

The Relationship between Foreign Direct Investment and Local Economic Growth: A Case Study of Binh Dinh Province, Vietnam*

Bao LE¹, Thi Thanh Thuy NGO², Ngoc Tien NGUYEN³, Duy Thuc NGUYEN⁴

Received: November 30, 2020 Revised: February 20, 2021 Accepted: March 02, 2021

Abstract

This study aims to investigate the relationship between foreign direct investment (FDI) and economic growth at the provincial level by using time-series data in Binh Dinh from 1997 to 2019. We applied the quantitative approaches Vector Autoregression (VAR) and Autoregressive Distributed Lags (ARDL) in the model, which includes economic growth, real foreign direct investment capital, ratio of trained workers, and infrastructure. The results show that all these variables are stationary at the first difference. In ARDL analysis, we found that the economic growth positively affects FDI attraction. However, there is no evidence of the effect of FDI on economic growth in the condition of low capital implemented. Moreover, findings also show that the impact of FDI on economic growth is influenced by two factors: infrastructure and human capital. The lack of human capital, which is trained personnel and infrastructure, is the main barrier hindering and inhibiting FDI's contribution to local economic growth. In order to improve the efficiency of FDI on economic growth in the future, it is suggested that the Binh Dinh government should have proper policies in terms of the infrastructure, the human capital investment. They would allow Binh Dinh to enhance the capital absorptive capacity and capital efficiency.

Keywords: Foreign Direct Investment, Economic Growth, Infrastructure, Human Capital, Binh Dinh, Vietnam

JEL Classification Code: F23, O47, E22, C32

1. Introduction

Foreign direct investment (FDI) is an important resource for economic development in many developing countries. The reality in Vietnam also shows that the FDI sector plays a huge role in economic growth. However, the contribution

of the FDI sector to the local economy is still a subject not settled (Tien et al., 2020); the evidence on the relationship between FDI and economic growth is still controversial and inconsistent among the existing studies, which really causes difficulty for managers to make decisions on policies to attract FDI and promote economic growth. In particular, many studies show that the effect of FDI on economic growth depends on the local FDI attraction as well as the conditions and capacity of absorbing FDI in each host locality. While studies in Vietnam today mostly evaluate this relationship from an investment perspective, very little research is concerned about the role of conditional factor in this relationship. Most studies about this interest are at the national level; it is very limited at the local level. Therefore, this study focuses on the relationship between FDI and full economic growth in both sides (investment capital and absorption capacity) in a specific locality, which is the novel contribution of this research.

Binh Dinh is one of the five provinces in the key economic region in Central Vietnam, with a favorable geographical location and many advantageous factors to attract investment. In recent years, along with the general development trend of Vietnam, Binh Dinh has deployed many efforts to attract

*Acknowledgements:

The authors would like to thank the anonymous referees for constructive comments on earlier version of this paper.

¹First Author. Faculty of Economics, University of Economics, The University of Da Nang, Da Nang, Vietnam.
Email: baole@due.edu.vn

²Faculty of Economics and Accounting, Quy Nhon University, Binh Dinh, Vietnam. Email: ngothithanhthuy@qnu.edu.vn

³Associate Professor, Faculty of Economics and Accounting, Quy Nhon University, Binh Dinh, Vietnam.
Email: nguyennngoctien@qnu.edu.vn

⁴Corresponding Author. Associate Professor, Faculty of Basic Science, Van Lang University, Ho Chi Minh City, Vietnam [Postal Address: 45 Nguyen Khac Nhu Street, Co Giang Ward, District 1, Ho Chi Minh City, 700000, Vietnam] Email: thuc.nd@vlu.edu.vn

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

foreign investment. However, compared to other provinces in the key economic areas in the Central region and the whole country, this result is very limited. Up to December 31, 2019, Binh Dinh has attracted only 80 projects with registered capital of USD756.9 million, accounting for 6.38% of the registered capital of the Central Key Economic Region, and 0.3% of the whole country, in which the ratio of realized capital to registered capital is still low. Specifically, according to Binh Dinh Statistical Office (2019), FDI disbursement only reached 30.9% of the total registered capital. Thus, the research question is whether FDI really has a positive effect on the local economic growth. Which factors are the prerequisites for FDI to really have a positive impact on growth? The paper will provide strong evidence of the relationship between FDI and economic growth at the local level. Based on the result, the authors offer recommendations to promote the positive role of FDI in pushing economic growth in Binh Dinh, Vietnam.

2. Literature Review

There are different perspectives about the role and the effect of FDI on economic growth. Nowbutsing (2009) has developed a model about the relationship between FDI and economic growth through the direct effects, indirect effects (spillover) and feedback effects. This is not a one-way relationship; FDI and economic growth can interact with each other.

Nguyen (2014) outlined the nature of this relationship through three channels of impacts, namely, (1) the direct effects is considered through the investment capital perspective; (2) the indirect effect is determined by the absorptive capacity in the host countries through conditional factors; and (3) vice versa, the effects of economic growth on FDI capital (feedback effects).

