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Impact of Foreign Direct Investment on Economic Growth in the North Provinces of Vietnam in the Quality of Institutions Government

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Abstract:
The impact of foreign direct investment (FDI) on economic growth has long been of interest to researchers and policy makers. However, the results of this effect are still controversial; some studies suggest that FDI has the ability to promote economic growth. Some other studies suggest that FDI has a negative effect on economic growth. In this study, the authors examine the impact of FDI on economic growth in the Northern provinces of Vietnam in terms of the quality of institutional governance in these provinces in the period 2011-2020. By the two-step SGMM estimation method, the research results show that FDI has a positive impact on economic growth. At the same time, institutional quality is one of the causes affecting the relationship between FDI and economic growth. On the basis of research results, the author provides policy implications for the Northern provinces of Vietnam.

Keywords*: FDI, economic growth, institutional governance*

1. Introduction

The remarkable development of the economy of the vast majority of countries in the world is due to knowing how to mobilize and use foreign direct investment capital. The presence of FDI enterprises in the past three decades has contributed to 'changing flesh' of the Vietnamese economy. FDI capital plays an important role in promoting Vietnam's economic growth. According to the Vietnam Bureau of Statistics, the contribution of the FDI sector to the country's GDP increased from 9.3% in 1995 to 16.9% in 2008 and 19.6% in 2017. The proportion of state budget revenue from the FDI sector also increased significantly, from 1.8 billion USD in the period 1994-2000 to 23.7 billion USD in the period 2011-2015, accounting for nearly 14% of total state budget revenue. In 2021, FDI enterprises achieve a total revenue of over US$7217 million, up 6% compared to 2020; export value reached 5556 million USD, up 8%; over VND 4337 billion to the state budget.

In the past time, studies on the relationship between FDI and economic growth have been carried out mainly for the country as a whole, such as those of Brecher and Diaz-Alejandro (1977); Blomstrom et al (1992); Blomstrum teals (1994); Rodriguez-Glare (1996); Bosworth and Collins (1999); Agrawal (2000); Zhang (2001); Tiwari (2011); Roman and Padureanu (2012)... The results of the studies show that there exists a relationship between FDI and economic growth. In general, all studies show a positive impact of the relationship between FDI on economic growth, but there are still studies showing that FDI has a negative impact on economic growth. More importantly, what are the causes for the different effects of FDI on economic growth? Recent studies have found evidence of the influence of institutional quality on this relationship (Farla, 2014). This study was conducted to find evidence on the impact of institutional quality on the relationship between FDI and economic growth.

2. Literaturee review

2.1.Foreign Direct Investment Capital

According to the IMF (1993), foreign direct investment is investment capital made in enterprises operating in another country in order to attract long-term benefits to investors. The investor's aim is to gain an effective voice in the management of that business. This concept emphasizes on two factors: the long-term of investment activities and the investment motive is to gain direct control over the management of the enterprise, operating and using the investment capital that they spend at the enterprises establishments in other countries.

According to World Bank (1993), foreign direct investment is the establishment or purchase of a substantial part by a national of one country, which owns and manages at least 10% of the equity of an enterprise in another country.

Foreign investors can be individuals or businesses, and investments can be wholly owned by foreigners or by joint ventures between foreign investors and local investors.

It can be said that FDI is the capital flow of individuals and organizations of this economy to invest in production and business activities in the territory of another economy for the purpose of generating profits or other benefits for investors. This is the source of money used for foreign direct investment. FDI capital can be classified according to the nature of capital flow (stock capital, reinvested capital, internal loan) or according to the purpose of the investor (resource-seeking capital, efficiency-seeking capital, market-seeking capital)...

2.2. Economic Growth

According to Simon Kuznets (1966), a country's economic growth is a sustained increase in its ability to provide an increasing variety of economic goods to its population; this increasing ability is based on industrial advanced technology and the institutional and ideological adjustments it requires. According to Douglass C. North and Robert Paul Thomas (1973), economic growth occurs if output grows faster than population. Meanwhile, Hendrik Van den Berg (2001) argues that economic growth is an increase in human welfare. According to Paul Athony Samuelson (2011), economic growth is the expansion of gross domestic product (GDP) or potential output of a country. In other words, growth occurs when a country's production possibilities frontier (PPF) shifts outwards.

