovate production and management technology. Because of those benefits, countries strive to promote the expansion of international trade based on exploiting their comparative advantages.

In fact, Vietnam's statistical data in the period 2010-2021 illustrates that the fluctuating trends of FDI, import-export and labor productivity are related in the same direction. Specifically, accumulated active FDI capital into Vietnam increased continuously, reaching 419.9 billion USD by the end of the year with 34,479 active projects. Similarly, Vietnam's total export and import turnover also grows steadily, reaching a record level of 732.5 billion USD in 2022, an increase of 9.5% compared to 2021 (General Statistics Office, 2022). Vietnam's labor productivity growth trend, although slow, also fluctuates with FDI capital and imports and exports nationwide; Specifically, the average in the period 2011-2020 reached 5.11%/year, higher than most ASEAN countries (ILO, 2016).

Empirical studies around the world have demonstrated the impact of FDI and international trade on labor productivity in countries. However, there are still limitations in the number and number of research subjects. Typically in Vietnam, there are not many studies on the role of FDI, especially almost no research on the relationship between international trade and labor productivity. This research gap is even more urgent when most scholars focus on research objects that are countries, or the national level; Most use time series analysis. This

research, therefore, focuses in-depth on the local level of a developing country, Vietnam, in order to collect a data scale large enough in quantity to conduct multivariate regression analysis and test. Determine the impact of FDI and international trade on labor productivity at the local level in Vietnamese provinces/cities.

2. Theoretical Basis

2.1. Overview of labor productivity

In general terms, productivity measures the ratio of some measure of output to some measure of input usage (Samuelson & Nordhaus, 2009). More specifically in production and business, productivity is the arithmetic ratio between the number of products produced and the number of resources used in the production process. This implies that productivity can be thought of as output per unit of input, or the efficiency of use of resources. Therefore, there are two ways to increase productivity: reduce input with a fixed amount of output or increase output with a fixed amount of input. Productivity is approached in two directions: total factor productivity (TFP) and partial productivity (Sickles & Zelenyuk, 2019). Aggregate productivity is calculated between output and the composite input index, which is the sum of basic resource inputs, especially labor, means of production and natural resources. Partial productivity measures output per unit of specific input, thereby forming specific concepts for each type of productivity. For example, with the input being a unit of labor, the concept of labor productivity is formed as the number of output products produced per unit of labor. At the macro level such as national and local levels, a common measure of output is Gross Domestic Product (GDP), while the unit of labor input is usually working hours or workers. Because it is difficult to calculate the total number of hours worked in a country or locality, labor productivity is commonly calculated by GDP/worker; in other words, measuring how much GDP value each worker creates (Saurav & Ryan, 2020).

Assessing the role in economic development, scholars all agree that labor productivity is one of the two main driving forces, along with resource accumulation, of national economic growth. If resource accumulation promotes growth by injecting more inputs into economic activity, then increasing labor productivity helps economic agents increase their ability to convert these inputs into outputs. If labor productivity does not increase, economic growth will be subject to physical limits related to the number of workers and the limited supply of natural resources. Helpman (2004) shows that more than 60% of differences in qualifications and 90% of differences in growth rates between countries are explained by differences in labor productivity (the remaining is due to differences in labor productivity, physical conditions and human capital). Therefore, it can be said that labor productivity is an important driving force of economic growth; Productivity research is always urgent not only for economic growth, but also because labor productivity is the key to improving living standards and increasing welfare; reduce poverty, especially in poor and developing countries; and is the key to a healthy living environment (ILO, 2016).

2.2. Theory on the impact of FDI on labor productivity

To analyze the relationship between foreign direct investment (FDI) and labor productivity, it is necessary to clearly understand this activity. According to the International Monetary Fund (IMF, 1993) and the Organization

for Economic Co-operation and Development (OECD, 1996), FDI aims to obtain "long-term benefits" of an entity in an economy (employer). direct investment) to a resident unit in another economy (FDI enterprise). "Long-term benefits" require a long-term relationship between the investor and the FDI enterprise, as a direct investment and a significant influence on the enterprise's business and property management activities. In essence, FDI is an international capital flow of long-term nature, associated with capital flows, know-how and technology for production, business and management, and other related issues that have a direct impact on the economy. operations of the enterprise established in the investment recipient country.