Based on the above approach, the research framework is evaluated as a causal relationship of FDI and economic growth in both aspects (investment capital and absorptive capacity) as follows:

2.1. Investment Capital Perspective

FDI directly affects economic growth.

This impact relationship is analyzed through the aspect of capital investment. This is a view that is concretely explained by classical growth theory such as Adam Smith's *The Wealth of Nations* (1776); *Principles of political economy and tax* (David, 1817) and especially the Harrod-Domar model by the two economists, Harrod and Domar, who explain the relationship of economic growth with basic resource factors in the form of the sum: general $Y = f(K, L)$ in which, K is capital, L is labor, Y is the output level of the economy. In the growth model of Solow (1956), his exogenous growth theory is based on the idea that economic growth is determined by the amount of capital invested, but this amount of capital only has an effect in the short term. In this case, FDI will be an important channel of benefits through capital increase in the host country and then promote economic growth toward a new steady state by accumulating capital. In addition, technology-related theory catches up (Lucas Jr, 1988); given the category of endogenous growth based on human capital accumulation, this theory determines economic growth by introducing new technology production processes in the host country, and FDI is assumed to be more efficient than domestic investment. Therefore, FDI contributes to boosting economic growth in the long term through technology diffusion, labor mobility, management skills training, and organizational arrangement. As a result, FDI can increase the productivity of the host economy, and is seen as a catalyst of domestic investment and technological progress.

Economic growth affects FDI.

The role of economic growth in a country or locality has many different roles, in terms of its impact on FDI attraction; economic growth is one of the measures of economic achievement reflected in the increase in output/income of the

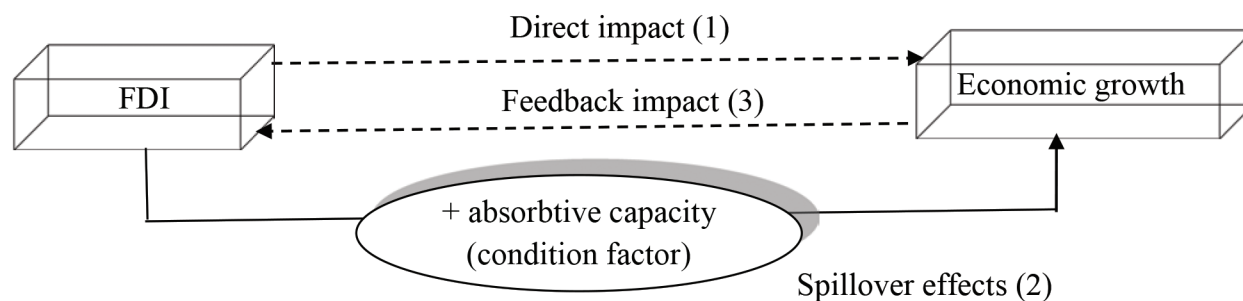


Figure 1: The Relationship between FDI and Economic Growth
 Source: Nowbutsing, 2009

economy. In particular, an economy with a high and stable growth rate will have a chance to gain more attention from foreign investors. Because the investors see the potential market in the future (UNCTAD, 1998). In addition, with the investor's goal of finding markets, investing in high-growth countries is a very favorable condition for them. Because they believe that consumer sentiment is quite optimistic about the economy and the purchasing power of the market will increase (Athukorala, 2009). In particular, the large market size and high GDP growth also show the competitiveness of the economy compared to other economies in the region (Alavinasab, 2013).

2.2. Absorptive Capacity Perspective

FDI has indirect effects, also known as spillover effects, on economic growth; FDI boosts the economic growth through spreading technology, progress, and management skills. However, this benefit depends on the local capacity to absorb FDI. This has been clearly demonstrated through the case study of Bengoa and Sanchez-Robles (2003) with the argument that high human capital will be able to quickly adapt to technological progress, and at the same time, is enough to combine with the spread of technology of FDI, thus promoting economic growth. This view is also supported by many authors in experimental studies (Djurovic, 2012; Nguyen et al., 2006; Nguyen, 2014), who said that human capital plays a role in promoting growth through the spillover mechanism of FDI. In addition, according to Easterly and Levine (2001), the good quality of local infrastructure will facilitate investment and production, lowering the costs in commodity exchange and increasing economic efficiency by scale. Therefore, the infrastructure is considered as an important factor in attracting investment as well as a condition for FDI capital to promote economic growth. This has been confirmed in empirical studies by Nguyen (2014), Tran (2015), Ta et al. (2020), and Nguyen (2020).

3. Research Method

3.1. Analytical Framework

The objective of the paper is to analyze the impact of FDI on economic growth from investment capital and absorptive capacity perspectives, especially considering the role of absorptive capacity factors (human capital, infrastructure) in this relationship.

In which:

- Evaluating the effects of FDI on economic growth, besides foreign direct investment variable (FDI), three variable groups are considered, including absorptive capacity factors (A), interaction variables (FDIxA), and control variables (B).
- At the same time, determining the impact of economic growth on FDI, the author uses the Granger causality test.

