THE IMPACT OF FOREIGN DIRECT INVESTMENT ON URBANIZATION IN VIETNAM

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Abstract

This study uses statistical data of 63 provinces and cities in Vietnam for the period 2011-2018 and employs the ordinary least square method (OLS) to investigate empirically the impact of foreign direct investment on urbanization in Vietnam. The study finds that foreign direct investment has played a significantly positive role in the level of Vietnam's urbanization. Apart from research results, the study proposes practical and feasible solutions for promoting positive impacts and restraining negative ones of foreign direct investment on Vietnam's urbanization.

Keywords: *Foreign direct investment, urbanization, Ordinary least squares, Vietnam*

1. Introduction

Foreign direct investment (FDI) brings into a host country a package of capital, technology and other specific intangible assets from the firm's investing process, and therefore, it is expected that FDI will play a positive role in the economic development process of a host country. According to the data on the urbanization rate calculated by permanent population, Vietnam has experienced a significantly increase in the level of urbanization that increased from 13,1 percent in 1955 to 37,7 percent in 2020 with an urban population growth rate of 3,4 percent on average (United Nations, 2020). Nevertheless, Vietnam's urbanization level still relatively lowers than developed countries' one. Therefore, as far as socio-economic development in Vietnam is concerned, accelerating the transfer of surplus labour from rural areas to cities and increasing the urbanization rate are still the important tasks in long run.

According to the data from General Statistics Office of Vietnam, foreign direct investment plays an important role in the Vietnam economy when the FDI's contribution to GDP increased from 10,3 percent in 1998 to 19,6 percent in 2017 and the recorded investment proportion of the FDI sector in GDP fluctuated around 23.5% during the period from 2015 to 2018 that has reinforcing the important role of FDI in developing and maintaining economic conditions in Vietnam (General Statistics Office of Vietnam, 2019).

While FDI has significantly contributed to Vietnam's economic development, has it also contributed to the level of urbanization in Vietnam? In recent years, there have been a number of studies which focus on assessing the attraction and the implementation of FDI inflows or analysing its impact on aspects of socio-economic development. With theoretical and methodological bases from published studies, a number of domestic studies indicate two transmission channels through which FDI has been improving the efficiency of the host country's development activities are technology transfer to and technology spillover effects on domestic enterprises. However, researching the impact of FDI still has some deficiencies in methodology and practical issues. There are no domestic studies using quantitative data analysis methods to invesigate the impact of FDI on urbanization in Vietnam, no studies with comprehensive approaches of impacts of FDI on the process of urban development as well as studies on the scope of metropolitan areas and coastal urban ones. Accordingly, the research team proposes the research topic "The impact of foreign direct investment on urbanization in Vietnam" with the aim of specifying the impact of FDI on the urbanization process in Vietnam and offering reasonable solutions to Vietnam's urbanization strategy. This study will answer some following main questions: Does FDI have an impact on urbanization in Vietnam? Does FDI have a positive or negative impact on the urbanization process in Vietnam? Which solutions promote the positive impacts and limit the negative ones of FDI on urbanization in Vietnam?

2. Literature Reviews

In abroad, some studies have affirmed positive relationship between foreign direct investment and urbanization. For example, Tam Bang Vu, Byron Gangnes & Ilan Noy (2008) indicated that FDI has played a positive and statistically significant role in economic growth, and through interactions between FDIs inflows and labour resources, the impact of FDI has the huge difference among economic sectors, in which are mostly concentrated on secondary sector. When Yan Wu and Chunlai Chen (2016) used a city level panel data containing 262 cities for the period 2004-2012, they found that FDI on average has played a significantly positive role in China's urbanization. However, the impact of FDI on urbanization contribute greatly to the difference of urbanization rates between coastal and inland regions in China. The study found that FDI has a positive and significant impact on urbanization in the coastal region but has no impact on urbanization in the inland region. Concerning the data of 262 China's cities during the period from 2004 to 2013, in the

following study, Yan Wu and Chunlai Chen (2017) also found that FDI has a positive and significant impact on urbanization in the coastal region but has no significant impact on urbanization in the inland region. These studies indicate that FDI inflows not only concentrate in coastal regions but will also tend to contribute to industrial and service sectors. Moreover, concerning the impact of FDI on urbanization in African countries, Carl Grekou and Ferdinand Owoundi (2020) found that urbanization appears as a corollary to economic development to which FDI inflows contribute significantly to developing countries, especially in Africa.