Assessing the role of FDI, most empirical studies provide evidence of a positive impact on labor productivity in the host country. Caves (1974) pioneered the positive correlation between FDI and productivity using time series data. This relationship is explained according to two approaches: direct and spillover impacts of FDI. Specifically, to gain a superior competitive advantage over local enterprises, foreign investors not only invest capital but also transfer management know-how and technology to FDI enterprises (Liu and al., 2016). Thanks to that, labor productivity of FDI enterprises is higher than that of domestic enterprises. Girma et al (2015) also find that productivity gains in FDI firms are larger when the level of foreign ownership is higher across the industry. From there, it contributes to increasing the average labor productivity of the receiving country.

FDI not only has a direct impact through FDI enterprises but also creates a spillover effect on the entire economy. Domestic enterprises can benefit from the presence of FDI in the same industry, leading to horizontal or intra-industry spillover effects, through labor mobility and competitive effects. On the other hand, FDI is also said to have inter-industry or vertical spillover effects (Driffield et al., 2002). Helpman (1999) also points out that economic relationships with multinational companies provide learning opportunities for local businesses, thereby reducing innovation costs and improving labor productivity. Blomström & Wolff (1989) observed in developing countries and found that FDI inflows can reduce the technology gap between domestic and foreign enterprises, while creating favorable conditions for the receiving country, private access to technology from more developed countries; thereby contributing to improving labor productivity in the host country. FDI affects many fields including agriculture (Pham Anh Dung et al., 2023), banks (TD Thang et al, 2024), etc.

An empirical study in Vietnam has demonstrated the positive impact of FDI on labor productivity. Tran Van Nguyen & Do Thi Thu Ha (2018) researched five ASEAN-5 countries and showed that FDI has a positive short-term relationship with labor productivity in Vietnam, Thailand, Indonesia and Malaysia. Do Thi Phuong (2020) also clarified that Vietnam has been quite successful in attracting FDI in the recent period and affirmed that FDI has a pervasive impact on labor productivity. Also in Vietnam, Pham Hong Chuong & Ho Dinh Bao (2021) successfully tested the positive spillover effects of FDI on labor productivity and technological change of domestic enterprises.

Supporting the views and results of the above studies, the first hypothesis is proposed about the positive impact of FDI on labor productivity. Specifically:

Hypothesis 1: FDI has a positive impact on labor productivity in developing countries.

2.3. Theory on the impact of international trade (import and export) on labor productivity

According to the United Nations Commission on International Trade Law (UNCITRAL), international trade is all commercial transaction activities carried out between countries to promote the transfer of goods, services, resources, people, ideas and technology, serving the business goals of businesses, individuals and economic organizations. International trade takes place in many different forms such as: transporting goods from one country to another (import and export); contractual agreements allowing foreign companies to use products, services and processes from other countries (licensing, franchising); formation and operation of sales, manufacturing, research and development, and distribution facilities in foreign markets.

International trade affects host country labor productivity in four ways (Edwards, 1998; Hung et al., 2004; Rijesh, 2019). Firstly, according to economies of scale, the development of international trade opens up export market opportunities, allowing businesses to produce on a larger scale, thereby achieving effective production scale. Productivity growth due to scale can be achieved in two ways (Hung et al., 2004): first, keeping output the same but reducing costs to the lowest level by reducing average fixed costs in overhead costs. product unit; Second, expand market opportunities, mainly for export enterprises, promoting enterprises to make fixed investments to increase labor productivity.

Second, international trade increases competitive pressure in the domestic market. Imports appeared, forcing domestic manufacturers to increase efficiency to maintain their competitive position and profit margins (Rijesh, 2019). Specifically, cheaper imported products force domestic businesses to improve labor productivity by investing in research & development, through business restructuring, and learning from competitors. abroad (Hung et al., 2004).

Third, international trade promotes production specialization on the basis of countries' comparative advantages, thereby improving labor productivity and enterprise competitiveness. As domestic firms compete effectively with imports and less efficient firms exit, average industry productivity will increase (Hung et al., 2004). On the other hand, cheap imports will substitute for low-productivity domestic industries and free up resources, which can then be reallocated to industries with better technological opportunities, promote average productivity growth over time (Rijesh, 2019).

