

THE IMPACT OF FOREIGN DIRECT INVESTMENT (FDI) ON ECONOMIC GROWTH THROUGH THE INVESTMENT CHANNEL IN THE SOUTH CENTRAL COAST AND QUANG NAM

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Abstract

Due to a relatively small economic scale in the South Central Coast and low internal accumulation capacity of developing countries, foreign direct investment (FDI) is always an indispensable supplement for this economy. This paper uses a combination of qualitative and quantitative analysis methods to examine the impact of FDI on economic growth the South Central Coast in the period 2009-2019. The qualitative results show that the role of FDI in the economy is significant and FDI has a positive effect on economic growth in provinces in the South Central Coast but the level of this effect is different between these provinces and this capital flow do not overwhelm domestic investment.

Keywords: *3SLS, Economic growth, FDI, FDI and growth, Quang Nam, South central coast.*

1. Introduction

Theoretical basis for the empirical studies related to the impact of FDI on economic growth through the investment channel are neoclassical growth theory and endogenous growth theory. These theories have shown how investment creates the output of the economy. In the both models, FDI can have a direct effect on the output because it increases capital accumulation. Growth factors are endogenous and FDI is seen as a set of capital and technology (Balasubramanyam, 1996). FDI affects and contributes to the country's economic growth through channels such as capital accumulation, technology transfer.

Agama (2010) examines the impact of exports and FDI on the economic growth of South Asian countries: Bangladesh, India, Pakistan and Sri Lanka. This research found that the positive effects of exports and FDI are both statistically significant. Agrawal et al. (2011) studies the impact of FDI on the economic growth of China and India during the period 1993-2009. The results show that a 1% increase in FDI results in 0.07% increase in China's GDP and 0.02% increase in India's GDP. The authors also find that China's growth is more affected by FDI than India's growth. Yilmaz Bayar (2014) evaluates the effect of FDI and domestic investment on Turkish's economic growth in the period 1980-2012. This study indicates that FDI has a negative effect on economic growth, while domestic investment has a positive effect on economic growth.

Pegkas (2015) examines the impact of FDI on economic growth in 18 countries in the European region in the period 2002-2012. The study uses the panel data and OLS, FEM and REM estimation methods on the regression model: $L(\text{GDPit}) = \beta_0 + \beta_1 \text{FDIit}$. The results show that FDI plays an important role and positively affects the economic growth of these countries in the long run. The study also states that these countries need a macroeconomic stability to create a good investment environment in order to attract the FDI inflow, which is a necessary condition to promote economic growth. Carkovic and Levine (2005) applies GMM estimation method for the panel data of 72 countries (including the developed and developing countries) and find a similar result that there is a positive impact of FDI on the economic growth in these countries.

Hoa and Hemmer (2002) found the impact of FDI inflow on Vietnam's economic growth through the investment channel. FDI affects indirectly and promotes Vietnam's economic growth through human capital. Similarly, Hung (2005) uses OLS estimation method to examine the effect of FDI on Vietnam's economic growth. The result shows that FDI has a positive impact on economic growth, which is shown by the increase in living standards, technical progress and productivity. Lan (2006) uses the data of 61 provinces in Vietnam to examine the relationship between economic growth and FDI in the 1996 - 2003 period. The result indicates that FDI has a positively and statistically significant effect on economic growth. Moreover, exports, the growth of labor and human capital promote the economic growth in Vietnam.

Also, Thu et al. (2010) studies the impact of FDI on economic growth in Vietnam and found a significantly positive effect of FDI on economic growth in Vietnam. FDI inflow does not affect economic growth through the interactive effect of FDI on human capital and trade.

Bao et al. (2020) analyzes the relationship between FDI and economic growth in Vietnam in the period 1990-2019. The empirical estimation results from the VAR and ARDL - ECM models show the positively effect of FDI on Vietnam's economic growth both in the short run and long run. However, the relationship between FDI and economic growth is nonlinear. FDI has a positive impact on economic growth in the present period, but tends to be negative in the next period before recovering to a positive state. This nonlinear trend is also true for the effect of FDI on Vietnam's exports. Furthermore, the empirical results also show the effects of FDI inflow on interest rates, inflation and exchange rates in Vietnam's economy.

