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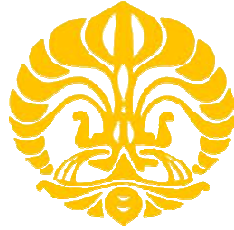
**ISTIA
UNIVERSITÉ D'ANGERS**

**THE PUBLIC - PRIVATE PARTNERSHIPS : ON THE CASE
OF INFRASTRUCTURE PROJECT**

TESIS

**NUGROHO BUDI SATRIAWAN
1006788201**

**FAKULTAS TEKNIK
PROGRAM STUDI TEKNIK SIPIL
DEPOK
JULI 2012**



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**THE PUBLIC - PRIVATE PARTNERSHIPS : ON THE CASE
OF INFRASTRUCTURE PROJECT**

TESIS

Diajukan sebagai salah satu syarat untuk memperoleh gelar Magister Teknik

**NUGROHO BUDI SATRIAWAN
1006788201**

**FAKULTAS TEKNIK
PROGRAM STUDI TEKNIK SIPIL
KEKHUSUSAN MANAJEMEN INFRASTRUKTUR
DEPOK
JULI 2012**

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KATA PENGANTAR

Puji syukur saya panjatkan kepada Tuhan Yang Maha Esa, karena atas berkat dan rahmat-Nya, saya dapat menyelesaikan tesis ini. Penulisan tesis ini dilakukan dalam rangka memenuhi salah satu syarat untuk mencapai gelar ganda (*Double Degree*) Magister Teknik Program Studi Teknik Sipil pada Fakultas Teknik Universitas Indonesia dan Master 2 *System Engineering and Project Management* pada ISTIA – Université d'Angers, Perancis.

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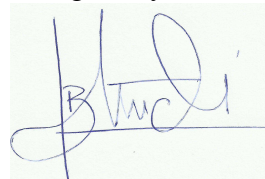
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ABSTRACT

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Infrastructure Project

Governments face an ever increasing need to find sufficient financing to develop and maintain infrastructure. Furthermore, infrastructure services are often provided at an operating deficit, which is covered only through subsidies, thus constituting an additional drain on public resources. Combined with most governments limited financial capacity, these pressures drive a desire to mobilize private sector capital for infrastructure investment. Structured correctly, a Public Private Partnerships (PPPs) may be able to mobilize previously untapped resources from the local, regional, or international private sector which is seeking investment opportunities. The objectives of this report is to learn more about the Public Private Partnerships especially in terms of structure and financing schemes. In this report reviewed and summarizes the available document (book, journal, thesis and other) to focus on structure and financing schemes in public private partnership. Financial calculations and risk management is a main factor success in the public private partnerships.

Key Words : Public – private partnerships (PPPs)

ABSTRAK

Nama : Nugroho Budi Satriawan
Program Studi : Teknik Sipil
Judul : Kemitraan Pemerintah Swasta : Pada Kasus Proyek
Infrastruktur

Pemerintah menghadapi kebutuhan pembiayaan yang semakin meningkat untuk mengembangkan dan memelihara fasilitas infrastruktur. Pelayanan akan infrastruktur sering disediakan dengan defisit operasi, yang hanya ditutupi melalui subsidi, sehingga akan memberatkan pada sumber daya masyarakat (publik). Di padukan dengan sebagian besar kemampuan keuangan pemerintah yang terbatas, hal ini mendorong untuk memobilisasi modal sektor swasta untuk ikut dalam investasi di bidang infrastruktur. Terstruktur dengan tepat Kemitraan Pemerintah Swasta (KPS) mungkin akan dapat mengerakan sumber daya/modal yang sebelumnya belum dimanfaatkan sektor swasta baik ditingkat lokal, regional, atau internasional yang sedang mencari peluang investasi. Tujuan dari studi ini adalah untuk mempelajari lebih lanjut tentang Kemitraan Pemerintah Swasta terutama dalam hal struktur dan skema pembiayaannya. Dalam studi ini mengkaji dan merangkum berbagai macam dokumen yang tersedia (buku, jurnal, tesis dan lainnya) untuk lebih fokus pada struktur dan skema pembiayaan dalam Kemitraan Pemerintah dan Swasta. Kalkulasi finansial dan manajemen resiko adalah faktor utama penentu keberhasilan dalam Kemitraan Pemerintah Swasta.