Fourth, international trade has technological spillovers, which occur when domestic firms invest in research and development to upgrade skills, intellectual capital, and the overall productivity of the economy. economy, for competitive purposes or to achieve economies of scale (Hung et al., 2004). In other words, trade creates technology spillovers through imports and exports to partner countries (Helpman, 1999). Specifically, the import of intermediate goods and capital goods contributes to the transfer of new technology from the exporting country to the importing country; importing final products from technologically advanced countries allows importing countries to become familiar with high-quality and technologically superior products, leading to learning, reverse engineering or imitation. . Similarly, exporting creates opportunities for domestic businesses to interact with foreign businesses and learn how to improve products, processes and production management skills, thereby

gradually improving them. and optimize your production and business activities to gain a competitive advantage in the market (Rijesh, 2019).

In agreement with world scholars, some domestic authors, although a very limited number, also found a positive relationship between international trade and labor productivity. Specifically, empirical research by Nguyen Anh Tuyet (2020) found that exports have a positive impact on an enterprise's labor productivity: when an enterprise's exports increase by one unit, labor productivity increases by 1.11e-08 units; The group of export enterprises alone will increase 0.0141 units of labor productivity. Pham Dinh Long & Nguyen Chi Tam (2020) also clarify the effect of learning from export on the labor productivity of Vietnamese small and medium enterprises when participating in the export market.

Approaching from a macro perspective of local economies, this study supports the positive impact of international trade on local labor productivity. 02 hypotheses are proposed corresponding to exports and imports as follows:

Hypothesis 2a: Exports have a positive impact on labor productivity in developing countries.

Hypothesis 2b: Imports have a positive impact on labor productivity in developing countries.

3. Research Methods

To evaluate the impact of FDI and international trade on labor productivity in Vietnam, this study approaches analysis at the local level of provinces/cities. Data are collected according to Vietnam statistical yearbooks and yearbooks of provinces and cities in the period 2010-2021. Although they are secondary data sources, these data are official data, provided by State management agencies should ensure high accuracy and reliability. The collected data were then filtered to remove all years with incomplete data; Finally, a research sample was formed including data from 63 provinces/cities with a total of 685 years of observation in the period 2010-2021.

Regarding research variables, the dependent variable labor productivity is measured by average GDP per local worker. On the other hand, because it is difficult to measure the spillover effect of FDI, 03 independent variables related to FDI are used to test the direct impact of this factor. 02 independent variables of export and import were established to test the impact of international trade on local labor productivity. A control variable for economic growth is also included to capture more information about the characteristics of the local economy.

To limit the misleading impact from the scale of the economy, the research variables are measured as a ratio to the corresponding total quantity in the economy. According to a literature review on the impact of FDI on local enterprise productivity in terms of finance, competitiveness & innovation by the World Bank, the scale and specific variables are presented in the table below. .

Table 1. Scale of research variables

Var	**Sign**	**Measure**
Tỷ trọng vốn đầu tư khu vực FDI so với tổng vốn đầu tư trong nền kinh tế địa phương (Proportion of investment	X1	$= \frac{Vốn\ đầu\ tư\ khu\ vực\ FDI}{Vốn\ đầu\ tư\ trong\ nền\ kinh\ tế}$

capital in the FDI sector compared to total investment capital in the local economy).		
Tỷ trọng số doanh nghiệp khu vực FDI trong tổng số doanh nghiệp đang hoạt động tại địa phương (Proportion of FDI sector enterprises in the total number of enterprises operating locally).	X2	$= \frac{Số\ DN\ FDI\ đang\ hoạt\ động}{Số\ DN\ đang\ hoạt\ động}$
Tỷ trọng số lao động trong khu vực FDI trong tổng số lao động tại địa phương (Proportion of workers in the FDI sector in the total number of local workers).	X3	$= \frac{Lao\ động\ khu\ vực\ FDI}{Tổng\ lao\ động\ trong\ DN}$
Tỷ trọng giá trị xuất khẩu so với GDP của địa phương (Proportion of export value compared to local GDP).	X4	$= \frac{Giá\ trị\ xuất\ khẩu}{GDP}$
Tỷ trọng giá trị nhập khẩu so với GDP của địa phương (Proportion of import value compared to local GDP).	X5	$= \frac{Giá\ trị\ nhập\ khẩu}{GDP}$
Tăng trưởng kinh tế GDP của địa phương (Economic growth of local GDP).	X6	$= \frac{GDP}{GDP\ năm\ trước} - 1$
Năng suất lao động của địa phương (Local labor productivity).	Y	$= \frac{GDP}{Tổng\ lao\ động\ đang\ làm\ việc}$