3.2. Research Model

From the analytical framework in Figure 2, the regression model for assessing the impact of FDI on economic growth is specifically written as follows:

$$GRDP_t = \beta_0 + \beta_1 FDI_t + \sum \beta_i A_{i,t} + \sum \beta_j FDI_t \times A_{j,t} + \sum \beta_k B_{k,t} + u_t \quad (1)$$

In which: absorptive capacity factors A_i includes: human capital (H) and infrastructure (FR); Group of interaction variable (FDIxA_i) is the product of FDI and absorptive factors (including: FDIxH; FDIxINFR). Interactive variable group (FDIxA_t) is the product between FDI and FDI absorption factors, including: FDIxH and FDIxFR. In addition, this research also uses three control variables (B_k). These variables are commonly used in previous studies such as capital from domestic private sector (DI), capital from state sector (GI), and labor (L).

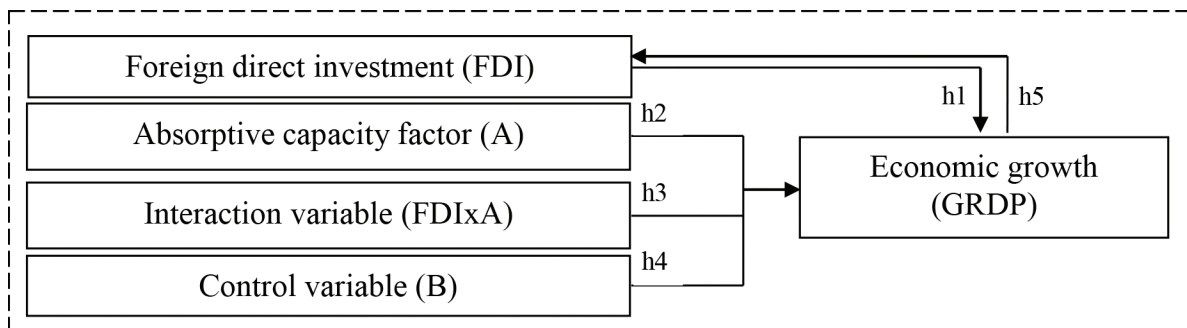


Figure 2: Analytical Framework for the Relationship between FDI and Economic Growth

These variables are kept constant as changing the interaction and absorption variables in the regression model.

The regression model assessing the impact of FDI on economic growth is specifically written as follows:

$$GRDP_t = \beta_0 + \beta_1 FDI_t + \beta_2 DI_t + \beta_3 GI_t + \beta_4 FL_t + \beta_5 H_t + \beta_6 FR_t + \beta_7 FDIxH_t + \beta_8 FDIxFR_t + u_t \quad (2)$$

In which, GRDP (Gross Regional Domestic Product) is denoted as the local economic growth; FDI: Foreign Direct Investment in locality; DI: Private domestic investment in locality; GI: Public investment in locality; L: Labor; H: Human capital; FR: Infrastructure; FDIxH: FDI absorptive capacity depends on human capital; FDIxFR: FDI absorptive capacity depends on infrastructure; t: subscript; $\beta_1, \beta_2, \beta_3, \dots, \beta_8$: regression coefficients; u_t : error model).

3.3. Data Collection Methods

Secondary data was collected between 1997 and 2019 from the Statistical Yearbook, Statistical Office of Binh Dinh Province. Therefore, data is highly reliability.

After collecting data, the study uses Eviews 9.0 software to estimate the regression model. In addition, the variables are converted to natural logarithms to reduce the high dispersion as well as the unusual observations of the original data.

3.4. Data Analysis Method

In order to estimate regression model, this study uses ARDL model – Autoregressive Distributed Lag (Pesaran et al., 2001) to analyze the multivariate time series.

Table 1: Descriptive Explanation of the Variables in the Model

Variable	Description	Reference	Expected sign
Dependent variable			
GRDP	Gross Regional Domestic Product (billion VND)	Jyun-Yi and Chih-Chiang (2008); Pegkas (2015); Nguyen and Huynh (2010); Erum et al. (2016)	
Independent variables			
FDI	Real foreign direct investment capital (billion VND)	Jyun-Yi and Chih-Chiang (2008); Pegkas (2015); Umeora (2013); Nguyen (2014); Tran (2015); Nguyen and Huynh (2010); Ta et al. (2020); Nguyen (2020)	+
Absorptive factors (Y)			
H	The ratio of trained workers (%)	Jyun-Yi and Chih-Chiang (2008); Koojaroenprasit (2012); Thai (2017)	+
FR	The volume of goods transported by local transport industry (thousand tons)	Nguyen and Nguyen (2013)	+
Group of interaction variable (FDI x Y)			
FDI * H	Product of FDI and H	Fadhil and Almsafir (2015); Jyun-Yi and Chih-Chiang (2008); Koojaroenprasit (2012); Nguyen et al. (2006); Nguyen (2014); Tran (2015)	+
FDI * FR	Product of FDI and FR	Zhang (2001); Nguyen (2014)	+
Control variables (X)			
DI	Investment capital from domestic private sector (billion VND)	Koojaroenprasit (2012); Su and Nguyen (2014); Nguyen and Huynh (2010)	+
GI	Public investment capital (billion VND)	Ghali (1998); Tran and Le (2014); Nguyen (2014)	+/-
L	Labor in the national economic sectors (thousand people)	Koojaroenprasit (2012); Nguyen and Nguyen (2013); Tran and Le (2014)	+