Kata Kunci : Kemitraan Pemerintah Swasta (KPS)

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CHAPTER 1 INTRODUCTION

1.1 Background

Infrastructure is easier to recognize than define, but according Financial Dictionary (<http://www.thefreedictionary.com>) infrastructure is the basic facilities, services, and installations needed for the functioning of a community or society, such as:

- Oil and Gas
- Energy (power generation and supply of electricity)
- Transport (toll roads, rail ways, light rail systems, bridges and tunnels)
- Water (sewerage, waste water treatment and water supply)
- Telecommunications (telephones).
- Social infrastructure (hospitals, prisons, courts, museums, schools and government accommodation).

Infrastructure represents those types of capital goods that serve the activities of many industries included paved roads, railroads, seaports, communication networks, financial systems, and energy supplies that all support production and marketing for industries within the country. Beside that, the quality of an Infrastructure directly affects a country's economic growth potential and the ability of an enterprise to engage effectively. Infrastructure is important for the services it provides. Infrastructure provides services that support economic growth by increasing the productivity of labors and capital thereby reducing the costs of production and raising profitability, production, income and employment (<http://www.oppapers.com>)

According recent research of (World Bank) shows that every 10 percent increase in infrastructure provision increases output by approximately 1 percent Gross Domestic Product (GDP) per capita, even in Egypt an increase in infrastructure expenditures from 5 to 6 percent of Gross Domestic Product would raise the annual GDP per capita growth rate by half a percent in a decade's time, so it very significant influence of infrastructure to GDP per capita a country.

1.2 Objectives and Scope

The objectives of this study is to learn more about the Public Private Partnerships especially in terms of structure and financing schemes. In the writing of this report is divided into six chapters each chapters is focusing on a specific area of information about Public Private Partnerships :

- **Chapter 1** Introduction defined the infrastructure, importance of infrastructure, objective and systematic the report.
- **Chapter 2** Present infrastructure problem, definition of public private partnerships (PPPs), actors and types of PPPs, also presented advantages as well phase PPPs Project.
- **Chapter 3** Describes financing in public private partnerships which includes the financial appraisal and financial indicator to evaluating the viability the project
- **Chapter 4** Present success factors in PPPs project and different perspective between public private in success project.
- **Chapter 5** Present case studies in PPPs project and analyze whether the project succeeds or fails.
- **Chapter 6** Conclusion of this report.

Many information already exists about public-private partnerships in infrastructure development, either in book, journal, thesis, experience, practice and others . In this report reviewed and summarizes the available document (book, journal, thesis, and others.) to focus on structure and financing schemes in public private partnership. In this study also presents case studies of implementation project public private partnerships and analyzed whether the project succeeds or fails.

CHAPTER 2 OVERVIEW PUBLIC PRIVATE PARTNERSHIPS

2.1 Problems in Infrastructure Investment

Governments face an ever increasing need to find sufficient financing to develop and maintain infrastructure required to support growing populations. Governments are challenged by the demands of increasing urbanization, the rehabilitation requirements of aging infrastructure, the need to expand networks to new populations, and the goal of reaching previously unserved or underserved areas. Furthermore, infrastructure services are often provided at an operating deficit, which is covered only through subsidies, thus constituting an additional drain on public resources.