Table 2. Descriptive analysis of research variables

Biến	N	Giá trị nhỏ nhất	Giá trị lớn nhất	Giá trị trung bình	Độ lệch chuẩn
X1	685	0.000	461.455	13.847	24.509
X2	685	0.029	18.104	2.060	2.692
X3	685	0.010	77.159	21.005	20.625
X4	685	0.000	639.966	55.058	83.511
X5	685	0.000	1,331.305	49.899	94.801
X6	685	-15.310	53.200	8.070	4.941
Y	685	7.153	10.731	7.837	0.290

The regression model is built as follows:

$$Y = a0 + a1*X1 + a2*X2 + a3*X3 + a4*X4 + a5*X5 + a6*X6 + \varepsilon$$

In there:

a0 to a6: coefficients to find;

Y: Local labor productivity;

X1, .., X5: independent variables on FDI and local import and export;

X6: control variable;

ε: error.

4. Research Results

In this section, the article will first analyze the current status of FDI, import-export situation and labor productivity of Vietnamese provinces/cities according to statistical data, thereby modeling the fluctuation trend of these indicators. this number in the period 2010-2021. Next, the results of regression analysis are used to test the impact of FDI and import-export on labor productivity of Vietnamese localities.

4.1. Current status of FDI attraction, import-export situation and labor productivity of localities

Regarding the FDI attraction situation, according to the General Statistics Office (2022), cumulatively by 2021, the country has 34,479 active FDI projects with a total accumulated registered capital of nearly 419.9 billion USD. Among them, City. Ho Chi Minh ranked first in the ranking of the 10 provinces and cities attracting the most FDI, with a total registered investment capital of over 52.9 billion USD, accounting for 12.6% of the total registered investment capital. Binh Duong ranked second with nearly 37.8 billion USD, accounting for 9% of the country's total investment capital. Hanoi ranked third with nearly 37.6 billion USD, accounting for nearly 9% of total investment capital. Next are Dong Nai, Ba Ria - Vung Tau, Hai Phong, Bac Ninh... In terms of number of projects, large provinces and cities with favorable infrastructure attract the most investment projects. Leading the way is City. Ho Chi Minh City with 10,394 projects, accounting for 30.1% of the total accumulated active FDI projects. Ranked second is Hanoi with 6,700 projects, accounting for 19.4% of the total number of projects. Binh Duong ranked third with 4,022 projects, accounting for 11.7%. Next are provinces with many industrial parks such as Dong Nai, Bac Ninh, Long An, etc.

Table 3. 10 localities attracting the most FDI in the period up to 2021

No.	Province	Total active registered FDI capital (million USD)	Number of accumulated active FDI projects
1	Hồ Chí Minh	52,9216	10,394
2	Bình Dương	37,7916	4,022
3	Hà Nội	37,5821	6,700
4	Đồng Nai	33,9993	1,796
5	Bà Rịa - Vũng Tầu	33,0144	517

6	Hải Phòng	23,6091	897
7	Bắc Ninh	22,4852	1,717
8	Thanh Hóa	14,7153	168
9	Long An	12,2707	1,253
10	Hà Tĩnh	11,7392	79
	Country	**419,8841**	**34,479**

SOURCE: Statistical yearbook of provinces/cities and Vietnam 2021.

Regarding the current status of export and import, according to the Ministry of Industry and Trade (2022), by the end of 2021, the country's export turnover reached nearly 336.2 billion USD, an increase of about 19% compared to the previous year. City. Ho Chi Minh leads the country with export value reaching 44.9 billion USD, accounting for nearly 13.4% of total export turnover, up 1.2% compared to 2020. Ranked second is Bac Ninh with nearly 44% of total export turnover. 9 billion USD, accounting for 13.3% of total export turnover and up 14.7% compared to 2020. Ranked third is Binh Duong with export value reaching 32.7 billion USD, accounting for 9.7% and increasing 18% over the same period. Regarding imports, in 2021 the whole country imported with a total value of more than 332.8 billion USD. Among them, City. Ho Chi Minh, Bac Ninh and Hanoi are the three leading provinces and cities in import value. Specifically, City. Ho Chi Minh imported more than 60.2 billion USD, accounting for 18% of the total import turnover of the country, Bac Ninh ranked second with an import turnover of nearly 38.4 billion USD, accounting for 11.5% of the total import turnover. imports, and Hanoi ranked third with 35.8 billion USD, accounting for nearly 10.8% of total import turnover. In summary, the country's import-export turnover in 2021 reached 669 billion USD, of which, City. Ho Chi Minh leads with 105.1 billion USD, accounting for 15.7% of total import-export turnover, Bac Ninh ranks second with import-export value of 83.2 billion USD, accounting for 12.4% of total turnover. Import and export, ranked third is Binh Duong with 58.3 billion USD and accounting for 8.7% of total import and export turnover. The next locations are Hanoi, Thai Nguyen, Hai Phong, Dong Nai, Bac Giang, Hai Duong and Phu Tho.

