

# GOVERNMENT FINANCIAL SUPPORT FOR PPP PROJECTS DEVELOPING TRANSPORT INFRASTRUCTURE IN VIETNAM

NGUYEN HONG THAI

*University of Transport and Communications, No 3 Cau Giay Street, Hanoi, Vietnam*

*Corresponding author's email: nhthai@utc.edu.vn; Tel: 0936 06 2526*

**Abstract:** *Financial feasibility of PPP projects is the top concern of the government. The reason is that if those projects are not feasible, private sector will not be interested in investing. This paper studies government incentives and financial support with different plans according to levels of financial risks of the project. The objective is to improve project revenue then attracting more private investment in transport infrastructure in Vietnam.*

**Keywords:** *PPP, infrastructure structures, financial support.*

Received: 02/11/2020

Accepted: 24/02/2021

Published online: 31/05/2021

## I. INTRODUCTION

Finance policies for PPP projects in constructing transport infrastructure in Vietnam are to ensure financial resources for the investment projects, maintain currency value and generate profit for investors [1-10]. Fundamental principles for these policies are to follow international, regional and national regulations, to ensure transparency and equality under the legal system for investors in accessing capital, credit and other financial support.

## II. LITERATURE REVIEW OF FACTORS AFFECTING SUCCESS OF PPP PROJECTS

A proper financial plan is very essential for the success of a PPP project. This importance is reflected in weightings of financial criteria assessing PPP project proposals. For instance, Hong Kong government uses three criteria, namely: finance, technique and operation planning for bidding assessment in its infrastructure projects. The weightings for these criteria are 65%, 20% and 15% respectively (Zhang, 2001). In the meanwhile, Zhang (2005) supposed that financial capability of franchisee can be measured in four dimensions: strong financial technique, favorable financial resource & low service cost, proper capital structure & ROI requirements of investors and competent risk managing capability. Findings from studies in finance of PPP are summarized in Table 1 below.

### Financial technique, tools and strategies

PPP projects for infrastructure construction are often massive, complex and demanding in capital; therefore, to invest in these projects needs innovative finance techniques. Financing projects is one of the methods. By this way, a project is considered as a separate legal liability and finance of the project is returned with monetary flow generated by the project itself (Merna & Dubey, 1998). PPP projects are generally financed with both equity (e.g. common stock) and debt (e.g. loans). A commonly followed philosophy is to use as much debt as the project cash flow allows to generate attractive returns for stockholders. In this regard, capital structure in most PPP projects is highly leveraged, with equity accounting for 10-30% of total project costs and debt financing accounting for the remaining 70-90% (Levy , 1996). Although higher debt may allow a higher rate of return for investors, too much debt can pose more risks to the project. Therefore, an appropriate structure of capital and debt is needed when financing a PPP project (Zhang, 2005).

*Table 1. Summary of studies on finance of PPP projects*

No	Authors	Type of PPP	Research scope	Major findings
1	Merna and Dubey (1998)	PPP	Unidentified	<ul style="list-style-type: none"> <li>Discuss definition of financial technique and how it is implemented in structuring finance package for infrastructure projects.</li> </ul>
2	Levy (1996)	BOT	International	<ul style="list-style-type: none"> <li>Have a comprehensive investigation in technical, constructing and financing skills needed to conduct BOT.</li> </ul>
3	Schaufelberger and Wipadapisutand (2003)	BOT	International	<ul style="list-style-type: none"> <li>Propose replacement finance strategies, consider project risks, project conditions and finance capability.</li> </ul>
4	Ye and Tiong (2000)	BOT	China	<ul style="list-style-type: none"> <li>Discuss the role of government in BOT projects.</li> </ul>
5	Zhang (2005)	PPP	Unidentified	<ul style="list-style-type: none"> <li>Develop methods to optimize capital structure and analyze finance capability</li> </ul>
6	Devapriya (2006)	PPP	International	<ul style="list-style-type: none"> <li>Study nature, form and unique management of debt and equity agreement in PPP projects.</li> </ul>

*Source: summarized from source 1, 2, 3*

From studies around the world on the factors affecting the success of PPP projects in general and of transport infrastructure in particular, the author systematize factors to analyze their impact on PPP projects developing transport infrastructure in current political - economic - social conditions of Vietnam (Table 2).