Mai and Thuy (2016) uses the secondary data and applies VAR model and Granger causality test to examine the relationship between FDI and economic growth in Khanh Hoa province in the period 1995 – 2014. The results show that the impact of FDI on economic growth is not statistically significant, but economic growth has a positive impact on FDI. However, the limitation of this study is that it does not explain these results. This means that

this study does not find out the necessary conditions for FDI to positively contribute to the local economic growth.

There are many studies examining the impact of FDI on economic growth through the investment channel. Most studies affirm the positively effect of FDI on the host country's economic growth through investment. In addition, most studies show the role of FDI in economic growth through spillover effects such as the impacts of technology transfer, employment, poverty reduction and economic restructuring.

2. Method

Qualitative analysis method. (i) Descriptive statistical analysis: the study will conduct the statistical analysis of economic growth trends, the situation of foreign direct investment in the South Central Coast and the relationship between FDI and economic growth. Thus, the direction of this relationship will be considered. (ii) The expert method: A method of gathering qualitative information but is useful for in-depth understanding through text analysis and discussion. This method is done through in-depth interviews with experts, managers and other stakeholders by questionnaires. This method will help the process of gathering information more thoroughly and understand more deeply some aspects of the impact of FDI on economic growth through investment.

Quantitative analysis method

Ba et al. (2006) uses a Cobb-Douglas production model and a perfectly competitive economy to assess the impact of FDI on economic growth in Vietnam. Markiw et al. (1992), Borensztein et al. (1998) and Thu et al. (2010) bases on neoclassical and endogenous growth theoretical models to create a model examining the impact of FDI on economic growth in Vietnam and use the provincial panel data for analyzing. These studies use the expanded production function model and then logarithm the variables over time in order to have a linear model of the factors affecting GDP. From the above studies, this study will propose the production model analyzing the impact of FDI based on the provincial data in the South Central Coast:

$$Y = AI^{\beta_1} F^{\beta_2} L^{\beta_3} H^{\beta_4} \quad (1)$$

Where Y is Gross Domestic Products (GDP); L is labor; H is human capital; I is domestic investment; F is foreign direct investment; A is total factor productivity (TFP).

Take the logarithm and the derivative of the model over time:

$$gy_t = \beta_1 gI_t + \beta_2 gF_t + \beta_3 gL_t + \beta_4 gH_t + \varepsilon_t \quad (2)$$

In which gy is GDP growth, gI is domestic capital growth, gF is FDI growth, gL is labor growth and gH is human capital growth. With the data from the provinces in the South Central Coast, here will rewrite the equation (2) is rewrite by provinces and time as the equation (3) below:

$$ggrdp_{it} = \beta_1 gdominve_{it} + \beta_2 gfdi_{it} + \beta_3 gl_{it} + \beta_4 gh_{it} + \varepsilon_{it} \quad (3)$$

In which: $ggrdp_{it}$ is the GRDP growth rate; $gdominve_{it}$ is the rate of domestic capital growth; $gfdi_{it}$ is the FDI growth rate, gl_{it} is the labor growth rate and gh_{it} is the increase in the rate of trained labor; i is the province and t is the year.

The research uses the fixed and random panel data regression and 3SLS - GMM methods. Although in the the panel data regression method, the study used Two-Stage least squares (2SLS) regression analysis to overcome the endogenous phenomenon of the variable $gfdi$. In addition, in order to examine the differential effects of FDI on the economic growth of the provinces, the equation (3) will be added dummy variables, in which D1 is Da Nang, D2 is Quang Nam; D3 is Quang Ngai; D4 is Binh Dinh; D5 is Phu Yen; D6 is Khanh Hoa.

Data collection: (i) Primary data is collected through interviews with some experts in foreign direct investment management and leaders of business associations in provinces in the South Central Coast regarding the impact of FDI on the economy of these provinces. (ii) Secondary data for the study is collected from the statistical yearbook of provinces in the South Central Coast.