2.3. Institutions Governance

The World Bank defines institutions as the exercise of political power to govern the operations of a country. The African Development Bank (1999) extended the World Bank definition to adapt to the changing global economy in the context of globalization. Specifically, the African Development Bank (1999) defines institutionalization as a process that refers to the manner in which power is exercised in the management of a country's public affairs and relations with other countries. The World Bank and African Development Bank definitions both focus on the effectiveness of government in providing services to members of society. The distribution of political power in society is accomplished by political institutions and organizations that distribute resources, while groups with greater economic power can also acquire political power. This is considered as a suitable theoretical framework for a dynamic model with the main variables being political institutions and distribution of resources. These variables change over time as existing economic institutions influence the distribution of resources, and today's politically powerful groups have altered political institutions to strengthen their power future political power. Economic institutions promote economic growth when political organizations allocate power to groups with a vested interest in exercising broad power, when they create effective constraints on those in power. power, and when there is a low correlation between wage earners and power holders.

2.4. Previous Reseaches

According to a study done by Agrawal (2000) on the economic impact of foreign direct investment in South Asia by performing time series, analyzing data tables from five South Asian countries: India, Pakistan , Bangladesh, SriLanka and Nepal. The author builds a regression model and estimates it by means of least squares (OLS). Research results show that there exists an impact between foreign investment on economic growth. Furthermore, he explains that the impact of FDI inflows on GDP growth rate was negative before 1980, positive in the mid-1980s and stronger positive effect in the late 1980s and early 1990s. Furthermore, he explained that the impact of FDI inflows on GDP growth was negative before 1980, positive in the mid-1980s, and stronger in the late 1980s and early 1990s. Most South Asian countries followed import substitution policies and had high import taxes in 1960 and 1970. These policies gradually changed from 1980, and by the early 1990s most countries had Eliminate import substitution strategies, market-oriented policies are more conducive to international trade (Pradeep Agrawal, 2000).

Roman and Padureanu (2012) conduct research on the impact of FDI on the economic growth of Romania in the period 1990-2010. The author proposes a model for the relationship between FDI and economic growth during the transition. modified in Romania, using a neoclassical model with a Cobb-Douglas production function to analyze the impact of FDI on economic growth. Research results show that Romania's economy grows from the positive influence of fiscal policy and FDI.

In addition, studies also show that there is a two-way relationship between FDI and economic growth. Zhang (2006) conducts research on the impact of FDI on China's economic growth in the period 1992 - 2004. The author builds a regression model based on the Cobb - Douglas production function and estimates the model by method of least squares (OLS). Research results show that rapid economic growth, not only creates demand for FDI capital, but also provides better opportunities to generate profits and thus attract more FDI inflows. In addition, FDI can influence economic growth faster and support economic development of host economies through direct effects and indirect spillover effects. Therefore, FDI and economic growth are interdependent and will lead to two-way causality.

Anh (2014) by using VAR model evaluated the impact between foreign direct investment and economic growth in Vietnam. The results show that foreign direct investment (FDI) has a very positive impact on economic growth in Vietnam such as: Export stimulation, high quality of human resources and important prerequisites for growth. Vietnam economy. Ho (2015) has contributed to quantifying the relationship between FDI and Vietnam's economic growth through empirical verification conducted on the basis of exploiting VAR autoregressive vector model with Vietnam data for the period 1999 - 2014. The author concludes that, for developing countries like Vietnam, foreign direct investment (FDI) is one of the important resources contributing to economic growth.

Panel (or cross) data studies have many advantages over time series data, overcoming the shortcomings of time data. However, when working with panel data in the country space also exists: countries that are different in many aspects

(historical, economic, institutional, cultural) presenting the same data panel can do for the relationship between FDI and growth is not clear and even the results are skewed. In fact, estimation with regional spatial panel data in the country can become more reliable, especially the issues of region-specificity under consideration: level of development, economic growth, resources human resources, investment capital or fiscal policy, trade openness, infrastructure of the region.