**Table 2.** Summary of factors affecting the success of PPP projects developing transport infrastructure

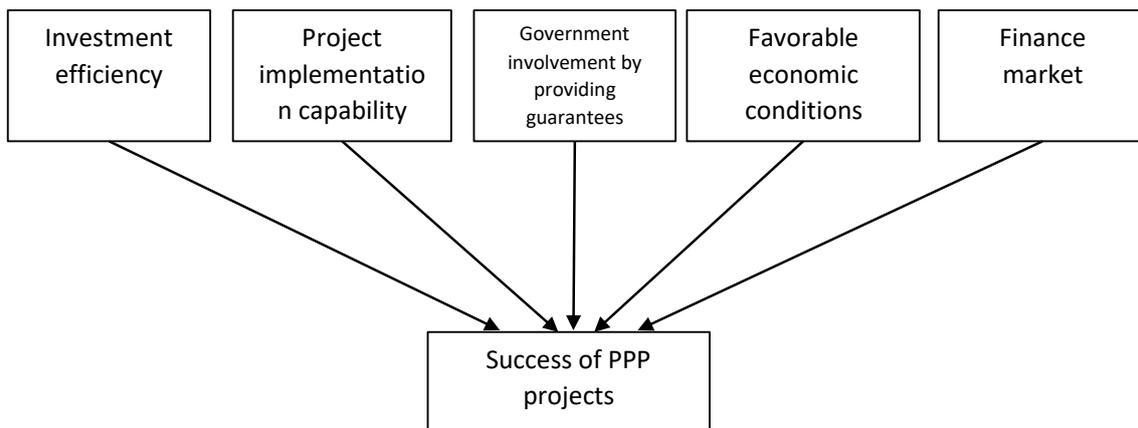
TT	Critical success factor (CSF)	Tác giả
1	Commitment/responsibility of public/private sectors	Stonehouse et al. (1996) NAO (2001b)
2	Thorough and realistic cost/benefit assessment	Brodie (1995) Hambros (1999) Qiao et al. (2001)
3	Growing financial market	Qiao et al. (2001) Akintoye et al. (2001b) Jefferies et al. (2002)
4	Political support	Zhang et al. (1998) Qiao et al. (2001)
5	Multi-benefit objectives	Grant (1996)
6	Government involvement by providing guarantees	Stonehouse et al. (1996) Zhang et al. (1998) Qiao et al. (2001)
7	Comprehensive economic policy	EIB (2000)
8	Stable macro-economic environment	Dailami and Klein (1997) Qiao et al. (2001)
9	Social support	Frilet (1997)

Source: Summarized by authors [4,5]

### III. RESEARCH DESIGN

#### 3.1 Research model

Literature review indicates that there are five constructs including: Investment efficiency, project implementation capability, government involvement by providing guarantees, favorable economic conditions, Finance market. From there, the author proposed a research model as below:



**Figure 1.** Proposed research model

### 3.2 Research survey

On the basis of the summary of factors affecting the success of the transport infrastructure development project (Table 2), the author used financial factors to design a questionnaire whose copies were sent to organizations/companies being involved in transport infrastructure development PPP projects. The questionnaire consists of three parts: part 1 includes questions about information of organizations and individuals surveyed; Part 2 includes questions about financial factors; Part 3 asks for opinions arising from the real experience of the surveyed.

Out of 60 survey forms distributed, 52 were collected, of which 50 are valid. Of these, 32 questionnaires are filled by public organizations (accounting for 26.23%) and 18 ones are from private organizations (accounting for 73.77%).