In Vietnam, the impact of foreign direct investment on urban development in Vietnam has been paid attention in the last few years but with limitations. For example, when building theoretical framework for the impact of FDI on urbanization in PhD thesis, Nguyen Thi Hoa (2014) only focused on proposing viewpoints, orientations, and solutions to promote positive influences and limit negative effects on FDI on urbanization on a sustainable manner in Da Nang towards 2025. Another example is the Tran Kim Cuong (2015) 's research paper on the relationship between foreign direct investment and economic growth, the study based on the data from national level of 44 countries which are mostly developing countries, especially the countries received the most FDI including Vietnam, for the period of 1995-2012 to estimate the impact of FDI on economic growth through the GMM estimation method, and to compare with the result of the OLS regression method. The result shows that urbanization plays an important role in promoting the spread of FDI in the host country, leading to an increase the number of urban areas with highly qualified human resources and large consumer demands , and attracting the investment from FDI enterprises.

In contrast, some negative impacts of foreign investment on urbanization are shown in some recent works such as the study of Cao et al (2015), when analysing the relationship between FDI and the level of urbanization in the coastal areas in Jiangsu and Guangdong provinces of China, study showed that FDI has a negative impact on the GDP growth in urban areas, the high level of correlation is not recorded in Jiangsu while recorded the negative correlation in Guangdong. Additional, A study by Wanshu Wu and Kai Zhao (2017), concerning the effects between FDI and urbanization, showed that FDI is an exogenous force for the new process of urbanization and this process strongly supports attracting foreign capital inflows. However, this study also showed that concentrating FDIs inflows on surrounding areas would restrain the process of local urbanization and increasing urbanization in surroundings would restrict FDIs inflows in the local area.

3. Method

Research methods

The study uses descriptive statistics and quantitative research to investigate the impact of FDI on urbanization. Descriptive statistics are used to describe the basic features

of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, descriptive statistics form the basis of virtually every quantitative analysis of data. With the help of the quantitative research combined with panel data models, it helps to design quantitative observations of variables, analyse quantitative data, and explain the relationships between variables by quantitative relationships.

Data collection methods

The data in this study are cited from publications of the General Statistics Office of Vietnam such as Socio-economic statistical data of 63 provinces and cities in 2015-2018 periods, Statistical yearbook from 2011-2018, annual reports on economic development, ... Moreover, these data are also in the process of collecting additional information, collating approximate figures, and supplementing missing ones from World Bank reports.

Methods of data processing

The dependent variable is the urbanization rate, the ratio of urban population to their total local population, can reflect the changes of urban population what are affected by economic factors, so it is a more accurate indicator of the urbanization rate in Vietnam. To investigate the impact on FDI on urbanization, we use the ratio of foreign direct investment to Gross regional domestic product (*FDI/GRDP*) that the calculation of this ratio has several steps. Firstly, the annual US dollar value of FDI inflows was converted into Vietnamese dong value by using the current exchange rate. Next, the ratio of foreign direct investment to gross regional domestic product of each city is calculated. Therefore, we expect that the variable of the ratio of FDI to GRDP (FDI/GRDP) to have a positive impact on urbanization.

Moreover, based on the collected data, we pay attention to the following variables which are expected to have impacts on urbanization. The economic structure of a city has an important impact on the level of urbanization, so we use the share of primary sector in GRDP (*PS/GRDP*) to control for the economic structure of a city. It is expected that the higher share of the primary sector in GRDP, the lower the urbanization level of a city will be. In addition, the value of per capita GDP (*PGDP*) also reflect the level of economic development and we expect the variable of per capita GDP to have a positive impact on urbanization. The value of assets and long-term investment (*FAI*) is concerned. In fact, FDI in public utilities and transportation infrastructure is essential for the urban development and the flow of labours, goods and information between urban and rural areas to facilitate the development of urbanization. Moreover, the size of population or the total population (*POP*) in each city could also reflect its urban development in the future therefore have to add to model.

Model specification

In overall, there is no standard theoretical framework to lead the empirical studies on the relationship between FDI and urbanization at national level in Vietnam, so we establish

an experimental model based on Yan Wu & Chulai Chen 's empirical model which estimates the impact of FDI on urbanization in China. Therefore, we estimate the impact of FDI on urbanization in Vietnam by using the following experimental model:

$$UR_{it} = \beta_0 + \beta_1*UR_{it-1} + \beta_2*FDI/GRDP_{it-1} + \beta_3*PS/GRDP_{it} + \beta_4*lnPGDP_{it} + \beta_5*lnFAI_{it} \qquad + \beta_6*lnPOP_{it} + u_{it}$$