Studies on the relationship between FDI and economic growth in the regional space within the country are carried out mainly in the regions of China, Russia and some experiments in the regions of Vietnam.Kui-yin Cheung, Ping Lin (2004) test the spillover effect of FDI on innovation in China: Evidence from provincial data for the period 1995-2000, with FE and RE estimation methods, for found the positive impact of FDI on domestic technology in regions in China.Svetlana Ledyaeva and Mikael Linden (2010) on FDI and economic growth: Empirical evidence from regions of Russia. Using the Solow-Swan model (1956), the data in the period 1996-2003, the method to estimate the difference GMM. The results show that there is no link between FDI and economic growth at the regional level in Russia.Chien and Linh (2013) assess the relationship between FDI and economic growth in Vietnam. By using panel data of 64 provinces for the period 2000-2010 and applying the FE estimation method, it is found that there is a positive two-way relationship between FDI and average GDP. When looking at the regional level, it is found that only 5 out of 6 regions of Vietnam have a causal relationship, especially that the interaction becomes stronger and more positive in remote areas with favorable economic conditions socio-economic still difficult. This somewhat contrasts with previous experiments.

3.ResearchMethod and Data

3.1. Research Model

Based on the theory and related previous studies (Agrawal, 2000; Roman and Padureanu, 2012), this study proposes an empirical model to analyze the impact of FDI on economic growth in the northern provinces of Vietnam is based on the Cobb-Douglas theory, specifically as follows:

$$lny_{it}=\beta_0+\ \beta_1 lny_{it-1}+\beta_2 lnid_{it}+\beta_3 lnlabor_{it}+\beta_4 lnfdi_{it}+\beta_5 lnqin_{it}+\varepsilon_{it}\quad(1)$$

$$lny_{it}=\beta_0+\ \beta_1 lny_{it-1}+\beta_2 lnid_{it}+\beta_3 lnlabor_{it}+\beta_4 lnfdi_{it}+\beta_5 lnqin_{it}+\beta_6 ln(fdi*qin)_{it}+\varepsilon_{it}\quad(2)$$

In which, y_{it} is the economic growth of province i in year t, represented as the income; fdi_{it} is foreign direct investment in province i in year t; id_{it} is the domestic investment capital of province i year t; $labor_{it}$is the labor force in the province i year t; qin_{it} represents the institutional quality of province i in year t, the composite institutional index qin examines the institutional aspects that affect the FDI-growth relationship (Appendix 1).

Variable	Symbol	Measure	Source
Dependent variable			
Economic growth represented by income of provinces over the years	lny	Ln(y_{it})	Statistical yearbooks of provinces
Independent variables			
The lag of economic growth in the provinces over the years	L.lny	Ln(y_{it-1})	
The province's domestic investment capital over the years	Lnid	Ln(id_{it})	Statistical yearbooks of provinces
Labor force of the province over the years	Lnlabor	Ln($labor_{it}$)	Statistical yearbooks of provinces
Provincial institutional quality over the years	Lnqin	Ln(qin_{it})	Summary of PAPI and PCI
Dummy	D	1 if the province is in a key economic region; 0 if the province is not in a key economic zone	

Table 1: Summary of Variables in the Research Model
Source: The Authors

To test the difference in the level and direction of the impact of FDI on economic growth between the provinces in the key economic regions and the provinces not in the key economic zones in the sample. The author adds to the model (1) dummy variable D (takes the value of 1 in the case of provinces in the key economic region, takes the value of 0 in the case of the provinces that are not in the key economic region). The interaction variable (fdi*D) is included in the model by the author to test the difference in the change of economic growth when FDI changes between the province in the key economic region and the group of provinces not in the economic zone key point, holding all other factors constant.

$$lny_{it}=\beta_0+\ \beta_1 lny_{it-1}+\beta_2 lnid_{it}+\beta_3 lnlabor_{it}+\beta_4 lnfdi_{it}+\beta_5 D+\beta_6(lnfdi_{it}*D)+\varepsilon_{it}\quad(3)$$

3.2. Model Estimation Method

This study performs regression models using the System GMM two-step method of Arellano & Bond (1991). This method is commonly used in estimating linear dynamic panel data or in panel data where variable variance and autocorrelation exist. In case these phenomena exist, the classical linear estimates of panel data models such as FE (fixed effects), RE (random effects), LSDV (least squares dummy variable) will no longer be effective estimates. effective, reliable. The SGMM two-step method is suitable for this study because the model is dynamic with one side of the equation containing the lagged variable. (At this time, the static table estimators do not allow the creation of representative variables from the variables in the model themselves.) The independent variables are not strictly extrogenous, that is, correlated with the residuals; or there is an endogenous variable in the model. There are separate fixed effects and variable variance or autocorrelation of the error.