Table 4. 10 localities with the highest import-export turnover in 2021

Unit: million USD

	Province	**Export**
1	Hồ Chí Minh	44,9020
2	Bắc Ninh	44,8530
3	Bình Dương	32,7430
4	Thái Nguyên	29,0975
5	Hải Phòng	23,8161

Province	**Import**
Hồ Chí Minh	60,2196
Bắc Ninh	38,3724
Hà Nội	35,8317
Bình Dương	25,5572
Hải Phòng	20,5330

Province	**Ex import**
Hồ Chí Minh	105,1216
Bắc Ninh	83,2254
Bình Dương	58,3002
Hà Nội	51,3323
Thái Nguyên	46,8748

6	Đồng Nai	21,7610	Đồng Nai	18,7404	Hải Phòng	44,3491
7	Bắc Giang	16,1130	Thái Nguyên	17,7773	Đồng Nai	40,5014
8	Hà Nội	15,5006	Bắc Giang	15,3922	Bắc Giang	31,5052
9	Hải Dương	9,9787	Vĩnh Phúc	9,8902	Hải Dương	17,6760
10	Phú Thọ	8,2503	Phú Thọ	8,4711	Phú Thọ	16,7214
	Country	336,1668	Country	332,8426	Country	669,0094

SOURCE: Ministry of Industry and Trade (2022).

Regarding the labor productivity situation of Vietnam, according to the General Statistics Office (2022), in 2021, the labor productivity of the entire economy is estimated to reach 172.8 million VND/worker, 3.9 times higher than last year. 2010 (44 million VND/worker). Of which, Ba Ria - Vung Tau's labor productivity ranks first in the country with 585.9 million VND/worker, 3.4 times higher than the national labor productivity, ranked second is Quang Ninh with 364.3 million VND. VND/worker, 2.1 times higher than the national productivity and Hai Phong ranked third with labor productivity reaching 312.2 million VND/worker, 1.8 times higher than the national labor productivity.

Table 5. 10 localities with the highest labor productivity in 2021

No.	**Province**	**Labor productivity (million VND)**
1	Bà Rịa - Vũng Tầu	585,9
2	Quảng Ninh	364,3
3	Hải Phòng	312,2
4	Bắc Ninh	305,1
5	Hồ Chí Minh	299,5
6	Hà Nội	278,0
7	Bình Dương	244,0
8	Vĩnh Phúc	239,1
9	Đồng Nai	226,8
10	Thái Nguyên	213,2
	country	***172,8***

SOURCE: Statistical yearbook of provinces and Vietnam 2021.

Generalizing, from the chart of FDI capital fluctuations in the figure below, import-export and labor productivity in the period 2010-2021, it can be seen that, basically, FDI capital, import-export value and productivity Vietnam's labor force tends to increase gradually over the years in the period 2010 - 2021. In particular, 2021 will have outstanding increases in both FDI capital, import-export and labor productivity. Specifically, FDI capital in 2021 increased by 8.7% compared to 2020, export value increased by 19%, imports increased by 26.6%, total

import-export turnover increased by 22.7% compared to 2020, capacity Labor productivity also increased from 150.1 million VND/worker (2020) to 172.8 million VND/worker (2021). Overall, the above data shows that FDI, import-export and labor productivity have a positive and positive relationship with each other. This will be verified by regression analysis for provinces and cities in the following section.

