

AN ANALYSIS OF FACTORS AFFECTING ECONOMIC OUTCOMES OF INVESTMENT AND DEVELOPMENT PROJECTS FOR LAND TRANSPORTATION INFRASTRUCTURE EMPIRICAL FINDINGS FROM THE SURVEY IN VIETNAM

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Abstract

This study was conducted to determine the factors that affect the economic outcome by investment and development projects on land traffic infrastructure using state budget funds in Vietnam and evaluate the extent of such impact. Research data were collected from the survey of 250 officials and employees working in related fields ranging from State management agencies to contractors, and construction and supervision bodies. The findings will enable the researcher to obtain more objective perspectives by those directly involved in the process of implementing investment and development of road traffic infrastructure and using this budget, thereby remaining a scientific basis upon which recommendations can be based to contribute to further improve these economical outcomes.

Keywords: Investment and development, infrastructure, Vietnam, land transportation, land transportation infrastructure

INTRODUCTION

After three decades of reform, Vietnam's economy has witnessed several significant changes: the change in economic structure towards increasing the proportion of the service industry; the industrialization in agricultural sector, relatively dynamic development in science and technology, an increase of 6.68% in economic growth in 2015 compared to the previous year [Source: GSO]. The strong economic development has resulted in more in-depth and various

requirements for the infrastructure, both qualitatively and quantitatively. One of the most important aspects when it comes to infrastructure systems is the transportation system.

To meet these requirements, the Transport sector has envisaged development policies and strategies by 2020 and vision by 2030. Continued efforts have been made in the implementation of development goals for transport infrastructure in terms of quantity and quality improvement of transportation projects across the nation. Specifically, the Ministry of Transport has focused on addressing issues such as restructuring, equalization of State-owned enterprises, reforming administrative procedures to improve business performance, create favorable mechanisms to appeal foreign investment flows into the transportation sector. The results obtained from these efforts are the appearance of numerous key transport projects, creating platforms and no few contributions to the development of other sectors. For instance, by the end of 2015, the total road length was about 309,969 km nationwide [Source: Vietnam Road Administration], around 114,146 kilometers of which is high-speed highway.

However, given that investment and development characteristics for road transportation in particular and other sectors in general, the capital demand is often very large, with long time for capital recovery, and a large proportion of public construction. In addition, these projects also face inevitable risks; therefore, the mobilization and use of capital remain a matter of concern not only for policy makers but also of the researchers in this field.

Because of these reasons, it is necessary, both theoretically and empirically, to study factors that affect the economic achievements of investment and development projects for road transport.

In Vietnam, funding from foreign direct investment or private investment is such a modest amount that the majority of funds for road infrastructure investment and development are from the state budget. Therefore, within the scope of the study, the author only considers investments in infrastructure development using state budget funds and analyzes the factors affecting economic results of the investment projects that use state-budgeted capital for road infrastructure.

LITERATURE REVIEW

Investment and development have become a matter of concern for not only researchers but also policy-makers. The capital used in investment activities varies from state budget, official development assistance, business capital to foreign direct investment, and so forth. Investment for development is implemented in different sectors, each of which has its own characteristics but shares the most basic features of investment for development. The investment activities for

development can be project-based, work item - based or in other methods (Tu Quang Phuong, Pham Van Hung, 2013)

State budget capital - one of the most important sources of capital for investment and development activities when it comes to public and transport infrastructure investment has become topics of studies for scientists. Therefore, there is a need to have a consistent and comprehensive theory to have a possibly best accurate and general insight of the state budget so that it can be managed as efficiently as possible. In fact, V.O. Key Jr. (1940) recognized the need for a theory of the state budget. In his research, he pointed out the problem when there is no theory for budget and analyzed its importance in macroeconomic management as well as in increasing allocative efficiency of the government budget. The author also pointed out that the most important regard in considering the state budget is the allocation of expenditure for the various purposes in a way that results obtained are the most optimal. In 1930s, Mabel L. W. was also aware of the importance of state budget expenditure. In his study, an analysis of the allocation of state budget and principle for budget spending were made. Malbel synthesized the theories related to public expenditure, and on this basis, developed and built a new theory to guide the spending allocation of the budget. Theories related to state budget have made great strides over time from work item-based budget management practices to task – based budget management practices; from program-based management to output-based budget management practices. Moreover, each budget management method has specific advantages and disadvantages, but it shares a point in common: all of these budget management practices are increasingly better over time through the process of different management practices in different countries. Martin et. al. (2010) compared and showed very clearly the development of budget-related theories. The researcher has confirmed the advantages of output-based budget management method, and this method answered the question often posed by budget managers: How to make decisions to allocate the funds for one activity instead of allocating it to another.