3.3. Research Data

To examine the impact of FDI on economic growth in the northern provinces of Vietnam, the study uses panel data regression. This is a research method that has been applied in many previous studies. For example, in the studies of Bosworth and Collins (1999), Su Dinh Thanh and Nguyen Minh Tien (2014)... According to Baltagi (2008), using panel data has two great advantages such as: i) Data tables for more reliable estimates of the parameters in the model; ii) Panel data allows to identify and measure impacts that cannot be identified and measured using cross-sectional or time-series data. Due to the limitation of published data, the study was conducted in 21 northern provinces of Vietnam collected from 2011 to 2020 (see Appendix 2 for details). As a rule of thumb, the sample size should be at least 5 times the number of variables in the model (Tho, 2011). With panel data covering 21 provinces collected from 2011 to 2020, the study sample consists of 21 x 10 = 210 observations and meets the requirement of relevance. The results of descriptive statistics for the variables used in the study are shown in Table 2.

Variable	Obs	Mean	Std. Dev.	Min	Max
y	210	55.90147	31.80919	18.88655	172.895
id	210	26828.91	40823.11	3282.721	252789.4
fdi	210	8240.218	13357.33	.1	91939
Labor	210	866.2534	708.5917	375.8704	4046.95
Qin	208	5.4875	1.140782	1.39	9.09
D	210	.3333333	.4725309	0	1
After taking theln					
lny	210	3.888762	.5052752	2.93845	5.152685
lnid	210	9.685223	.8990279	8.096428	12.44031
lnfdi	210	7.226643	2.715642	-2.302585	11.42888
lnqin	208	1.678074	.2323468	.3293037	2.207175
lnlabor	210	6.606645	.4821237	5.929245	8.305718
fdi_qin	208	12.32523	5.010841	-3.220665	23.13426
fdi_D	210	3.124417	4.461489	0	11.42888

Table 2: Descriptive Statistics of Variables in the Model
Source: Calculated by the Authors by Stata Software 15.0
Note: Qin Lacks Data for the Two Provinces of
Bac Giang(2014) and Quang Ninh (2018)

The results of descriptive statistics show that the income y represents the economic growth of the provinces with an average value of about 55.9 million VND/person/year. The variation in average income between provinces is relatively large, about 31.8 million VND/person/year. Besides, FDI from the northern provinces of Vietnam has an average value of about 8240.2 billion VND/year. In addition, the domestic investment capital of the provinces in the period 2011-2020 has an average value of about 26828.9 billion VND/year. The average labor force of these provinces in the study period is about 866.3 thousand people/year. The institutional variable has the average score of the provinces about 5.48 points.

4. Research Results

The reliability tests of the model that we have performed include: Test of residual autocorrelation: According to Arellano & Bond (1991), the GMM estimate requires a first-order correlation and no correlation the quadratic correlation of the residuals. Therefore, when testing hypothesis H0: there is no first order correlation (AR(1) test) and no second order correlation of residuals (AR(2) test), we reject H0 in AR (1) test and accept H0 in AR (2) test, the model is suitable. Hansen test is used to test the hypothesis H0: the instrumental variables are suitable. Accepting the hypothesis H0 means that the instrumental variables used in the model are suitable. The number of instrumental variables used is smaller than the number of groups (21 provinces) according to the 'rules of thumb' of Roodman (2009).