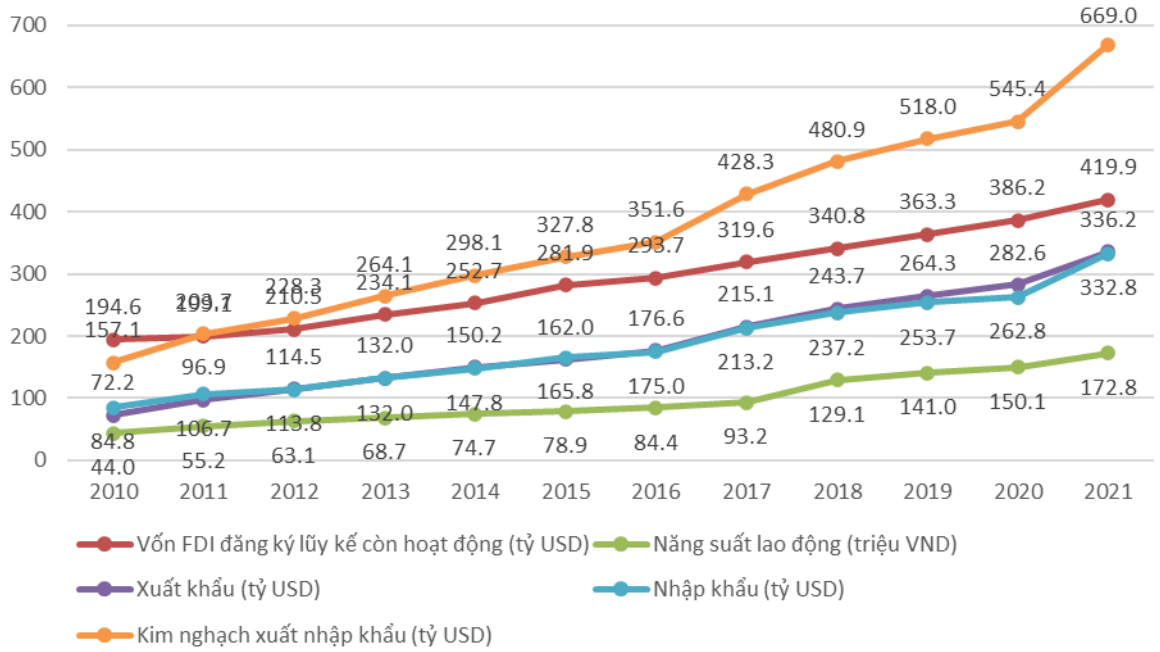

Figure 1. Fluctuations in FDI capital, import-export and Vietnamese labor productivity in the period 2010-2021

SOURCE: Ministry of Industry and Trade (2022).

4.2. Results of quantitative analysis and hypothesis testing

The results of regression analysis using SPSS software are presented in the table below for 6 independent variables related to FDI and 01 variable controlling local economic growth. Accordingly, the statistical value F = 34.807; Sig. = 0.000 < 0.05 shows that the model fits the collected data and there exist meaningful explanatory variables. The results of multicollinearity analysis of the model show that VIF values are all less than 4, ensuring that this phenomenon does not exist in the regression model. These indicators allow to confirm that the regression model reaches a reliable level.

Table 6. Results of regression analysis

	Unstandardized coefficients		**t**	**Sig.**	**Multicollinearity**	
	B	**Std dev**			**tolerance**	**VIF**
(Constant)	7.78598***	0.021	373.601	0.000		
X1	0.00176***	0.000	3.932	0.000	0.794	1.259
X2	0.00570	0.006	0.964	0.335	0.376	2.660

X3	0.00328***	0.001	4.330	0.000	0.390	2.567
X4	0.00060**	0.000	3.389	0.001	0.431	2.320
X5	-0.00006	0.000	-0.471	0.638	0.565	1.770
X6	-0.01042***	0.002	-5.177	0.000	0.962	1.039
R = 0.485; R Square = 0.235; Adjusted R Square = 0.229; F = 34.807; Sig.= 0.000.						

$*$ p < 0.05; $**$ p < 0.01; $***$ p < 0.001

- Impact of FDI on labor productivity

- Assessing FDI capital invested in the economy, variable X1 has a positive impact in the same direction on labor productivity (variable Y) of localities at the 95% confidence threshold with B = 0.00176 & Sig. = 0.000 < 0.05. This result confirms the actual impact of FDI capital deployed on the economy. This means that the higher the proportion of FDI capital in the total investment capital of the local economy, the higher the local labor productivity. This is consistent with the theory of FDI, helping recipient countries have the opportunity to innovate production and management technology, thereby improving labor productivity in the local economy.