One of important budget expenditures using State budget was items of fundamental construction investment. For any country, the basic construction investment has a very important role in their economic development strategy, contributing to creating conditions for economic growth, jobs, and solving social problems. The study of public investment has also proved that inefficiencies in public investment management will lead to bad debts. Therefore, policy makers and researchers have had studies on the status of public investment, achievements and drawbacks so that they will be able to give directions and solutions for the best management of the portfolio. The state, hence, has an important role in the management of investment portfolios. Relationship between public investment, economic growth and social

impacts has been studied by Benedict Clements et.al. (2003). In this study, the researchers have made an overview of theories related to the research problem, presented a model of economic growth, used the method of data qualification and so have demonstrated the relationship between public investment and economic growth using quantitative research methods with the data collected in some low-income countries such as Zambia, Guinea, Vietnam, Nepal, Ghana. Also using public investment theories and methods of collecting secondary data, quantitative models in the processing of the data, Edward Anderson et al (2006) considered the role of the investment that use the state budget as a means of poverty reduction. He demonstrated the social role of investment funds using the state budget through the indicators, which reflect the efficiency of public investment in growth, production and social balance. In addition, in the study the authors proposed a method to appraise projects using public investment and allocate optimally the budget between regions in order to achieve social objectives.

For the management of investment projects, studies of Peter E.D (2002) have pointed out that it is important to build a sample project for quality system of cost management to determine the quality of construction projects. In addition, the implementation of fundamental investment projects from construction budget sources, the activities of the project should be divided into the areas of work, done by the different sectors and carried out separately. In the management process, the classification of the project types and modes of operation have significant impacts on the cost of the whole project (P.E.D. Love et al., 1999). In view of PED Love (2002), the role of the parties in the management of capital for fundamental construction investment should be reviewed. Specifically, with a given construction investment projects, it is important to give suitable interpretations on the issue of management cost of investment activities.

By approaching towards State management experience in the infrastructure construction in different countries by state budget, Bernard Myers & Thomas Laursen (2008) summarized the experience of state management of investment and construction of infrastructure in the EU member states. Data for the study were collected from 2000 to the end of 2006, mainly focusing on an examination of management experience in the investment portfolio in the UK and some countries with developed economies. During the research, the EU countries have the large public debt across the world. This would be a lesson learned for performance management of basic investment and construction of the State budget in Vietnam, which could have been avoided partly a strong increase in public debt and inability to control.

Meanwhile, in Vietnam when it comes to the field of infrastructure investment and development for road traffic, Pham Thi Tuyet (2015) had a different approach by mentioning

transport development in Vietnam for the previous period and recommending the capital need in the development of road traffic in the coming period (projected investment capital needs by 2020). She also pointed out that the investment capital for transport infrastructure currently comes mainly from three main sources: foreign loans, government bonds and state budget. Shortcomings and limitations shown by her proposed a number of recommendations aimed at developing road traffic system in Vietnam.

In short, investment and development play an important role in the process of national socio-economic development. Investment in infrastructure development of road traffic contributes to high quality infrastructure, which in turn leads to many advantages for attracting capital, the foundation for the circulation of goods, in the end the overall economic development of not only the local but also the state. The reality has proved the importance of investment in infrastructure development of road traffic; the theoretical research has been done; however, those studies merely generally research the transport sector or investment for development in other sectors. Therefore, the implementation of this study: “Analysis of factors affecting the economic achievement of the investment projects in infrastructure development of road traffic using the state budget” is needed. Based on study findings, the author would propose recommendations to further improve the results achieved and limit the negative aspects of the investment and development of road infrastructure using budget funds in terms of economic efficiency.