*Table 3. Types of organizations that surveyed respondents work for*

Sector	Role	Number	Percentage	Percentage accumulation
Public sector	Government authority	24	75	75
	Research institute	8	25	100
	Total	32	100	
Private sector	State-owned company	9	50	50
	Private company	6	33,3	83,3
	Credit organization & bank	3	16,7	100
	Total	18	100	

*Source: caculated by authors*

## IV. DATA ANALYSIS AND FINDINGS

The relative importance of 9 financial factors was determined by the questionnaire with a 5-point Likert scale for questions in the survey, in which: 1 - not important; 2 - less important; 3 – important; 4 - very important; 5 - extremely important.

Data was analyzed by SPSS statistical software. The statistical analyses performed include: descriptive analysis, reliability testing using Cronbach's alpha, analysis of single-factor variance and factor analysis.

### 4.1. Ranking finance factor of PPP projects of transport infrastructure according to level of importance

The analysis of collected data showed that the mean significance for the nine financial factors is different.

Ommitment and responsibility of public/private sectors are critical for successful PPP projects (mean value 3.60). All parties must commit to contribute the best resources (e.g. finance, people) to the project. Commitment should be established at all levels of management, not only within the project enterprise, but also within the parent company or steering committee.

Thorough and realistic cost/benefit assessment (average value 3.95). The public and private sectors have different views on project finance analysis (Hambros SG, 1999). The most important thing is the accuracy of the assessment. Determining both the costs and benefits of the project is based on forecasted information from 3 to 30 years, so the real costs and benefits may differ from the initial assessment. It is a question of how that discrepancy can be minimized during various project development stages. While most of these assessments are considered trade secrets, some forecasts may need to be subject to public scrutiny.

Growing financial market (average value 3.80): this is the factor indicating whether private contractors/investors have easy access to financial markets with lower financial costs. An accessible financial market is an incentive for the private sector to participate in PPP projects (Akintoye et al., 2001b). One approach is to force financial providers to participate in the project business or become an entity of the project. In the UK, a number of domestic and international banks have developed considerable expertise and experience in PPP projects. These include Bank of Scotland, ABN Amro, The Royal Bank of Scotland, DMG, Bank of America and Dresdner Kleinwort Benson. During project development, attention should be paid to the ability of the financial market to provide credit. This means that the financial market trend will contribute to either the promotion or inhibition of PPP projects.

Political support (mean value 3.93): Politics has a huge impact on the enactment and implementation of public policies. A positive political attitude towards the private sector involved in an infrastructure project will support the growth of PPP projects. On the contrary, inadequate political support creates risks for PPP projects.

**Table 4.** Mean significance of nine financial factors

Factors	Public sector		Private sector		Total			
	Mean	Rank	Mean	Rank	Mean	Rank	F	Sign.
Commitment/responsibility of public/private sectors	3.60	10	4.12	3	3.98	4	3.107	0.084
Thorough and realistic cost/benefit assessment	3.87	6	3.98	5	3.95	5	0.183	0.711
Growing financial market	3.80	7	4.12	4	4.04	3	1.681	0.200
Political support	3.93	3	3.43	11	3.56	11	2.115	0.152
Multi-benefit objectives	3.13	14	3.21	14	3.19	14	0.058	0.811
Government involvement by providing guarantees	2.87	18	3.26	12	3.16	16	0.779	0.381
Comprehensive economic policy	3.07	15	3.24	13	3.19	13	0.401	0.529
Stable macro-economic environment	3.27	13	3.17	15	3.19	15	0.100	0.753
Social support	3.07	16	2.71	18	2.81	18	0.774	0.383

*Source: calculated by authors*

Multi-benefit objectives (mean value 3.13): In order to develop a successful PPP/PFI project, all stakeholders should agree on multiple-benefit goals. To ensure long-term cooperation, PPP partners must understand and respect each other through the goals of each party. Typically, public sector goals involve reducing financial constraints, reducing public investment, providing efficiently public services, transferring risk, and achieving VFM (i.e. financial efficiency of PPP projects compared to traditional investment forms). The goals of the private sector are to generate profits and to penetrate the market; while the goal of the community is to receive better services at a reasonable cost.