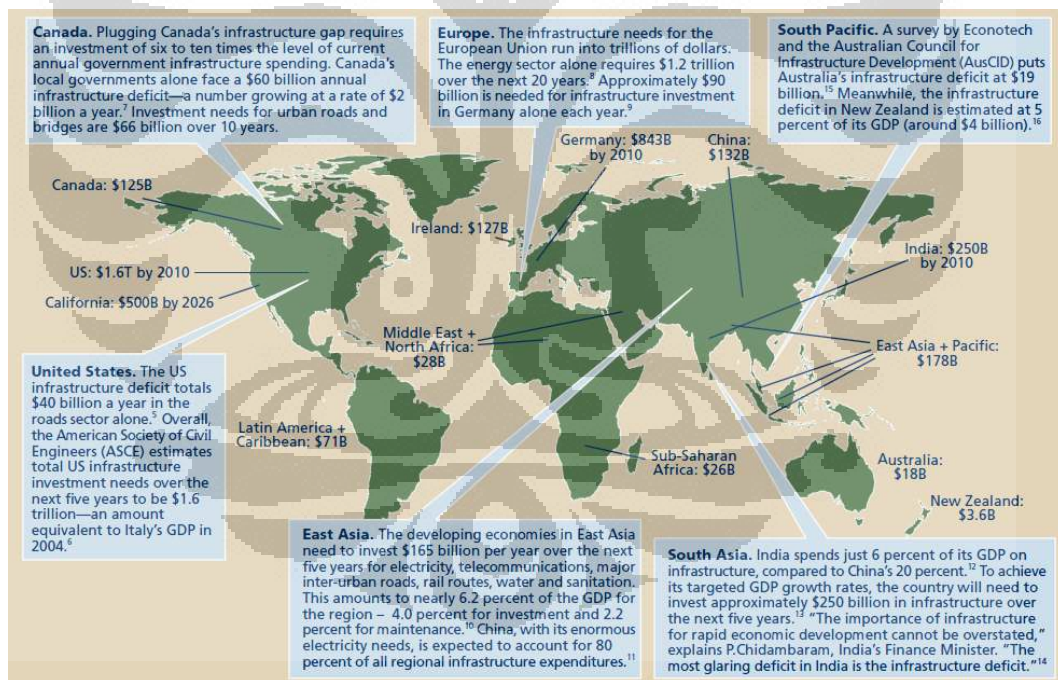


Figure 2.1 Projected Infrastructure Investment Needs

Source : A Deloitte Research Study (2006, p.3)

Combined with most governments limited financial capacity, these pressures drive a desire to mobilize private sector capital for infrastructure investment. Structured correctly, a Public Private Partnerships (PPPs) may be able to mobilize previously untapped resources from the local, regional, or international private sector which is seeking investment opportunities.

The goal of the private sector in entering into a PPPs is to profit from its capacity and experience in managing businesses (utilities in particular). The private sector seeks compensation for its services through fees for services rendered, resulting in an appropriate return on capital invested. (Asian Development Bank, n.d ,p.3)

2.2 Definition Public Privat Partnerships (PPPs)

A public private partnerships, or PPPs, refers to a contractual agreement between a government agency and a private sector entity that allows for greater private sector participation in the delivery of public infrastructure projects. Compared with traditional procurement models, the private sector assumes a greater role in the planning, financing, design, construction, operation and maintenance of public facilities. Project risk is transferred to the party best positioned to manage it. Some of the most common PPPs models are described below (Eggers & Dovey, 2006 , p.8)

The term “public private partnership” describes a range of possible relationships among public and private entities in the context of infrastructure and other services, there are differences in concept public privat partnerships (PPPs) and privatization. Importantly, private provision of infrastructure and non-core services does not mean privatization , as governments will generally continue to deliver core services. Furthermore, asset responsibility under a PPPs is generally transferred only for a specified period.

While privatization involves the sale of shares or ownership in a company or the sale of operating assets or services owned by the public sector. Privatization is most common and more widely accepted in sectors that are not traditionally considered public services, such as manufacturing, construction, and others. When privatization occurs in the infrastructure or utilities sectors, it is usually

accompanied by sector specific regulatory arrangements to take account of social and policy concerns related to the sale, and continuing operation of assets used for public services. (Asian Development Bank, n.d, p.2)

2.3 The Actors in Public Private Partnerships

Although list of actors participating in a PPPs Project depends on its nature and that of the project, but we can still identify some of the actors and the most common roles:

1. **Public authority/Government:** Responsible for the project, deciding to use a PPPs and the designs. When preparing the project, the public authority responsible for drafting the tender documents, manage the bidding process, evaluate bids from various bidders, to choose a quote and formalize the contractual framework. Through out the course of the project, the public authority is responsible for ensuring the proper execution of the contract. As part of concessions in case of handover of assets to the public sector at the end of the contract, the public authority is responsible for putting in place other mechanisms for managing or operating services concerned at the surrender becomes effective.
2. **Consortium / Special Purpose Vehicle (SPV) :** This is the entity responsible for developing the project in accordance with the specifications specified by the public authority. It follows that the consortium/SPV of the PPPs project is the party who undertakes to provide the services indicated in the contractual framework of PPPs, and these can be provided directly by the contractor himself or by a third party chosen by him. The Consortium/SPV of the PPPs project can be an existing business. However, there is often a company created specifically for the project covered by the PPPs. This is frequently the case when the PPPs is structured as a 'financial plan'. In this case, the ownership of this structure may include several actors of the project, such as prime contractors, operators, or the public authority itself. However, the involvement of third parties as shareholders of the company thus created does not eliminate the need for solid contractual framework governing the

responsibilities of these parties in the draft if they are required to play an important role.

3. **Operator** :The consortium/SPV project can use the infrastructure it self. However, if a specific expertise is required (market knowledge or technical expertise), an independent company may have to intervene and take over the operation on behalf of the Consortium/SPV of the PPPs project. The relationship between them (including in terms of capacity, service levels, pricing policy) must be clearly governed by a contract.
4. **Shareholder / Sponsors** : The use of private funds is one of the most characteristic aspects of the PPPs. Normally, the project requires an initial investment that will pay for itself then through revenue generated. Therefore, a financial package must be established to cover the cash requirements throughout the life of the project. The main sources of financing of a PPPs include, among other things, capital brought by the consortium/SPV of PPPs project (equity), borrowing with banks and securities or bonds sold on financial markets under form of investment products.
5. **Financiers**: Consortium/SPV borrows funds from lenders. The lenders look to the projected future revenue stream generated by the project and the project company's assets to repay all loans.
6. **Contractor** : Same with operator , Consortium/SPV of the PPPs may choose, or be asked, to provide one or more services ranging from the design, building from contractor/engineer.
7. **User / Other Stakeholder** : In infrastructure projects large and complex, users of that infrastructure are not the only beneficiaries. For example, some may benefit from increasing property values, better accessibility and new business opportunities generated by the operation of the infrastructure in question. It may therefore be appropriate to include these stakeholders in the structure of the PPPs so that they contribute to the project's feasibility.