According to Hamuda et al. (2013), ARDL model has advantages over other cointegrating models, especially in the case of small sample. Therefore, secondary data is collected with small sample size, the author use ARDL estimation to replace other cointegration methods in determining the relationship between FDI and growth both in the short and long term.

From Equation (3.2), the ARDL model, with lag ($p_0, p_1, p_2, p_3, p_4 \dots p_8$) for the empirical study (the variables are converted to natural logarithms) is written as follows:

$$\begin{aligned} LG_t = & \alpha + \sum_{i=1}^{p_0} \beta_{i0} LG_{t-i} + \sum_{j=1}^{p_1} \beta_{j1} LFDI_{t-j} \\ & + \sum_{k=0}^{p_2} \beta_{k2} LDI_{t-k} + \sum_{l=0}^{p_3} \beta_{l3} LGI_{t-l} \\ & + \sum_{m=0}^{p_4} \beta_{m4} LL_{t-m} + \sum_{n=0}^{p_5} \beta_{n5} LH_{t-n} \\ & + \sum_{o=0}^{p_6} \beta_{o6} LFR_{t-o} + \sum_{q=0}^{p_7} \beta_{q7} LFDIxH_{t-q} \\ & + \sum_{r=0}^{p_8} \beta_{r8} LFDIxFR_{t-r} + u_t \end{aligned} \quad (3)$$

In which:

$LG_{t-i}, LFDI_{t-j}, LDI_{t-k}, LGI_{t-l}, LL_{t-m}, \dots, LFDIxFR_{t-w}$ are the stationary variable at the different lag; u_t : white noise.

4. Research Results

4.1. Unit Root Tests

According to ADF standard, results of unit root test show that most of the variables are stationary at both case of having trend and no trends with 1% significance level, while LGRDP and LDI variables are stationary strings I(1) with 10% significance level in the case of having trend and no trend; LGI and LFR are stationary strings I(1) with 5% significance level in the case of having trend.

4.2. Regressions Results: Investment Aspect

To evaluate the relationship between FDI and economic growth in term of investment aspect, model 3 regression with independent variables is used, which includes: investment capital (FDI, DI, GI) and labor. The regression results are presented in Table 3:

The estimated model results show that the impact coefficients of the variable LFDI on LGRDP are not statistically significant in the short and long term. This means that there is no empirical evidence of the effects of FDI on local economic growth.

This result is similar to studies by Belloumi (2014), Umeora (2013) and Ho and Pham (2016). The reason may be that the impact of FDI on the economic concentration depends on many factors (Nguyen & Pham, 2016). In particular, it can be explained in the case of Binh Dinh by the fact that the amount of implemented capital is still too low. Specifically, according to the statistics from Binh Dinh Statistical Office, besides the low registered capital, the realized capital ratio is only 30.9% compared with the registered capital in the 1997–2019 period.

At the same time, the results of Granger causality test shows that economic growth has a positive effect on FDI in Binh Dinh province. This result contributes to strengthen the theory and some previous research perspective (Umeora, 2013; Nguyen & Huynh, 2010; Nguyen, 2014). At the same time, the results of Granger causality test confirm that no empirical evidence was found for the impact of FDI on economic growth in Binh Dinh province in the research period.

The research tested the suitability and reliability of the model through Breusch-Godfrey Serial Correlation LM

Table 2: The Results of Unit Root Test (ADF Standard)

Variable	Original string		First difference	
	No trend	There is a trend	No trend	There is a trend
LGRDP	1.682017	−1.854679	−2.485323**	−3.351418*
Lg	−0.276528	−2.927832	−7.708682***	−7.348840***
LFDI	0.478490	−3.390494*	−5.824284***	−5.743644***
LDI	3.674303	−2.394005	−1.717434*	−6.935202***
LGI	2.377953	−1.728427	−3.369822***	−4.444895**
LL	2.539336	−0.604678	−3.703175***	−4.949711***
LH	1.930505	−2.358128	−5.305478***	−5.874716***
LFR	4.389854	−1.260240	−2.394713**	−4.360645**
LFDIxH	0.846856	−3.296085*	−5.759345***	−5.770476***
LFDIxFR	1.401854	−3.073179	−5.319719***	−5.585960***

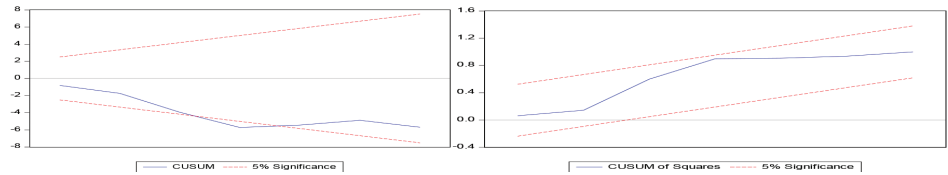
Note: *, **, *** significance at 10%, 5%, 1%.