Government involvement by providing guarantees (mean value 3.16): The government provides guarantees for PPP projects in various ways such as loan guarantees, minimum revenue guarantees, corporate income tax incentives, support to mitigate exchange rate risk and so on.

Comprehensive economic policy (mean values 3.17): A stable macroeconomic environment and comprehensive economic policies will greatly reduce risks for private investors. The government can help create and maintain a stable economic environment by promoting economic policies to ensure stability of exchange rates, interest rates and so on. Besides, appropriate macroeconomic policies have influence on confidence in exchange rates and confidence in currency convertibility, which is essential to attracting foreign investors (Dailami and Klein, 1997).

Social support (mean 3.07) based on public acceptance of services provided by the private sector. Issues related to this factor need to be addressed at an early stage in project development. The public sector needs to ensure services are provided at a reasonable price, whether provided by the public or private sector.

## V. SOLUTIONS AND RECOMMENDATION

### 5.1. Solutions

*Table 5. State funds support to increase the feasibility of PPP projects*

Country	State support fund
Korea	<ul style="list-style-type: none"> <li>- VGF is applied but there is no VGF fund. Depending on the field, it can account for up to 30% (road, port), 50% (railway) of the total investment.</li> <li>- The government of Korea assigns the specialized ministries to guide the ceiling of the State capital contribution in the construction and clearance phase.</li> <li>- The initial period, the State capital is allocated to support construction capital and payment to investors in the operational phase. This is called BLT contract, referring Build – Lease – Transfer, introduced by Korean government at the end of 2004. BLT is a variation of BOT in which government also concedes an entity (i.e. a company) to invest in building the infrastructure. The entity then leases the infrastructure to the government who is directly in charge of operating. After a set time period, ownership is transferred to the government. Return on investment for the concessionaire is in the form of lease fee (Japan Fair Trade Commission, 2014). However, regulations on payments to investors are very strict to reduce the potential debt for the government. The total payment to the investor must be submitted to the National Assembly for approval.</li> </ul>

Philippines	- There are VGF and VGF funds.
Canada	- There is a fund (PPP Canadian fund) managed by the Ministry of Finance, with a ceiling of 25% of construction costs.
Japan	- PFI (Private Finance Initiatives) funds are available for both public and private sector, being invested as premier capital for specific PFI projects.
China	- There is a VGF mechanism including: financial support; equity; preferential loans; preferential policies when the project does not compensate reasonably for investors' expenses and profits.
India	- VGF is applied but there is no VGF fund, with a ceiling of 40% of total investment (excluding 10% of site clearance and resettlement cost). To be more specific, national budget contributes maximum 20% of total investment. The rest proportion is covered by local budget and ministries. VGF is not for projects invested by state-owned enterprises.
Brazil	- VGF is applied but there is no VGF fund. The fund is from 3% of federal and state budget. There is no limit for VGF.

*Source: Summarized by authors [6,7,8]*

To finance infrastructure investment projects in the form of PPPs, often characterized by large, complex and capital intensive projects requiring innovative financial techniques. Project finance is one such technique. In project finance, a project is considered a separate legal entity and its finance is repaid from the cash flow generated by the project (Merna and Dubey, 1998). PPP projects are generally financed with both equity (eg, common stock) and debt (eg, loans). A commonly followed philosophy is to use as much debt as the project cash flow allows to generate attractive returns for stockholders. In this regard, capital structures in most PPP projects are highly leveraged, with equity accounting for 10-30% of total project costs and debt financing accounting for the remaining 70-90% (Levy, 1996). While higher debt may allow a higher rate of return for investors, an excessive debt ratio could pose more risks to the project. Therefore, an appropriate structure of capital and debt is needed when financing a PPP project (Zhang, 2005).