3. Results

3.1. Introduction to the natural and socio-economic conditions of the South Central Coast

The central coast in this study includes Da Nang city and Quang Nam, Quang Ngai, Binh Dinh, Phu Yen and Khanh Hoa provinces. The population of the region is about 7.5 million people, accounting for 7.7% of the population of Vietnam and more than 5 million labors. This region covers an area of 3.3 million hectares, accounting for 10% of the country's area and is connection location between the northern and southern regions with a coastline of about 1,000 km.

3.2. Economic growth in the South Central Coast

The period 2009-2019 is the period between two cycles of economic fluctuations (two shocks - World financial crisis in 2009 and COVID 19 pandemic at the end of 2019). In this time, the Vietnam's economy and provinces in the South Central Coast grew rapidly. The GRDP of the South Central Coast (constant 2010) was more than 140 trillion VND in 2009 and more than 307 trillion VND in 2019, an increase of nearly 2.2 times and the average growth rate of about 7.7%, which is higher than the average growth rate of Vietnam during this period. However, the economic growth fluctuated with the highest growth rate of 11% in 2010 and the lowest growth rate of 5% in 2012. The quality of growth has improved significantly thanks to the contribution of technology, higher labor productivity, and the non-agricultural economic sector. In the economy of the South Central Coast region, the urban economy has played an increasingly important role in recent years. The proportion of the urban economy in the GRDP of the South Central Coast provinces tends to increase. The

urban economy accounted for 78.6% in 2009 and 83.2% of the economic size of the provinces in 2019 (this indicator of Vietnam is 83.1%), increased by 4.6% during this period. The proportion of the urban economy of the South Central Coast to the size of Vietnam's urban economy has gradually increased and now accounts for nearly 8.4%, which is higher than the GRDP rate of the South Central Coast provinces to Vietnam's GDP (only 6.95%).

The economic structure of the South Central Coast has changed positively. The construction industry has increasingly asserted its main driving force role. The proportion of this area accounts for about 38% in 2019, in which provinces such as Quang Nam, Quang Ngai account for about 50% (excluding taxes and subsidies). The service sector has also grown rapidly. The proportion of this area in the GRDP is nearly 40% in 2019, and tourism is gradually becoming a spearhead industry for this region. The agricultural sector continues to develop, but the proportion has decreased significantly and only accounts for about 20% of the GRDP of the South Central Coast, in which Da Nang City only accounts for nearly 4% of the GRDP of the South Central Coast. The South Central Coast also formed a territorial structure with clearer division of labor and industrialization thanks to the formation of urban areas and centers of the service industry in the East.

The economy of the South Central Coast has a mechanism to mobilize and allocate resources for its growth which has been improved more and more clearly. In the 10 years since 2010, this economy has mobilized 1236,221 trillion VND at 2010 prices, and nearly 148 trillion VND in 2019, increased 1.92 times higher than in 2010. This investment resource is allocated to the non-agricultural sector, especially to develop infrastructure for the economy. The total number of employees was mobilized into the economy about 49,208 million in 2009, and more than 4.2 million in 2019, increased 1.12 times.

Management mechanism and competitiveness of the provinces in the South Central Coast also improved much. The provinces are trying to reform and improve their competitiveness. Currently, the competitiveness of provinces is in the good group according to the assessment of the Vietnam Chamber of Commerce and Industry. .

3.3. Foreign direct investment situation in the South Central Coast

Total foreign direct investment capital in the South Central Coast increased gradually from 2009 to 2019., The total FDI at 2010 prices was over 4.3 trillion VND in 2009, and then increased to nearly 8.5 trillion VND in 2015 and over 13.8 trillion VND in 2019. From 2009 to 2019, FDI increased 2.9 times and the ratio of FDI to total investment rose from 3.1% in 2009 to nearly 9% in 2019. There are currently over 1000 investment projects operating in the provinces in the South Central Coast. The scale of each project is on average about 20 million USD or equivalent to about 460 billion VND. The number of projects and the amount of capital in some provinces are impressive. Provinces of Da Nang, Quang Nam, Quang Ngai and Khanh Hoa has great attraction in attracting foreign investment, currently

accounting for more than 80% of projects in the South Central Coast. The industrial and service sectors are considered to be the most attractive and attract the most foreign direct investors. FDI in the industry - construction sector accounts for 35.8% of projects and 55.9% of registered capital.