Table 3: The Estimation Results of ARDL Model

ARDL (1,0,0,1,1)		Short-term coefficient of ECM model based on ARDL approach		Long-term coefficient of ARDL (1,0,0,1,1)	
Out	Coefficient	Out	Coefficient	Out	Coefficient
LGRDP (−1)	1.004486***				
LFDI	−0.003369	Δ (LFDI)	0.015125	LFDI	0.751143
LDI	0.022381***	Δ (LDI)	0.019869***	LDI	0.489483*
LGI	0.033142	Δ (LGI)	−0.021963	LGI	0.871116*
LGI (−1)	0.047022*				
LL	−0.187512	Δ (LL)	−0.187718	LL	−6.749990
LL (−1)	−0.560477				
C	1.988017**	ECM (−1)	0.004458***	C	−43.190537***
$R^2 = 0.899729$; Corrected $R^2 = 0.899594$					
F -Statistic = 7378,304; Prob = 0.000000					

Note: *, **, *** correspond to the significance level 10%, 5%, 1%.

Table 4: The Test of the Suitability Model

Correlation test	Statistic value of $\chi^2 = 2.073804$; Prob. = 0.1498
Error variance test change	Statistic value of $\chi^2 = 2.188109$; Prob. = 0.9487
Function testing	Statistic value of $F = 0.209462$; Prob. = 0.6547
The stability of residuals	

(testing for autocorrelation), Heteroskedasticity (Error variance test change), Cusum (the stability of residuals), and Ramsey RESET (function testing). The results show that the model is suitable and reliable (P -Value values > 0.05).

4.3. Regression Results: Absorptive Capacity

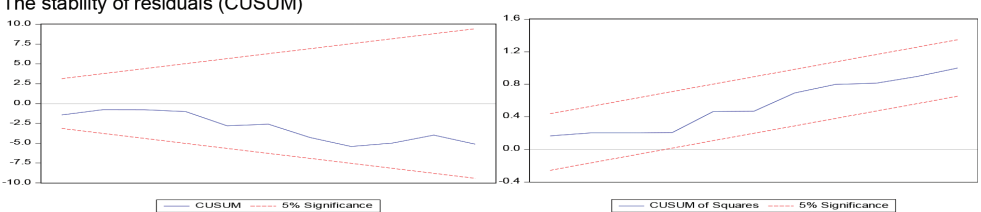
To clarify the role of some key local factors in the relationship between FDI and economic growth, with all absorptive factors and interaction variables with FDI included in the regression model (3). The regression results are presented as follows:

The initial regression results show that the Durbin-Watson statistics have the value $DW = 2.712945$ ($DW > 2.5$), so the model has the signs of characteristic error. Besides, the similar correlation test (LM) shows the statistical value

$\chi^2 = 6.798715$ with the P -value = 0.0091 < 0.05 , proving that the model has a self-correlation phenomenon. At the same time, the test results are performed with the model residue stability through the CUSUM cumulative residual test (Brown et al., 1975), showing that the solid line is beyond the limit of the two dashed lines (i.e., the cumulative sum of the out-of-the-range portion) correspond to the 5% significance level. Therefore, it can be confirmed that the residual of the model is not stable, does not ensure reliability and estimates the short-term and long-term coefficients.

Next, the research proceeds to remove from the model the non-statistically significant variables in the estimation results in Table 5, and continues to run the regression model again. After removing each variable (LFDI, LL) that is not statistically significant from the model one by one, the final regression results are shown as follows:

Table 5: The First Estimation Results of ARDL Model (1, 1, 0, 1, 0, 1, 0, 1, 1)

Variable	Coefficient	Variable	Coefficient
LGRDP (–1)	0.892694***	LH (–1)	0.352226**
FDI	–0.041180	LFR	0.123482*
LFDI (–1)	–0.073429	LFDIxH	–0.283297**
LDI	0.174294**	LFDIxH (–1)	–0.086966
LGI	–0.072498	LFDIxFR	0.042470**
LGI (–1)	0.125009**	LFDIxFR (–1)	0.023477
LL	0.120604	C	0.600621
LH	0.603541**		
$R^2 = 0.899929$; Adjusted $R^2 = 0.899786$			
F -Statistic = 7006,337; Prob = 0.000000; Durbin-Watson stat = 2.712945			
6.2. Test Results			
Correlation	Statistical value $\chi^2 = 6.798715$; Prob. = 0.0091		
Variance of error	Statistical value $\chi^2 = 8.669787$; Prob. = 0.8516		
Function testing	F -statistic value = 28.88611; Prob. = 0.0017		
The stability of residuals	<p>The stability of residuals (CUSUM)</p> 		

Note: *, ** correspond to the significance level of 10%, 5%.