International experience shows that many countries apply a mechanism of state capital to support PPP projects called State-funded support to increase feasibility (Viability Gap Funding - referred to as VGF)

**Table 6. Financial strategy for PPP project in different risk conditions**

No.	The risk conditions	Financial strategy
1	Low risk	<ul style="list-style-type: none"> <li>- Using high debt-to-equity ratio for maximum leverage and maximum return on equity.</li> <li>- Establishing minimum contingent credit facilities to minimize financial expenses.</li> <li>- Using capital markets to buy debt to reduce interest expenses.</li> <li>- Buying long-term financing early to reduce financial costs.</li> </ul>
2	High political risks	<ul style="list-style-type: none"> <li>- Attracting international companies or organizations to create leverage with local authorities.</li> <li>- Seeking help from influential individuals or organizations with relationships with local authorities.</li> <li>- Seeking support and guarantees from local governments.</li> </ul>

		<ul style="list-style-type: none"> <li>- Buying insurance from government organizations like the Foreign Investment Corporation.</li> <li>- Establishing backup credit facilities to cover unforeseen expenses.</li> </ul>
3	High financial risks	<ul style="list-style-type: none"> <li>- Obtaining loans from international lenders.</li> <li>- Using debt financing with a fixed or standard interest rate.</li> <li>- Applying face value in local currency.</li> <li>- Structuring to finance debt in currencies which are similar to expected revenue.</li> <li>- Structuring revenue in both local and foreign currencies.</li> <li>- Seeking government support and guarantees.</li> <li>- Including terms of revenue escalation in contracts.</li> <li>- Establishing a backup credit facility to cover unforeseen expenses.</li> </ul>
4	High market risk	<ul style="list-style-type: none"> <li>- Financing initial phase with equity and short-term loan &amp; re-financing in operational phase with long-term debt at lower costs.</li> <li>- Structuring debt repayment at low in the beginning, rising gradually in the beginning years of operation.</li> <li>- Negotiating the terms of the contract that allows user fee increases.</li> <li>- Establishing a backup credit facility to cover unforeseen revenue gaps.</li> <li>- Re-structuring debt, if necessary, in order to resolve cash flow issues during concession period</li> </ul>

*Source: Schaufelberger và Wipadapisut, 2003*

**Option 1** is to form a "PPP Project Development Fund" (according to the experience of some countries) with the function of allocating state capital and providing guarantees. This fund can mobilize capital from a variety of sources such as the state budget, government bonds, ODA, repayment by investors upon successful signing of contracts, payments of selling/authorizing operating infrastructure assets, sale of public assets after rearrangement. Option 1 has the advantage of being flexible, proactive in management and use demonstrates the Government's willingness to commit from capital contribution to guarantee mechanism, creating conditions to attract more investors. However, it is necessary to consider the fund mechanism in accordance with the provisions of the Law on Budget.

*Table 7. State trade support to PPP*

Possible measures	Apply
<b>Direct support from the government</b>	
Subsidy	Yes up to 40% of investment value, look up by fixed/absolute amount
Revenue share of existing facilities	Currently limit range but should be available
Government confiscates land	Yes
Operational fixing/subsidy payments	Yes (for DBFM and O&M contracts)
Blurry charge	No
Construction of related works	Yes
Government support equity	No
Secondary loan	Yes
Tax incentives	Yes
Additional development rights	No

Possible measures	Apply
	Bidding competes independently
Certified mail	Have
Potential government support	
Guaranteed minimum revenue	Only in cases where the revenue sharing limit is exceeded
Government guarantee for loans	No, secured by contract termination payments
Exchange rate risk	Yes
The Government acquires force majeure cases	Yes
Unexpected termination and payment	Yes
Transitional period	Yes
Flexible contract term	Yes
Extend the contract term	No
Partial risk guarantee	Yes
Partial credit guarantee	Yes

*Source: Summarized by authors [9,10]*

**Option 2** is to form a separate budget flow in the medium-term public investment plan. Experience lessons can be learned from some countries such as Canada and Mexico in the establishment of a specialized agency/fund to manage and invest in infrastructure projects (including transport infrastructure projects). Another direction to follow is the model of a finance company, performing the role of capital mobilization and direct or indirect investment through the commercial banking system, guarantee for the risks of investment projects, and managing investment process.