According to Bui Quang Binh (2019), attracting foreign investment in the Central and Central Highlands of Vietnam has achieved good results in terms of quantity and quality. Attracting foreign investment is easier and tends to focus on regions and localities with better socio-economic conditions. However, the absorption capacity of the economy and conditions for investment implementation is not good, leading to a low disbursement rate and the weak role of foreign investment in the economy.

3.4. The contribution of FDI sector to the economy of the South Central Coast

FDI has greatly contributed to the economic growth of the provinces in the South Central Coast. Firstly, FDI enterprises contribute significantly to GRDP of these provinces, with 16.6 trillion VND in 2019, accounting for 5.4% of the region's GRDP. Although this figure was lower than the average level of Vietnam (19%), in case of difficult conditions of this region this is a significant growth. Secondly, FDI enterprises investing in the industrial sector, especially the industry with high technology, have contributed to economic restructuring. Thirdly, FDI enterprises have contributed to the domestic revenue of the provinces only about 4% of the total domestic revenue (in Vietnam this figure is 14.4% in 2018), in which the highest contribution is about 7% in Da Nang. Fourth, FDI contributes to increasing the scarce investment source for these provinces, currently accounting for nearly 9% of the total investment of the region. Fifth, FDI enterprises also create jobs for this area. The total number of employees in FDI is about 45 thousand employees in Da Nang and 40 thousand employees in Quang Nam in 2019.

3.5. Analyzing the impact of FDI on economic growth through the investment channel in the South Central Coast

Table 1. Descriptive statistics of the variables in the model

Variables	Number of observations	Mean	Standard deviation	Min	Max
ggrdp	66	7.60	0.91	5.79	9.3
gfdi	66	7.82	0.70	6.4	9.2
gdominve	66	11.98	1.28	9.4	15.1
gl	66	1.35	0.37	0.77	2.7
gh	66	1.15	0.33	0.3	1.8
pci	66	61.92	4.27	53.33	70
lny	66	10.45	0.39	9.41	11.14

(Source: Processing from the Statistical Yearbook of the provinces in the South Central Coast)

Table 1 shows the descriptive statistics of the variables in the model. The mean of

ggrdp is 7.6, the minimum value is 5.79 and the maximum value is 9.3. The descriptive statistics of the other variables in the model are shown in the table and the data is convergence and can be used for analysis.

Estimated results

First, the study will present the estimation results according to two methods (1) random effects - REM, (2) fixed effects - FEM. However, the data of time series variables will present problems such as lag. When testing the stationarity of the variables, the variables are statistically significant. The results estimated by REM and FEM methods are both statistically significant. Indeed, the hausman test results indicate that using the results in REM method was better than the results in FEM method because domestic investment is endogenous as it depends on the business environment and the size of GDP. Therefore, the study use two-stage least squares (2SLS) regression analysis with REM method and then the 3SLS method and the results are presented in Table 2.

The result shows that FDI has a positive impact on the economic growth of the South Central Coast that is similar to the research results of Pegkas (2015) in the European region, Hoa and Hemmer (2002), Tran Trong Hung (2005). In the provinces in the South Central Coast, this capital inflow is significant in Quang Ngai, Binh Dinh and Phu Yen, but not statistically significant in Da Nang and Khanh Hoa.

Table 2: Estimated results

The dependent variable is ggrdp

Variables	Estimation methods				
	FEM	REM	REM (1)	REM - IV(2SLS)	3SLS - GMM
gfdi	0.234** (0.093)	0.24** (0.09)	0.261** (0.092)	0.139** (0.080)	0.308** (0.153)
gdominve	0.466*** (0.062)	0.43*** (0.06)	0.424*** (0.056)	0.512*** (0.058)	0.420*** (0.055)
gl	0.367 (0.261)	0.50** (0.22)	0.686*** (0.156)	0.213 (0.253)	0.671*** (0.149)
gh	0.433** (0.186)	0.42** (0.17)	0.271* (0.154)	0.572** (0.174)	0.235 (0.189)
D2			0.599*** (0.114)	0.369** (0.217)	0.583*** (0.118)
D3			-0.268** (0.141)	0.643*** (0.125)	-0.276** (0.134)
D4			0.282** (0.138)	-0.371** (0.132)	0.310** (0.163)
D5			0.479*** (0.119)	0.532*** (0.135)	0.488*** (0.113)
Constant	-0.816 (0.622)	-0.62 (0.61)	-0.941 (0.623)	-0.775 (0.615)	-1.195 (0.836)
R - squared	0.4243	0.4714	0.9139	0.9144	0.9293