Table 1: the explanation about variables in our experimental model

Biến	Explanation
UR_{it}	The urbanization rate at city i and in year t
UR_{it-1}	The urbanization rate at city i and in year $t-1$
$FDI/GRDP_{it-1}$	The ratio of FDI to GRDP at city i and in year $t-1$
$PS/GRDP_{it}$	The share of primary sector in GRDP at city i and in tear t
$lnPGDP_{it}$	Natural logarithm of per capita GDP of city i and in year t
$lnFAI_{it}$	Natural logarithm of the value of assets and long-term investment of city i and in year t
$lnPOP_{it}$	Natural logarithm of total population of city i and in year t
u_{it}	Random disturbance term

Source: Author team

When establishing the experimental model, we consider the major aspects that based on assumptions in the empirical model of Yan Wu & Chulai Chen (2016). They explained about their variables that past urbanization influences the present urbanization process because of inertia (Zang and Wan, 2013) and FDI has an impact on urbanization on the assumption that there will be a time lag before FDI works.

In this study, we use the method of estimation of regression coefficients that is the ordinary least squares method (OLS) to investigate the impact of FDI on urbanization in Vietnam. In this model specification, the variable of our interest is *FDI/GRDP*. If the coefficient of β_2 is positive and statistically significant, then FDI has contributed to increasing urbanization in Vietnam. In contrast, if it is negative and statistically significant, the FDI has contributed to reducing urbanization in Vietnam.

4. Results

Descriptive statistics of the variables in the model

Table 2: Descriptive statistics of the variables

	N	Min	Max	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
UR	504	.0976	.8780	.278294	.0076138	.1709284	1.754	.109	2.798	.217
FDI/GRDP	502	.0000	.8540	.050018	.0039785	.0891397	4.038	.109	22.474	.218
PS/GRDP	500	.0031	.5604	.243407	.0058023	.1297433	.065	.109	-.759	.218
LnPGDP	500	-.3546	5.9705	3.612861	.0250400	.5599122	.472	.109	7.171	.218
LnFAI	504	7.5055	15.1559	10.465337	.0596197	1.3384582	.847	.109	1.126	.217
LnPOP	504	5.6924	9.0594	7.079325	.0247088	.5547106	.795	.109	2.160	.217
Valid N	498									

Regression results and explanations

After completed the estimation of regression coefficients, the regression results of the specified model are reported in Table 3.

Table 3: Estimation of regression coefficients in the model

Depandent Variable: UR
Method: Least Squares
Date: 04/06/21   Time: 09:04
Sample (adjusted): 1/02/2011 3/04/2018
Included observations: 497 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-0.487740	2.251349	-0.216643	0.8286
UR(-1)	-0.006170	0.044902	-0.137409	0.8908
FDI/GRDP(-1)	1.771967	0.814185	2.176369	0.0300
PS/GRDP	-0.804975	1.350008	-0.596274	0.5513
LnPGDP	0.454774	0.303299	1.499424	0.1344
LnFAI	0.001918	0.129768	0.014777	0.9882
LnPOP	-0.094867	0.245718	0.386081	0.6996

R-squared	0.021938	Mean dependent var	0.415736
Adjusted R-squared	0.009962	S. D. dependent var	2.960312
S.E. of regression	2.945530	Akaike info criterion	5.012439
Sum Squared resid	4251.312	Schwarz criterion	5.071715
Log likelihood	-1238.591	Hannan-Quinn criter.	5.035705
F-statistic	1.821777	Durbin-Watson stat	2.035958
Prob(F-statistic)	0.091089		

The results show that there is only a variable of ***FDI/GRDP(-1)*** which is statistically significant (***p_value*** = 0.0300 <0.05) and there is enough evidence to remove the variables including **UR(-1)**, **PS/GRDP**, **ln(PGDP)**, **ln(FAI)**, and **ln(POP)** because they have not statistical significance. The reduced model has the following form:

$$UR_{it} = \beta_0 + \beta_1 * FDI/GRDP_{it-1} + u_{it}$$

Table 4: Estimation of regression coefficients in the reduced model

Depandent Variable: UR
Method: Least Squares
Date: 04/06/21   Time: 09:21
Sample (adjusted): 1/02/2011 3/04/2018
Included observations: 501 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.3000510	0.140592	2.137463	0.0330
FDI/GRDP(-1)	1.835808	0.809101	20268947	0.0237
R-squared	0.010212	Mean dependent var		0.415212
Adjusted R-squared	0.008228	S. D. dependent var		20948551
S.E. of regression	20935395	Akaike info criterion		4.996227
Sum Squared resid	4302.587	Schwarz criterion		5.013059
Log likelihood	-1249.555	Hannan-Quinn criter.		5.002831
F-statistic	5.148121	Durbin-Watson stat		2.008094
Prob(F-statistic)	0.023698			

We now consider the regression results based on the reduced model. The results show that ***p_value*** of the variable of the ratio of FDI to GRDP (*FDI/GRDP*) is lower than 0.05, indicates that this variable is statistically significant; and R_squared coefficient has not significant difference between the specified model and the reduced model, so the model could be accepted after reducing the variables which are not statistically significant. In addition, the regression results show that the regression coefficient of *FDI/GRDP* has positive value, implying that the higher level of FDI presence in a city, the higher the urbanization level of that city will be. This finding provides strong evidence that FDI has played a positive role in promoting the development of urbanization in Vietnam.