RESEARCH METHODOLOGY

The data for analysis in the study were collected from a survey of 250 state managers, project managers, building contractors, construction units directly implementing investment projects for in infrastructure development of road traffic using the state budget to review their assessment of the factors affecting the economic outcomes of this activity.

250 management officials at all levels are selected based on the convenience sampling method by the researcher. However, to ensure the representative and generalization of the questionnaire as well as the results of the study, subjects were selected based on the following criteria: The selected management officials interviewed are working in the state management, agencies and enterprises, the project management, construction enterprises, the monitoring unit.

Those directly related to investment activities in the development of land transportation infrastructure using the state budget. In particular, the specific number of samples selected by the researcher as follows:

50 officials of the State administration under the Ministry of Finance, Ministry of Construction, Ministry of Planning and Investigation, and state management agencies relating to investment in the development of land transportation infrastructure.

50 officials belong to construction institutions in Vinh Phuc province, Ba Ria Vung Tau province, Hanoi capital...

50 officials are supervisors of investment projects in the development of land transportation infrastructure throughout the country.

50 officials belong to the construction unit of investment projects in the development of land transportation infrastructure throughout the country.

50 officials are working in the management unit of investment projects in the development of land transportation infrastructure throughout the country.

Inheriting the previous research by the authors Pham Van Hung, Tu Quang Phuong (2013), V. O. Key Jr. (1940), P.E.D Love (2002), Edward Anderson et. al. (2006), the current researcher conducts a study model that examines the impact of these factors on the economic achievement of investment projects in infrastructure development of road traffic using the state budget as follows:

General economic policy (FAC1): A measurement for the general economic policy for the whole country; these policies will have an impact on the economic achievement of the investment project for infrastructure development of road traffic using the state budget through its focus level for this investment sector, with or without a priority for the sector.

Economic structure (FAC2): The scale represents state authorities' management in macroeconomic issues; state policies of economic governance will affect the performance of investment activities in infrastructure development of road traffic using the state budget capital, thereby affecting the results of economic output of such projects.

States' resource allocation mechanism (FAC3): The research project under consideration are the investment projects in infrastructure development of road traffic using the state budget; therefore, it is directly affected and governed by the mechanism of resource allocation by the state for each sector.

Local people's support for investment projects in infrastructure development of road traffic using the State budget capital (FAC4): These projects often involve compensation for site clearance; therefore, local people's support will make the implementation of projects faster, and economically better.

Qualifications of State's managers in investments in infrastructure development of road traffic (FAC5): If the State's managers are highly qualified and professional, relevant tasks will be resolved quickly, efficiently, thereby positively affecting the economic output of such projects.

Management capacity of the investor (FAC6): Good capacity management, both economically and technically, of investors will have a positive impact on the achievements of the investment project-developing infrastructure of road traffic using the state budget.

Consultancy and supervision capacity (FAC7): Good capacity to consult and monitor both in terms of expertise and problem-solving skills will help the project achieve quality requirements as well as the progress of the work, so there will be a high likelihood to achieve economic results and avoid the emergence of funds resulting from the slow progress of the project or other costs incurred related to the project quality.

Construction experience of the contractor (FAC8): The more experienced contractors are in construction of works in the field of infrastructure of road traffic, the higher the likelihood is to achieve the economic results of the project and vice versa.

Investors' ability to economically use resources (FAC9): Reasonable and scientific usage of resources will have a positive impact on the economic outputs for projects.

Besides, there exist other impact factors like technical capability of the investor, the examination unit's capacity of investment projects in infrastructure development of road traffic (FAC10).