Number of observations	66	66	66	66	66
Hausman test	Prob>chi2 = 0.5684				
Durbin-Watson	1.481998				
Wooldridge test for autocorrelation in panel data	Prob > F = 0.135				
vif	3.03	3.03			

Note: in () is the standard deviation, ***, **, * are 1%, 5% and 10% significance levels

(Source: Processing from the Statistical Yearbook of the provinces in the South Central Coast)

Domestic investment has a larger and positive impact on the economic growth of the South Central Coast than the impact of FDI on and it seems that in the context of the scarcity of investment capital in the South Central Coast, these two capital flows are complementary. Labor is still a factor that plays a large role in the economic growth and is also the biggest potential in the South Central Coast. Along with investment capital, human capital has a positive impact and is also a factor that helps FDI to promote its role.

The survey results of some experts in the management of foreign direct investment and business association leaders in the provinces of the South Central Coast also support the above analysis. Accordingly, FDI has a positive effect on the economic growth of the South Central Coast through the investment channel with the approval number of 60%. Moreover, FDI did not overwhelm domestic investment with an agreement of 57.1%. The impact of stimulating domestic investment through complementary effects such as creating inputs or outputs, providing services to domestic firms accounts for nearly 63% agreement of respondents. FDI enterprises are taking advantage of the labor when investing in Vietnam, so the level of consensus among experts regarding the contribution of FDI in promoting the labor resource is very high, nearly 70% of respondents' agreement. A 66% of the respondents agreed that the contribution of FDI in promoting the labor resource through direct and indirect job creation. FDI has also contributed to improve the local labor skills with a degree of agree of 60%.

4. Discussion and Conclusion

Firstly, in the process of the economic development of the South Central Coast, although the role of FDI is increasing, it is also weak as compare to other regions in Vietnam. FDI not only contributes directly to the GRDP of the provinces, but also promotes the economic restructuring, increases the investment resource for the economy, creates local budget revenues, jobs, employment, and income for the labor or promotes policy reform of the provinces in the region. Therefore, it is necessary to affirm clear and consistent views on the role of FDI as a part

of the Vietnam economy and thoroughly grasp the views in all policies.

Secondly, FDI has a positive impact on the economic growth of the South Central Coast, but the level of impact in different provinces is different. In the present conditions, the FDI attraction policies of the provinces need to define mid- and long-term goals in relation to combined and successive solutions. Foreign investment policy in the coming years will not only focus on quantity attraction but also its additional impact on other factors of production to generate economic growth. It is necessary to pay attention and give priority to attract the large FDI enterprises with financial and technological potentials.

Thirdly, it is necessary to improve the business environment of provinces, increase the attractiveness of investors to enhance the competitiveness. Provincial governments need to create a fair competitive environment, appreciate the role of the economic components, especially the private economy, and determine the function and role of the state economy reasonably. Indeed, the Vietnam government has to formulate the laws and legal documents to create the legal framework for production and business of all economic sectors. Moreover, provincial governments need formulate synchronous policies to mobilize and use resources for the economic sectors. Public administration reform will be one of the important solutions to make the open business environment.

Fourth, provincial governments continue to mobilize the domestic capital source effectively for economic growth. Due to the limited intrinsic accumulation capacity and a decline in government funding, the sources outside the region will be a major source of funding. In addition to improving the business environment, investment attraction policies need focus on the difficulties and disadvantages of investors. Provincial governments need pay attention to supportive solutions both during and after investment.

Finally, provincial governments should mobilize the maximum of labor resource and give a priority for developing vocational training for workers. These governments need ensure the mobilization of the participation rate in economic activities towards full employment, in which job creation and unemployment reduction are basic solutions. These governments should encourage labor-intensive sectors and train qualified laborers who are suitable to the process of economic restructuring and the requirement of investors.

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