In addition, project risks, project conditions and financial resources should be taken into account when choosing an appropriate financial strategy for an IP investment project in the PPP form. Schaufelberger and Wipadapisut (2003) recommended financial strategies for infrastructure investment projects in the form of PPP under four risk conditions (as shown in Table 6).

## 5.2. Recommendation for Vietnam

In the period 2020-2025, the capital demand for infrastructure in Vietnam accounts for about 8-10% of GDP, of which the state budget only meets about 50% of the total demand. According to the Asian Development Bank (ADB) and HSBC, the average annual investment in infrastructure in Vietnam is about 16-17 billion USD/year (about 370-400 trillion VND). Accordingly, the need for PPP capital in the period 2020-2025 may reach 4-5% of GDP (about 10-12 billion USD/year), of which transport infrastructure accounts for about 50-60% of the total PPP capital (about 5-6 billion USD/year). Obviously, this is a huge challenge for the resource mobilization process for PPP projects.

An appropriate level of government support can improve the financial viability and enhance the attractiveness of a PPP project. However, too much government support could raise concerns that the private sector will generate too much profit at the same cost as public investment. To avoid such concerns, the government should adjust the level of support and select the appropriate

support types according to the profitability of the PPP project.

In general, government can offer different types of incentives and with different tools to reduce the risks and uncertainties that may arise from a PPP investment. Incentives are provided in a way that can significantly improve the financial viability of projects and reduce the risk of project implementation so that they are more attractive to the private sector.

## VI. CONCLUSION

A sound financial plan for a transport infrastructure investment in PPP form must have a combination of equity and debt, and a financial strategy based on considerations of project risk, project and financial resources. Some government support such as minimal guaranteed revenue, flexibility in the tariff structure, financial assistance and guarantees for force majeure events may be required to execute a project. PPP projects are financially viable and necessary to contribute to ensuring that the project is profitable for a private partner while still ensuring efficient use of state investment.

---

### References

- [1]. ADB, Public private partnership (PPP) handbook, 2013. <https://www.adb.org/documents/public-private-partnership-ppp-handbook>
- [2]. A. Akintoye, C. Hardcastle, M. Beck, E. Chinyio, D. Asenova, Achieving best value in private finance initiative project procurement, *Construction Management and Economic*, 21 (2003) 461-470. <https://doi.org/10.1080/0144619032000087285>
- [3]. Akintoye, A., Beck, M., Hardcastle, C., Chinyio, E. and Asenova, D. (2001), 'The financial structure of Private Finance Initiative projects', *Proceedings of the 17th ARCOM Annual Conference*, Salford University, Manchester, 1, 361-9.
- [4] A. Badshah, Good Governance for Environmental Sustainability, Public Private Partnerships for the Urban Environment Programme (PPPUE), United Nations Development Program, UNDP, New York. 1998
- [5] Birnie, J. (1999), 'Private finance initiative (PFI) – UK construction industry response', *Journal of construction procurement*, 5 1, pp. 5-14.
- [6] K. Boyfield, Private sector funding of public sector infrastructure, *Public money and management*, 12 (2009) 41-46. <https://doi.org/10.1080/09540969209387708>
- [7] Briones, J.M. (1997), 'The Philippine BOT Program-A Framework for Public Private Cooperation in Philippine Infrastructure', in *Proceedings of Regional Seminar on Infrastructure Procurement-the BOO/BOT Approach*, Colombo, Sri Lanka, pp. 16-22.
- [8] Ministry of Transport – International Development Association (2009). Public – Private Partnership (PPP) in road transport – Final report.
- [9] PPP law (2000).
- [10] National Assembly Economic Committee (2013), Public – Private Partnership (PPP): international experience and Vietnam legal framework, Book of Knowledge Publisher.