Variable	Model Estimation			
	(1)	(2)	(3)	(4)
l.lny	0.7968*** (0.0945)	0.6884*** (0.1370)	0.7570*** (0.0986)	0.7321*** (0.1677)
lnfdi	0.0092** (0.0088)	0.0044 (.0152)	0.0275** (0.0406)	-0.0012 (0.0124)
lnid	0.2042* (0.1142)	0.3430* (0.1766)	0.2482* (0.1272)	0.1809 (0.1557)
lnlabor	0.2274* (0.1293)	0.4771* (0.2317)	0.3373* (0.1682)	0.2665* (0.2166)
lnqin		0.0748*** (0.0246)	0.0557** (0.1985)	
fdi_qin			0.0172** (0.0249)	
D				0.0620 (0.1013)
fdi_D				-0.0057** (0.0151)
_cons	0.4414** (0.1749)	1.2408** (.5218)	.7392* (.4810)	1.1188 (.6127)
N	21	21	21	21
Number of IV	6	7	8	7
AR(1) p-value	0.000	0.016	0.020	0.005
AR (2) p-value	0.317	0.785	0.241	0.410
Hansen p-value	0.305	0.102	0.253	0.156

Table 3: Results of Model Estimation by SGMM Twostep Method
Source: Calculated by the Authors by Stata Software 15.0
*Note: Standard Errors in Parentheses; * P<0.10, ** P<0.05, *** P<0.01*

The estimated results in Table 3 show that all 4 models have p-value of AR (1) test less than 5% significance level and p-value of AR (2) test is larger significance level of 5%. Hence the model has first order autocorrelation but no second order autocorrelation of residuals. At the same time, Hansen's test in all 4 models has p-values greater than the 5% significance level, that is, the instrumental variables used in the model are appropriate. The 'rules of thumb' of Roodman (2009) is also guaranteed. Thus, all 4 models ensure the reliability to conduct the analysis.

Model (1) aims to assess the impact of FDI on economic growth of the northern provinces of Vietnam, but does not consider the institutional quality factors of these provinces. The estimated results show that the regression coefficient of the variable *fdi* is 0.0092 with a positive value and statistical significance at the 5% level. This result shows that FDI has a positive impact on economic growth in the northern provinces of Vietnam. This result is consistent with the results of Agrawal (2000), Roman and Padureanu (2012).

Models (2) and models (3) aim to assess the impact of FDI on economic growth of the northern provinces of Vietnam with consideration of institutional quality factors. The estimated results show that in model (2), the regression coefficient of the *qin*variable is 0.0748 with a positive value and statistically significant at 1%, which shows that the improvement of institutional quality has an impact positively to the economic growth of these provinces. In model (3), when considering the influence of institutional quality on the impact of FDI on economic growth, the estimated results show that the regression coefficient of the variable *fdi_qin* is 0.0172 with positive value and significant statistical significance at the 5% level. This result shows that improving institutional quality can help increase the positive impact of FDI on economic growth in the northern provinces of Vietnam.

Model (4) aims to assess the impact of FDI on economic growth taking into account the difference between provinces in key economic regions and provinces not in key economic zones. The model estimation results show that the regression coefficient of the variable *fdi_qin* is -0.0057, which has a negative value and is statistically significant at the 5% level. This shows that the impact of FDI on economic growth of the provinces that are not in the key economic region is larger than that of the provinces in the key economic region in the North of Vietnam. The reason that can explain this result is that the economies of the provinces that are not in the key economic zones receive little attention from the state for investment, have capital with infrastructure, science and technology, and high educational level labor is lower than that of provinces in key economic regions. When FDI flows into the provinces that are not in the key economic regions, it will accelerate these factors and create a rapid economic growth.

5. Policy Implications and Limitations of the Study

5.1. Policy Implications

Firstly, the research results show that FDI has a positive impact on the economic growth of the northern provinces of Vietnam. Therefore, these provinces need to have policies to attract FDI. In which, improving the investment environment is very important and necessary. The main purpose of investors' investment abroad is profit. Therefore,

where there are more favorable, more attractive conditions, lower investment and business costs for efficient investment (high profit) will attract more FDI. As for the host country, here are the provinces, the aspect of creating jobs, creating an environment for technology transfer and creating stability for long-term business of foreign investors is also the goal of improvement investment environment.

Second, institutional quality has a positive impact on the relationship between FDI and economic growth. Therefore, provinces in Vietnam need policies to improve the institutional environment. Specifically as:

Create an equal business environment for businesses of all economic sectors. First of all, it is necessary to quickly eliminate discrimination and create a level playing field for all businesses in order to reduce risks (appearing due to policy changes, macro instability, not guaranteeing property rights, ownership, due to poor contract enforcement etc). At the same time, it reduces barriers to competition by simplifying market entry procedures and creating favorable conditions for enterprises to exit the market with the lowest transaction and opportunity costs.