Based on AIC and SBC criteria, model 1 with ARDL (1, 0, 1, 1, 0, 1, 0) is chosen. At the same time, estimation results both for the long term and short term are chosen with model 2 and model 3.

The results show that the interaction variables between FDI and FR, FDI and H are statistically significant in both long-term and short-term cases. This finding shows that human capital and infrastructure quality are important factors, which the locality *should achieve* in order to gain the benefits of FDI, where:

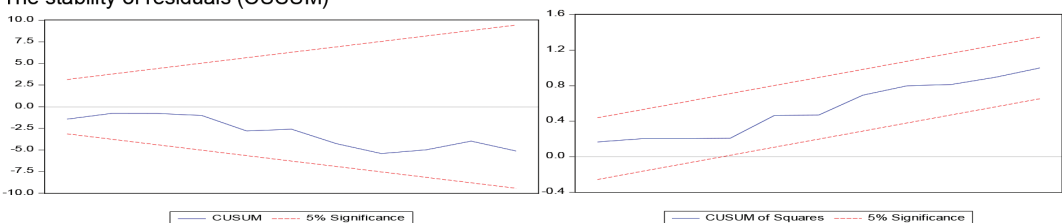
- The interaction variable between FDI and FR is positive and statistically significant in both cases. This shows that the infrastructure is really an important factor promoting the spread of FDI in the localities.
- The coefficient of the interaction between FDI and H has a negative sign and is statistically significant in both cases. This shows that the high quality of labor is an advantage for attracting FDI. However, in this case, the labor quality in Binh Dinh province is low.

This is a barrier that limits the contribution of FDI to economic growth.

From the above results, the study leads to the general conclusion that the locality needs to have suitable policies to improve the quality of human capital and infrastructure in attracting FDI. Therefore, it creates the real motivation for economic growth. According to the Statistical Yearbook of Vietnam, the size of trained workers in Binh Dinh in 2019 only reached 19.2%. This is a barrier and limitation in the contribution of FDI to the economic growth.

Besides, the test results (correlation, variance of error, function testing and the stability of residuals) show that the model is reliable. Specifically, the stability of residual test (CUSUM and CUSUMSQ) shows that the model is suitable. Besides, the correlation test (LM) with p -value = 0.1761; Variance of error (Heteroskedasticity) with p -value = 0.7404; Function testing (Ramsey RESET) with p -value = 0.1065 are more than 0.05. The results show that the research model is suitable and reliable.

Table 6: The Final Estimation Results of ARDL Model (1, 0, 1, 1, 0, 1, 0)

Model (1) ARDL (1, 0, 1, 1, 0, 1, 0)		Model (2) Long-term coefficient of ARDL (1, 0, 1, 1, 0, 1, 0)		Model (3) Short-term coefficient of ECM model based on ARDL approach	
Variable	Coefficient	Variable	Coefficient	Variable	Coefficient
LGRDP (−1)	0.882598***				
LDI	0.178766***	LDI	1.522680***	Δ (LDI)	0.177985***
LGI	−0.004157	LGI	0.703748**	Δ (LGI)	0.001337
LGI (−1)	0.078464***				
LH	0.392068**	LH	0.157262*	Δ (LH)	0.426514***
LH (−1)	0.138800**				
LFR	0.076839**	LFR	0.654493*	Δ (LFR)	0.077528**
LFDI _x H	−0.162683*	LFDI _x H	−0.254556*	Δ (LFDI _x H)	−0.179205***
LFDI _x H (−1)	−0.015396**				
LFDI _x FR	0.003319	LFDI _x FR	0.028272*	Δ (LFDI _x FR)	0.008938**
C	1.005602***	C	−8.565443***	ECM (−1)	−0.119063***
$R^2 = 0.899887$; Adjusted $R^2 = 0.899785$ F -Statistic = 9748.407; Prob = 0.000000					
7.2. Test result					
Correlation (LM)	Statistical value $\chi^2 = 1.830491$; Prob. = 0.1761				
Heteroskedasticity	Statistical value $\chi^2 = 6.840362$; Prob. = 0.7404				
Function testing (Ramsey RESET)	F -statistic value = 8.279106; Prob. = 0.1065				
The stability of residuals (CUSUM)	The stability of residuals (CUSUM) 				

Note: *, **, *** correspond to the significance level of 10%, 5% and 1%.

5. Conclusion and Recommendations

The results not only contribute to strengthening the previous research perspective, but also show that the relationship between FDI and economic growth is a conditional relationship, specifically:

- (i) The research results provide the empirical evidence on the existence of a one-way causal relationship of economic growth with FDI attraction. The empirical evidence once again confirms the role of economic

growth in attracting FDI, which has been identified by several perspectives.