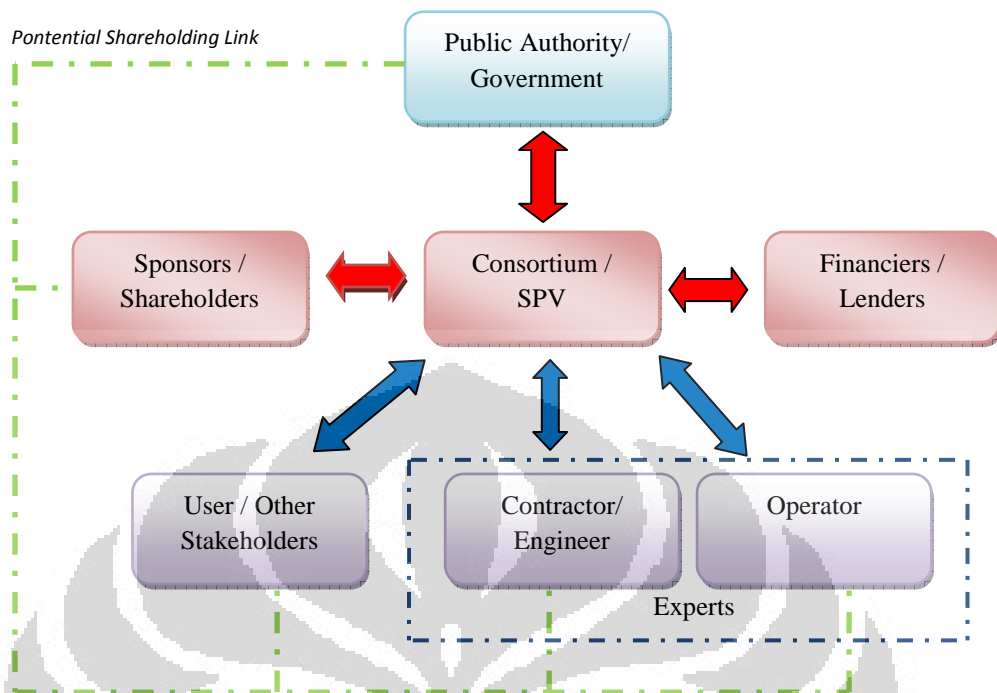


Figure 2.2 Actors in Public Private Partnerships

Source : Conference of European Directors of Road (2009, p.7) “has been reprocessed”

2.4 Types of Public-Private Partnerships

According Bozeman B. (1987) classified types of PPPs according to ownership, funding and control. Ownership could be state, private, or joint. Funding refers to the amount of capital investing coming from either partner, while control refers to the partner that is in charge of the operations and maintenance activities of the PPPs. A combination of different degrees of ownership, funding and control determines the type of PPPs that is been formed. (Eggers and Dovey 2006, p.8) classify the type of PPPs Project as follows :

- **Design-Build (DB):** Under this model, the government contracts with a private partner to design and build a facility in accordance with the requirements set by the government. After completing the facility, the government assumes responsibility for operating and maintaining the facility. This method of procurement is also referred to as Build-Transfer (BT).

- **Design-Build-Maintain (DBM):** This model is similar to Design-Build except that the private sector also maintains the facility. The public sector retains responsibility for operations.
- **Design-Build-Operate (DBO):** Under this model, the private sector designs and builds a facility. Once the facility is completed, the title for the new facility is transferred to the public sector, while the private sector operates the facility for a specified period. This procurement model is also referred to as Build-Transfer-Operate (BTO).
- **Design-Build-Operate-Maintain (DBOM):** This model combines the responsibilities of design-build procurements with the operations and maintenance of a facility for a specified period by a private sector partner. At the end of that period, the operation of the facility is transferred back to the public sector. This method of procurement is also referred to as Build-Operate-Transfer (BOT).
- **Build-Own-Operate-Transfer (BOOT):** The government grants a franchise to a private partner to finance, design, build and operate a facility for a specific period of time. Ownership of the facility is transferred back to the public sector at the end of that period.
- **Build-Own-Operate (BOO):** The government grants the right to finance, design, build, operate and maintain a project to a private entity, which retains ownership of the project. The private entity is not required to transfer the facility back to the government.
- **Design-Build-Finance-Operate/Maintain (DBFO, DBFM or DBFO/M):** Under this model, the private sector designs, builds, finances, operates and/or maintains a new facility under a long-term lease. At the end of the lease term, the facility is transferred to the public sector. In some countries, DBFO/M covers both BOO and BOOT.

PPPs can also be used for existing services and facilities in addition to new ones. Some of these models are described below.

- **Service Contract:** The government contracts with a private entity to provide services the government previously performed.

- **Management Contract:** A management contract differs from a service contract in that the private entity is responsible for all aspects of operations and maintenance of the facility under contract.
- **Lease:** The government grants a private entity a leasehold interest in an asset. The private partner operates and maintains the asset in accordance with the terms of the lease.
- **Concession:** The government grants a private entity the exclusive rights to provide operate and maintain an asset over a long period of time in accordance with performance requirements set forth by the government. The public sector retains ownership of the original asset, while the private operator retains ownership over any improvements made during the concession period.
- **Divestiture:** The government transfers an asset, either in part or in full, to the private sector. Generally the government will include certain conditions with the sale of the asset to ensure that improvements are made and citizens continue to be served.