- Regarding the number of FDI enterprises operating in the economy, the regression results show that variable X2 does not have a significant impact on labor productivity (variable Y) in localities at the 95% confidence threshold with the following systems: statistics B = 0.0057 & Sig respectively. = 0.335 > 0.05. Thus, the presence and level of participation shown by the proportion of FDI enterprises in the total number of operating enterprises does not bring a positive effect on the average local labor productivity.

- Regarding the number of workers working in the FDI sector, the regression results show that variable X3 has a positive impact in the same direction on labor productivity (variable Y) of localities at the 95% confidence threshold with B = 0.00328 & Sig . = 0.000 < 0.05. This is consistent with the theory that FDI enterprises have the opportunity to receive the transfer of new equipment, production technology and operational management know-how, so the work performance of employees in the enterprise also increases. The ability to be significantly improved thanks to learning new techniques and working skills as well as support from advanced equipment, leading to improved labor productivity of the enterprise. Therefore, the higher the proportion of labor in the FDI sector, the larger the proportion in the total local labor force, the better the local labor productivity.

- The above results allow to partially confirm hypothesis 1: the amount of FDI capital and the number of employees in FDI enterprises have a positive impact on local labor productivity; but the presence of FDI expressed through the number of FDI enterprises in the economy does not have a significant impact. This shows that there is only a direct impact of FDI capital, but the spillover impact is still limited in Vietnamese localities.

Regarding the role of exports, the regression results show that variable X4 has a positive impact in the same direction on the value of labor productivity (variable Y) of localities at the 95% confidence threshold with B =

0.0006 & Sig. = 0.001 < 0.05. Thus, hypothesis 2a is confirmed correctly: the higher the export value and the larger the proportion in local GDP, the higher the labor productivity. This result is similar to published studies, according to which, profits from exports are a source of motivation for businesses to invest in improving efficiency and productivity through R&D development, technological innovation, and cooperation. This creates opportunities for businesses to gain advantages of scale and significantly improve labor productivity when exporting successfully. During the export process, businesses also have the opportunity to learn more advanced techniques from foreign partners, and can receive support in improving machinery, equipment, production processes, and methods. management, thereby gradually expanding operations and occupying an increasingly large proportion in the industry, increasing the overall productivity of the entire industry and localities.

Regarding the role of imports, the regression results show that variable X5 does not have a significant impact on labor productivity (variable Y) in localities at the 95% confidence threshold with the statistical coefficients B = -0.00006 & Sig. = 0.638 > 0.05. Thus, hypothesis 2b is not confirmed correctly: imports do not increase local labor productivity. In fact, although importing goods creates competitive pressure that pushes domestic businesses to invest in innovation and technological improvements to improve productivity, success depends largely on resources and capabilities. Their resources are still limited, so competition is not a determining factor in labor productivity growth. Similarly, economic structural shifts or resource reallocations, leading to improvements in average productivity over time, are long-term impacts of imports, the extent and speed of which are also affected. Great influence from local and national policies and strategies in each specific period. Therefore, within the scope of this study, the impact of imports on the overall labor productivity of the industry and locality is insignificant or not evident.

4.3. Impact of economic growth on labor productivity

The regression results show that the economic growth control variable (variable X6) has an inverse negative impact on the value of labor productivity (variable Y) of localities at the 95% confidence threshold with B = -0.01042 & Sig. = 0.000 < 0.05. This is a surprising result, showing that localities with faster economic development have lower labor productivity. Reality shows that in Vietnam, large provinces and cities with high growth rates and many job opportunities attract a large number of workers and migrants. Mass immigration can rapidly increase the unskilled labor force and productivity in these localities; and is the reason that explains the results found in the short term, because labor productivity is measured by the value of GDP per worker. On the contrary, in provinces with low growth rates, the unemployed and disengaged workforce is high, leading to an increase in labor productivity in the short term..

5. Policy Recommendations

From the research results obtained above, the article proposes some policy recommendations in Vietnam as follows:

For FDI capital, research results show that it is necessary to focus on the amount of capital being deployed and the number of workers working in the FDI sector in the local economy. This has policy implications: to attract FDI, it

is necessary to build a safe and healthy investment and business environment by strengthening the guarantee of intellectual property, copyright, and commercial rights; Continue to improve institutions, policies and laws, ensure openness, transparency and stability, ensure strict law enforcement, and protect the legitimate rights and interests of investors. In addition, Vietnam needs to meet investors' requirements for infrastructure by promoting public investment, improving facilities, and focusing on key areas depending on each stage to avoid Spread investment is ineffective. Each business and locality itself needs to proactively coordinate with state agencies to improve capacity in all aspects, from technology to labor and management levels, in order to attract high-tech projects. . Specifically, state agencies need to encourage and support investment in scientific research at businesses, coordinate with businesses and professional associations to reform education in the direction of capacity development, learning coupled with practice. ; Enterprises and localities need to strengthen self-training, on-site training and have policies to attract talented people to work in the country.