The author uses the Likert scale from 1 to 5 to collect evaluation from relevant officers on the level of impact of these factors on economic outputs of investment project to develop infrastructure of road traffic using the state budget.

With the data collected, the researcher cleansed and processed data to examine the impact of these factors on the economic results terms of the investment project of infrastructure development of road traffic using the state budget. The multivariate regression model was selected for this study; also, the data analysis employed the help of SPSS 20.0

ANALYSIS AND FINDINGS

With the data collected, the author first examined the reliability of the scales, then the author tested the suitability of the model study. The test findings for the research model as follows:

Table 1: Results of the model suitability

Model	Change Statistics									
	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.870	.756	.746	.400	.756	74.200	10	239	.000	1.850

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	118.965	10	11.897	74.200	.000
	Residual	38.319	239	.160		
	Total	157.284	249			

The results showed that the model fits the study, the level of the variable is appropriate, the defects of the model is within the allowance level.

Then, the author performed a regression for the study model with the dependent variable being the economic output of investment projects in infrastructure development of road traffic using State budget.

Table 2: Results of regression models

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	3.308	.025			130.626	.000
	FAC1	.489	.025	.616		19.278	.000
	FAC2	-.353	.025	-.444		-13.899	.000
	FAC3	-.263	.025	-.330		-10.347	.000
	FAC4	.077	.025	.097		3.052	.003
	FAC5	.155	.025	.195		6.121	.000
	FAC6	-.024	.025	-.030		-.937	.350
	FAC7	.010	.025	.013		.403	.687
	FAC8	-.067	.025	-.084		-2.645	.009
	FAC9	.093	.025	.117		3.671	.000
	FAC10	-.034	.025	-.043		-1.350	.178

The regressed estimation shows that the variables analyzed are statistically significant. Among the factors, some affects positively and some negatively on economic results of the investment projects in infrastructure development of road transport using State budget. The positive factors are State's resource allocation mechanism, local people's support for investment projects in infrastructure development of road traffic using the State budget capital, investors' scientific and technological level, etc. On the other hand, there are factors that negatively impact economic

results for investment projects in road infrastructure development using state budget like verification capabilities, experience of investor, etc.

Among the factors that affect the economic results of the investment projects in infrastructure development of road traffic using the state budget, the mechanism of state's resource allocation, capacity to bidding are the most influential on the results achieved; therefore, there is a great need to have the appropriate recommendations to help further improve the results economic of the investments in infrastructure development of road traffic using state budget. This capital is influenced greatly by the state's management mechanism.

RECOMMENDATIONS

To further improve the economic results of the investment projects in infrastructure development of road traffic using state budget in Vietnam, based on study results, the author would like to give a number of recommendations as follows:

First, there is a need to take measures to improve the quality of training as well as uplifting voluntary action and qualification of state managerial staff working in the field of investment in infrastructure development of Vietnam.

Second, improve the quality of technical equipment as well as labor quality in machinery operation by the construction units who implement projects.

Third, it is important to improve the quality of the team bidding for the project, ensuring that procurement activities are carried out properly and ensure contractors selected are of high quality.

Fourth, given the allocation of investment resources of the State managerial agencies for investment activities in infrastructure development of road traffic using the state budget, there should be sound consultation with State's management agencies when allocating resources to projects, prioritizing the key projects and give proper distribution for the project.

In addition, it is necessary to carry out people's mobilization well for those whose land is repossessed when building investment projects in infrastructure development of road traffic because without land repossession, it will be impossible to carry out projects and highly likely that the project is behind schedule.

It is required to have care and close observation of the fluctuations of the economy so that right solutions can fulfill specific requirements of each stage.

This study was conducted to analyze the factors affecting the results in terms of economics in the investment projects of the development of land transportation infrastructure in Vietnam; however, the result of investment projects of the development of land transportation infrastructure also shows the achieved results in terms of social and environmental factor. In

further research, the author will continue to have a comprehensive assessment about the factors affecting the achieved results in terms of economic, social and environmental consequences of the investment projects in the development of land transportation infrastructure in Vietnam.

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