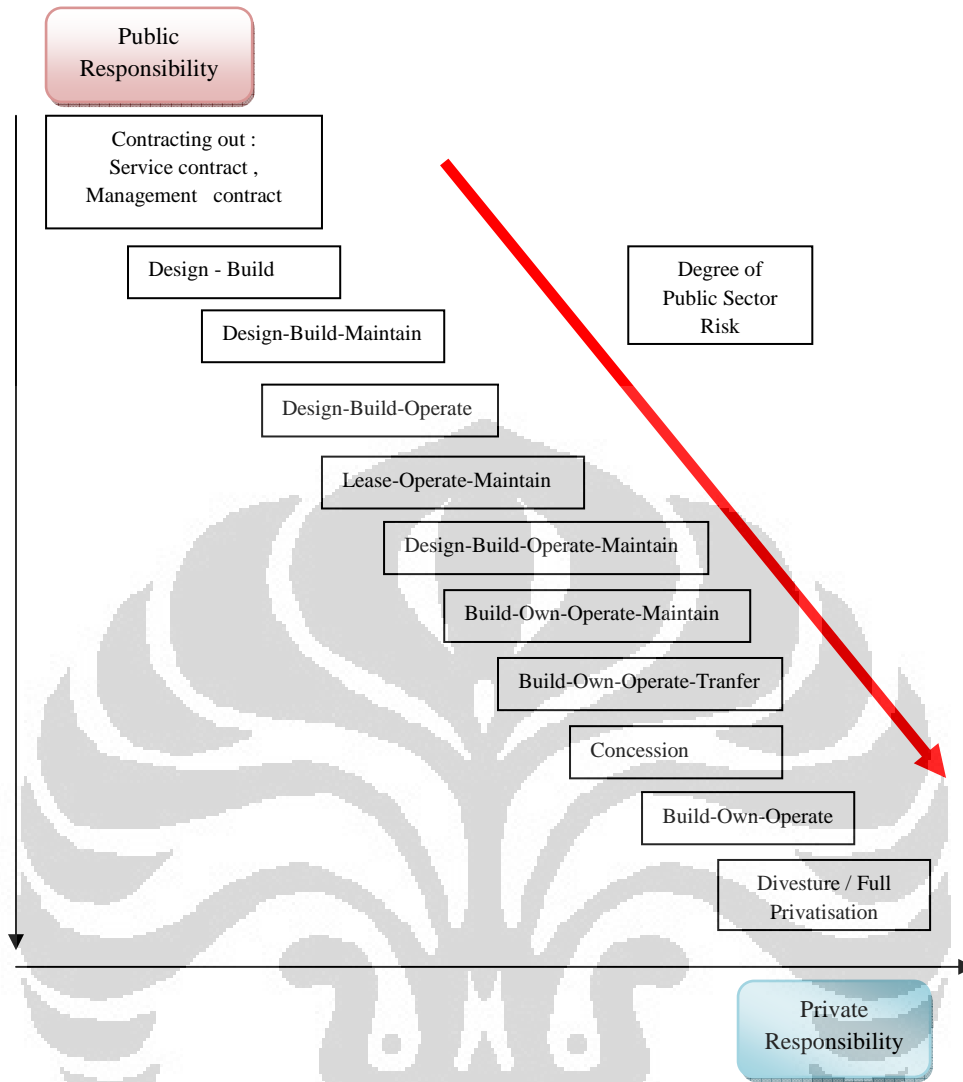


Figure 2.3 Scale of Public Private Partnerships

Sources: Canadian Council for Public-private partnerships; Deloitte / Palmer (2009, p.5)

Tabel 2.1 Comparison Asset Ownership

Model	Creteria	Asset Ownership	Construction	Capital Investment
Service Contracts		Public Sector	Public Sector	Public Sector
Management Contracts		Public Sector	Public Sector	Public Sector
Design-Build (DB)		Public Sector	Public Sector	Public Sector
Design-Build-Maintain (DBM)		Public Sector	Public Sector	Public Sector
Lease Contracts		Public Sector	Public Sector	Public Sector
Design Build Finance Operate (DBFO)		Public Sector	Private Sector	Private Sector
Build Transfer Operate (BTO)		Private Sector During Contract	Private Sector	Private Sector
Build Operate Transfer (BOT)		Private Sector During Contract	Private Sector	Private Sector
Concessions		Private Sector During Contract	Private Sector	Private Sector
Build Own Operate (BOO)		Private Sector	Private Sector	Private Sector
Divestiture		Private Sector	Private Sector	Private Sector

2.5 Advantages of Public Private Partnerships

PPP projects have many advantages than procurement traditional . These and other potential advantages of PPPs are described below (AECOM Consult In, 2007, p.16)

- **Cost Efficiency and Productivity.**

The private sector has an ability to ensure its operations are as cost efficient as possible. A private operator would also be motivated to increase the productivity and return from assets to repayment all debt.