- (ii) At the same time, the results show that there is no statistical evidence about the positive effects of FDI on Binh Dinh's economic growth when the amount of implemented capital is too low. However, this effect is significant when the size of FDI capital reaches a certain threshold. This result implies that the locality should not only focus on FDI attraction, but also promote FDI disbursement. This is essential to promote the local economic growth.

The estimation results provide statistical evidence that human resources and infrastructure are two factors that play a key role in the relationship between FDI and economic growth. In addition, the statistical results show that local institutional quality and absorptive capacity of domestic enterprises play an important role in enhancing FDI absorptive capacity to promote local economic growth. This evidence provides a solid basis for the perspective that confirms the benefits of FDI will play a role in economic growth, but it will depend on local absorptive capacity.

The research results are useful in providing an information channel for Binh Dinh's policymakers. Besides, focusing on FDI attraction, the local administration will have stronger solutions to enhance FDI disbursement leading to promote economic growth. The real motivation for economic growth is to promote the benefits of FDI and combine with local policies in improving FDI absorptive capacity factors.

From the research results, some policy implications for the role of FDI in promoting economic growth in Binh Dinh are as follows:

(i) Increasing FDI attraction and promoting FDI disbursement:

First, improving the quality of enterprise support services, especially supporting enterprises that were granted the investment licenses;

Second, improving the state management for FDI;

Third, announcing and improving the quality of planning activities;

Fourth, innovating and improving the effectiveness of investment promotion activities.

(ii) Improving absorptive capacity to increase the benefits of FDI:

First, completing the construction of synchronous infrastructure;

Second, improving the quality of human resources; with special attention to vocational training, link vocational training institutions with FDI enterprises.

Third, improving institutional quality of the locality;

Fourth, supporting capacity development of enterprises.

(iii) Innovating economic growth model and enhancing competitiveness in attracting FDI:

First, enhancing the quality of labor productivity;

Second, the economic growth of Binh Dinh province needs to focus on the quality and development of supporting industries;

Third, Binh Dinh province should provide incentives to attract FDI to spearhead economic sectors that are well positioned to create a breakthrough in economic growth.

References

- Alavinasab, S. M. (2013). Foreign trade and economic growth in Iran: an empirical study. *International Journal of Academic Research in Business and Social Sciences*, 3(11), 508–519. <https://doi.org/10.6007/IJARBS/v3-i11/369>
- Athukorala, P-C. (2009). Trends and patterns of foreign direct investments in Asia: A comparative perspective. *Margin: The Journal of Applied Economic Research*, 3(4), 365–408. <https://doi.org/10.1177/097380100900300403>
- Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model. *Economic Systems*, 38(2), 269–287. <https://doi.org/10.1016/j.ecosys.2013.09.002>
- Bengoa, M., & Sanchez-Robles, B. (2003). Foreign direct investment, economic freedom and growth: new evidence from Latin America. *European Journal of Political Economy*, 19(3), 529–545. [https://doi.org/10.1016/S0176-2680\(03\)00011-9](https://doi.org/10.1016/S0176-2680(03)00011-9)
- Binh Dinh Statistical Office. (2019). *Statistical Yearbook*. Statistical Publishing House.
- Brown, R. L., Durbin, J., & Evans, J. M. (1975). Techniques for Testing the Constancy of Regression Relationships over Time. *Journal of the Royal Statistical Society. Series B (Methodological)*, 37(2), 149–192. Retrieved from https://hhstokes.people.uic.edu/ftp/e535/Brown_Durbin_evans_1975.pdf
- David, R. (1817). *On the principles of political economy and taxation*. Publishing by Batoche Books Kitchener 2001.
- Djurovic, A. B. (2012). Impact of foreign direct investment on the economic growth of developing countries (2000–2010). *Економски Развој-Economic Development*, 14(2–3), 63–83.
- Easterly, W., & Levine, R. (2001). What have we learned from a decade of empirical research on growth? It's Not Factor Accumulation: Stylized Facts and Growth Models. *The World Bank Economic Review*, 15(2), 177–219. <https://doi.org/10.1093/wber/15.2.177>
- Erum, N., Hussain, S., & Yousaf, A. (2016). Foreign Direct Investment and Economic Growth in SAARC Countries. *Journal of Asian Finance, Economics and Business*, 3(4), 57–66. <https://doi.org/10.13106/jafeb.2016.vol3.no4.57>
- Fadhil, M. A., & Almsafir, M. K. (2015). The role of FDI inflows in economic growth in Malaysia (time series: 1975–2010). *Procedia Economics and Finance*, 23, 1558–1566. [https://doi.org/10.1016/S2212-5671\(15\)00498-0](https://doi.org/10.1016/S2212-5671(15)00498-0)
- Ghali, K. H. (1998). Public investment and private capital formation in a vector error-correction model of growth. *Applied Economics*, 30(6), 837–844. <https://doi.org/10.1080/000368498325543>
- Hamuda, A. M., Šulíková, V., Gazda, V., & Horváth, D. (2013). ARDL investment model of Tunisia. *Theoretical & Applied Economics*, 20(2), 57–68. Retrieved from: https://www.researchgate.net/publication/263729011_Ardl_investment_model_of_Tunisia