5. Discussion and Conclusion

Discussions of the results

When compared with the research results of Yan Wu & Chunlai Chen (2016), after the authors used the research data of 262 Chinese cities in the period 2004-2012, their results showed that FDI has a positive impact on promoting urbanization both in the overall data of 262 cities as well as in the data of coastal areas. The research results can be explained by reasons that the coastal area is the main destination for FDI inflows, attracting about 80% of

total FDI into China (Yan Wu and Chunlai Chen, 2016); at the same time, FDI also plays a significant role in the process of job creation, income enhancement, and economic development, thereby facilitating changes in the regional economic structure and attracting a large number of labours to urban coastal areas that is the leading force in increasing urban population. With the similarity in geographical location when 28 out of 63 provinces and cities of Vietnam are in coastal areas within 19 coastal economic zones (as of 2020), investment capital inflows, especially foreign investment, will play a crucial role in the goal of forming dynamic economic zones and promoting multi-sectoral development in Vietnam. The above explanation reinforces the expectation as well as the analysis results of the author team that FDI will have a positive impact on urbanization in Vietnam, increasing the contribution of FDI will increase the level of urbanization in the localities received this capital.

Recommendations

Throughout estimating the impact of FDI on urbanization, the study proposes two groups of solutions to promote the positive effects and limit the negative effects of foreign direct investment on urbanization in Vietnam.

(i) The group of solutions promote the positive effects of FDI on urbanization:

Firstly, it is necessary to prioritize the careful selection of FDI inflows that based on types of sectors to be appropriate to the requirements of socio-economic development in Vietnam in each period, and to limit oversea investments to domestic enterprises' strong fields.

Secondly, when the country's internal resources are still limited, it is important to promote the attraction of FDI destinations where FDI plays a leading role in contributing to economic development through creating an open business environment, building an attractive investment mechanism, and implementing investment support activities in duration of project planning as well as the project implementation.

(ii) The group of solutions limits the negative effects of FDI on urbanization:

Firstly, to minimize the environmental consequences caused by the development and urbanization process, authorities must carefully inspect FDI projects, tighten up licensing conditions, and careful select investment projects with the commitment on environment regulations.

Secondary, to limit the potential risk of becoming a destination for outdated technologies, it is necessary to have legally binding agreements and inspection activities on the process of transferring machinery, equipment, and operating technology and manufacturing that must take steps to ensure the quality of technology, properly assess the effects of these technologies on other economic sectors, carefully consider investment projects using technology in lines, and promulgate policies to encourage enterprises to innovate technology.

Thirdly, to limit inequality in front of the impacts of FDI on the economic structure in urban areas, it is necessary to appraise and evaluate FDI projects on the basis of object judgments, approve FDI projects in accordance with development context , and also implement support activities to improve the capacity of both labours and domestic firms by creating learning environment for labours and establishing mechanisms to support business activities, thereby increasing adaptability as well as enhancing competitiveness.

Conclusion

The main purpose of the study is to investigate the impact of FDI on urbanization in Vietnam. The study is based on the theoretical and methodological basis to identify the aspects of urbanization, to estimate effects of FDI on the socio-economic development that have mentioned in other studies. In this study, we consider research models that investigate the impact of FDI on urbanization in the world to reinforce theoretical foundations and to establish the empirical model that is appropriate to the socio-economic conditions in Vietnam. Based on previous studies, the study establishes the empirical model with a panel dataset including data from 63 provinces and cities of Vietnam during the period from 2011 to 2018 and uses OLS regression method to investigate empirically the impact of FDI on urbanization in Vietnam. Besides, the study presents the socio-economic situation of Vietnam from 2011 to 2018 as well as observable positive and negative effects of FDI on urbanization. The results of the study on the relationship between FDI and urbanization show that FDI has a positive impact on the process of increasing urbanization in Vietnam. The study creates a premise for attracting more FDI inflows to Vietnam in order to develop and maintain socio-economic conditions of the city. At the same time, the study proposes several solutions for urban authorities to increase the positive effects and limit the negative effects of FDI on urbanization in Vietnam.

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