- **Reduction of Financial Constraints**

Many projects proposed by public entities are postponed or do not proceed due to limited financial resources. PPPs provide an advantage with respect to financing by allowing the private sector to finance projects using private funds, in effect providing a form of off-balance sheet financing for public agencies. In turn, financing commitments from the private sector often bring forward the development of projects that may otherwise not proceed due to a lack of capital.

- **Stronger Working Relations**

PPPs provide the opportunity for public sector agencies and private sector providers to develop long-term, high trust relationships. With the need to concentrate on long-term objectives, there is greater incentive for public sponsors and private providers to understand goals and share information to develop better long-term solutions. Further, the opportunity to develop strong long-term relationships provides a better forum in which to resolve problems and issues.

- **Faster Delivery**

PPPs can expedite the financing and delivery of projects through the involvement of the private sector in these phases of a project, that lower project costs by avoiding inflationary cost increases, applying best practices and new technology, and transferring more technical and other risks to the private sector which is often better able to manage these risks. The private sector has an incentive to minimize construction delays in order to minimize costs and bring

forward their revenue stream. Contract conditions including early completion bonus payments and the inclusion of the construction period within the concession period can provide further incentives to bring forward delivery.

- **Innovation and Expertise.**

Private sector involvement encourages the development of new and creative approaches to financing, economies of scale, development, implementation and operation/maintenance. The private sector can also offer expertise in project, operational and risk management. In particular, financial markets have become savvy in the methods that they use to structure finance to suit infrastructure projects through the use of stepped margin and indexed bonds.

- **Integration of Project Development and Delivery.**

The potential integration of design, construction, maintenance, and operation provides incentives for the private sector to optimize expenditure and maximize innovation to achieve the greatest level of cost efficiency over the life of the asset through a life-cycle approach to asset delivery rather than minimizing the cost of a specific part of the asset lifecycle e.g. construction costs.

- **Better risk allocation.**

A core principle of any PPPs is the allocation of risk to the party best able to manage it at least cost. The aim is to optimise rather than maximise risk transfer, to ensure that best value is achieved.

2.6 Risk

Addition to many advantages public private partnerships also bring risks, to consider when using public private partnerships. Risk is the chance that an investment's actual return will be different than expected. Risk includes the possibility of losing some or all of the original investment. (<http://www.investopedia.com>)