To perfect the market for factors of production, first of all, the capital market, the labor market and the real estate market. Foreign investors often come from countries with market economies and well-functioning factor markets. That is, access to factors of production is easy and flexible in terms of price ranges, space and time. The underdevelopment of these markets in the provinces is a major weakness and a cause of high production costs and reduced opportunities to take advantage of business opportunities.

Promote administrative reform, especially at the local level, in association with the process of decentralization of State management in general and investment management in particular. Decentralization needs to go with clear responsibilities of each individual on the basis of taking the common interests of society as a basis for evaluation. That is to say, decentralization is not only the empowerment of proactive decision-making in accordance with the regulatory authority, but also the need to assess the true impact of investment decision-making after the project goes into operation work. For example, for job creation, contributing to the increase of output value and added value for the locality... At the local level, it is necessary to have a policy to quickly improve the capacity of the staff.

Third, the research results also show that the impact of FDI on economic growth can vary depending on the province. Specifically, for provinces in key economic regions, the impact of FDI has not contributed as much to economic growth as for provinces that are not in key economic regions, FDI is still an important source to promote economic growth economic. Therefore, the provinces that are not in the key economic regions need policies to take advantage of more FDI. However, the provinces in the key economic regions, although the investment focus of the Vietnamese government, does not mean that FDI capital is not important. These provinces have advantages in terms of facilities, people, location...so they often have a higher chance of attracting FDI than other provinces, so these provinces should try to choose FDI sources with both profitable and not harmful to the environment. Usually, FDI coming from developed countries is usually done through multinational companies (Tiwari, 2011). Therefore, it is necessary to have a policy to attract multinational companies, especially those with technology potential, through creating a common investment environment enough to create confidence for investors and politicians investment incentive book. However, investment incentives should not be widely applied, but should only focus on a few areas that satisfy the conditions to enjoy these incentives Vietnamese provinces/governments need to ensure the implementation of preferential policies, in order to minimize the transaction costs involved. There are many possible measures such as tax incentives, infrastructure (land and infrastructure services), labor-related incentives (personal income tax).

5.2. Limitations of the Study

The study uses Vietnam's provincial data, so many statistical indicators are incomplete and difficult to be complete, so the control variables in the model are not really complete. The study period of 10 years is relatively short as the data on the PAPI institutional index begins in Vietnam from 2011. The study also had not examine the causal relationship between economic growth and institutional yet. This is also one of the new research directions for further studies on this topic.

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Appendix

Institutional Index

The Qin index is calculated from the PAPI (Provincial Governance and Public Administration Performance Index) indexes initiated by the United Nations Development Program in Vietnam and the PCI (Provincial Competitiveness Index) by the Vietnam Chamber of Commerce and Industry. VCCI) with support from the United States Agency for International Development (USAID) in Vietnam. An exploratory factor analysis method was used to synthesize sub-indices into institutional aspects such as democracy, control of corruption, quality of policy and public administration/services (government efficiency). From there, calculate the composite index Qin in this study.

Northern provinces of Vietnam

The northern provinces include 25 provinces: Lao Cai, Yen Bai, Dien Bien, Hoa Binh, Lai Chau, Son La; Ha Giang, Cao Bang, Bac Kan, Lang Son, Tuyen Quang, Thai Nguyen, Phu Tho, Bac Giang, Quang Ninh provinces; Bac Ninh, Ha Nam, Hanoi, Hai Duong, Hai Phong, Hung Yen, Nam Dinh, Ninh Binh, Thai Binh, Vinh Phuc provinces. Because Lai Chau, Bac Kan, Cao Bang, and Dien Bien provinces have FDI in years of 0, it should be removed from the sample, so the official sample is 21 provinces.

The provinces in the key economic zones as prescribed by the Ministry of Planning and Investment of Vietnam: Bac Ninh, Hanoi, Hai Duong, Hai Phong, Hung Yen, Quang Ninh, Vinh Phuc.