- Ho, T. T. M., & Pham, T. T. T. (2016). The relationship between economic growth and FDI in Khanh Hoa. *Can Tho University Journal of Science*, 44(16), 8–38.
- Jyun-Yi, W., & Chih-Chiang, H. (2008). Does foreign direct investment promote economic growth? Evidence from a threshold regression analysis. *Economics Bulletin*, 15(12), 1–10.
- Koojaroenprasit, S. (2012). The impact of foreign direct investment on economic growth: A case study of South Korea. *International Journal of Business and Social Science*, 3(21), 8–19.
- Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(1), 3–42. [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
- Nowbutsing, B. (2009). FDI, domestic investment and economic growth: a theoretical framework. Retrieved from <https://smartech.gatech.edu/handle/1853/35284>
- Nguyen, T. T. A., Vu, X. N. H., Tran, T. T & Nguyen, M. H. (2006). *The impact of FDI on economic growth in Vietnam*. Science and Technology Publishing House.
- Nguyen, T. T. A., & Nguyen, H. H. (2013). Quantitative research on factors affecting the attraction of FDI in Vietnam provinces in the current period. *Journal of Foreign Economic Relations*. Extraction from <http://ieit.edu.vn/en/thu-vien-tap-chi/tap-chi-kinh-te-doi-ngoai/item/130>
- Nguyen, K. Q. B. (2014). The role of absorption factors in the relationship between FDI and economic growth in developing countries. *Journal of Banking and Financial Technology*, 9(102), 8–16.
- Nguyen, N. P., & Pham, G. Q. (2016). The influence of FDI inflows and trade openness on economic growth. *Banking Journal*, 3(6), 7–10.
- Nguyen, M. T. (2014). *FDI and economic growth in regions of Vietnam*. Doctoral dissertation, Ho Chi Minh City, Vietnam: University of Economics.
- Nguyen, P. T., & Huynh, C. M. (2010). The relationship between FDI and Vietnam economic growth. *Proceedings of the 1st Conference of Science and Technology*, Ho Chi Minh City University of Technology, pp. 577–588.
- Nguyen, H. H. (2020). Impact of Foreign Direct Investment and International Trade on Economic Growth: Empirical Study in Vietnam. *Journal of Asian Finance, Economics and Business*, 7(3), 323–331. <https://doi.org/10.13106/jafeb.2020.vol7.no3.323>
- Pegkas, P. (2015). The impact of FDI on economic growth in Eurozone countries. *The Journal of Economic Asymmetries*, 12(2), 124–132. <https://doi.org/10.1016/j.jeca.2015.05.001>
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326. <https://doi.org/10.1002/jae.616>
- Su, D. T., & Nguyen, M. T. (2014). The impact of FDI on local economic growth in Vietnam. *Journal of Economic Development*, 283(5), 21–41.
- Smith, A. (1776). *The Wealth of Nations*. New York: The Modern Library.
- Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70(1), 65–94. <https://doi.org/10.2307/1884513>
- Ta, V. L., Le, Q. H., Nguyen, T. H. L., Phan, T. T, & Do, A. D. (2020). Investigating Foreign Direct Investment Attractive Factors of Korean Direct Investment into Vietnam. *Journal of Asian Finance, Economics and Business*, 7(6), 117–125. <https://doi.org/10.13106/jafeb.2020.vol7.no6.117>
- Thai, S. (2017). *A study on impact of FDI on economic growth in the Central Key Economic Region*. Da Nang: Doctoral dissertation, The University of Da Nang.
- Tran, K. C. (2015). Factors affecting relationship of FDI and economic growth. *The Journal of Development & Integration*, 26(36), 10–20.
- Tran, N. N. A. T., & Le, H. P. (2014). The impact of public investment on Vietnam's economic growth: Experimental results from ARDL model. *The Journal of Development & Integration*, 19(29), 3–10.
- Tien, N. N., Thuy, N. T. T., Binh, L. T. T. (2020). Impact of FDI on economic growth from the sustainable development perspective: A case study from the assessment in the middle of Vietnam. *Kasetsart Journal of Social Sciences*, 41(3), 647–652. <https://doi.org/10.34044/j.kjss.2020.41.3.30>
- Umeora, C. (2013). Effects of foreign direct investment (FDI) on economic growth in Nigeria. Available at SSRN 2285329.
- UNCTAD. (1998). *World investment report 1998: Trends and determinants*. New York: United Nations.
- Zhang, K. H. (2001). Does foreign direct investment promote economic growth? Evidence from East Asia and Latin America. *Contemporary Economic Policy*, 19(2), 175–185. <https://doi.org/10.1111/j.1465-7287.2001.tb00059.x>