For localities with a low level of development, attracting labor-intensive FDI projects is an opportunity and an effective solution to improve the technological capacity and labor qualifications of local enterprises. thereby improving overall labor productivity. Projects that use a lot of labor are often projects in the processing industry, use a lot of input materials and require large space and premises, so localities can attract these projects by offering preferential policies on land rental prices, tax incentives, and raw material costs. In addition, localities need to create the most favorable conditions for investors to save time and costs in carrying out procedures and project implementation.

For international trade, exports are focused on improving labor productivity through achieving economies of scale. On the business side, it is necessary to ensure the quality of products and goods, meeting market standards and requirements, by developing technological capacity through investment in research, development, and transfer. or purchase advanced equipment from developed countries. In addition, businesses need to proactively and actively participate in industry associations, proactively learn about and participate in conferences, fairs, and trade promotion programs to promote their brands and exploit open opportunities. wide export market. On the local side, local government agencies need to be creative, innovate forms and expand trade promotion activities, support businesses with market information, and support businesses to participate in events. international trade, thanks to which businesses are exposed to many potential partners and investors, thereby improving the ability to expand markets and learn from successful businesses. To help export activities take place smoothly and effectively, authorities and the state need to promote their management role, removing barriers for businesses with specific measures such as administrative reform. simplification of customs procedures, tax payment, application of technology to speed up the processing of procedures, and at the same time have policies to encourage and support businesses and manufacturing industries to research and develop themselves. Developing technology to improve enterprise productivity and the overall productivity of the entire industry.

Besides exporting, selective importing, specifically importing technology and production materials, is also one of the solutions that need attention to improve technological capacity and improve labor productivity. of businesses and localities. Importing technology and technical equipment is a necessary activity to accelerate the technological

development of domestic businesses and industries, especially for businesses that cannot research and develop on their own. and enterprises in high-tech manufacturing industries such as automobile manufacturing, electronic equipment manufacturing, etc. However, in order for technology import to bring about the desired effect, businesses need to research Carefully and consider choosing reputable partners, only importing and receiving transfer of advanced technology, modern machinery, not importing cheap, poor quality equipment or equipment, or outdated technology. In addition, to effectively use and exploit new technology and techniques, businesses need to pay attention to human resource training, ensuring that human resources have sufficient professional, technical and control qualifications. , using equipment, machinery and technology to prepare for import, in which, sending workers to train at partner enterprises before importing is necessary. Local governments and state agencies also need to pay attention and support businesses in providing information and advice on reputable technology exporters, create favorable conditions for import procedures, and ensure Quick customs clearance, saving time and costs for businesses.

6. Conclusion

This study shows the impact of FDI investment and international trade on local labor productivity. In particular, on-going FDI capital, number of employees in FDI enterprises and export activities have positive impacts in the same direction on labor productivity; The number of FDI and import enterprises has almost no significant impact on the average local labor productivity.

Based on the research results, the article proposes a number of recommendations for businesses, localities and the state on improving institutions, policies, laws, building a safe and healthy investment environment, Ensuring the rights and interests of investors, while being selective in investment approval, giving incentives to long-term partners with great contributions, creating favorable conditions for administrative procedures and infrastructure and improve the capacity of domestic enterprises to promote the attraction of quality FDI projects with large financial resources and employ many local workers.

At the same time, the article also offers a number of solutions to help enhance export activities, by developing technology, ensuring goods quality, expanding trade promotion, and removing procedural difficulties. At the same time, solutions for selectively importing technical equipment and facilities are also raised to ensure the effectiveness of improving technological capacity for businesses. The recommended solutions all aim to ultimately improve labor productivity of businesses and the entire locality.

Declarations

Source of Funding

The study has not received any funds from any organization.

Competing Interests Statement

The author has declared no competing interests.

Consent for Publication

The author declares that he consented to the publication of this study.

Acknowledgement

Than you editors, friends to support this publication.

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