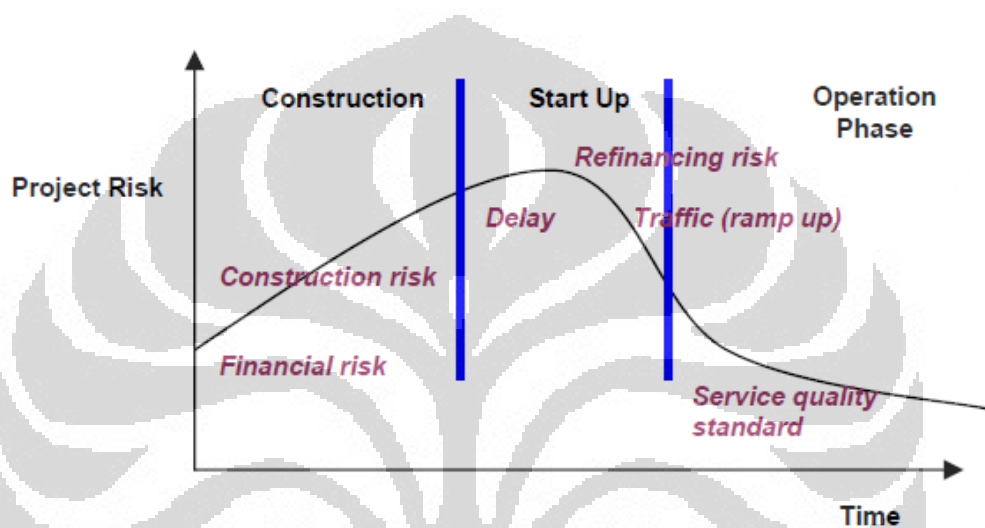


Figure 2.4 Project Risk During The Project Life

Source : http://rru.worldbank.org/Documents/Toolkits/Highways/2_carac/22/224.htm

Risks are present throughout the life of a project. They evolve in nature and intensity (and usually tend to lessen with time). The technical risk relates both to the construction and operational phases. Economic and financial risks are basically no different from those encountered on other projects, apart from the fact that they relate to longer periods. The commercial risk results from the conjunction of tariffs and traffic .

(http://rru.worldbank.org/Documents/Toolkits/Highways/2_carac/22/224.htm)

2.6.1 Identifying Risk

Is to identify all possibilities of any risk in public private partnerships that may arise can be anticipated or avoided so that the project be a success. The following is a number of key risks in public private partnerships project. It is not exhaustive and will vary from project to project.

- **Construction Risk**

Construction risk is nearly always assigned to the private party, which in turn is likely to include strong incentives for on-time completion of works in its construction contract. The capital construction cost of any project is one of the fundamental factors upon which financing is based, and when cost overruns are incurred; the financial feasibility of a concession can be jeopardized. Construction delays also have detrimental effects on capital costs. While some delays can be minimized through careful construction management (European Commission, 2003, p.54)

- **Operating Risk**

The financiers/lender will require an appropriately qualified operator to maintain the project and to meet the projected operating budget. They will also review proposed operations to see if sufficient funds have been allocated for the operations and maintenance and that sufficient trained personnel are available to operate the project facility (UN ESCAP, n.d, 38)

- **Revenue Risk.**

Revenue risk is the most fundamental one involved in PPPs projects, the lender/ financier whether the income will be able to pay all debts. This risk is only reduced after a number of years of operation. In order to arrange project financing, certain assumptions regarding usage and revenue levels must be made (European Commission, 2003, p.53)

- **Sponsor Risk .**

Lender/financiers also look for evidence that the sponsors have the resources and skills necessary to deliver a project on time and on budget and have the ability to resolve any problems encountered during the construction phase.(UN ESCAP, n.d, p38)

- **Political Risk .**

These risks are associated with the nature of the political support towards private sector involvement in infrastructure development, changes in the country's taxation regime, the likelihood of nationalization or expropriation of infrastructure by the host government, failure to honor the concession agreement, imposition of restrictions on import/export, and delay or failure in issuing the necessary permits and clearances for the implementation of the project (Hans, Yu, Kaladindi, Singh ,2009, p.36)

- **Regulatory / Contractual Risk.**

Although governments negotiate contract terms and conditions with their concessionaires, they are not always successful in maintaining their commitments. Lenders will seek legal opinions from local counsel to ensure that all the project contracts are legal, valid, binding and enforceable under the relevant laws (European Commission, 2003, p.54)

- **Environmental Risk.**

The environment is a growing concern to financiers, and they are increasingly concerned to protect themselves against environmental liabilities. Financiers will require that all planning, environmental and other consents and approvals have been obtained. They may also look at potential changes in future environmental regulation for risks to the project's future economic operation(UN ESCAP, n.d, p38)

- **Force Majeure Risk.**

Force majeure risk is a risk that is beyond the control of all parties to the project, such as severe weather, fire, flooding. Often, a force majeure

clause is used to excuse any party's performance in the face of occurrences beyond their control.

2.6.2 Risk Mitigation

Risk mitigation refers to the practice that can reduce either the likelihood of occurrence of risk or the impact of the consequence in case the risk occurs. One of the most commonly used risk mitigation practice is to transfer the risks to another party who is in a better position to manage and control the risk (Han, Yu, Kalanindi, Singh, p.40).

Risk mitigation is an action that is taken to :

- Reduce the likelihood of a risk materializing
- Reduce the consequences should that risk materialize.

The action taken will vary depending on the risk and the party potentially being impacted by that risk.

Tabel 2.2 Consequences and Mitigation Risks

Risk Category	Description	Consequence	Mitigation
Site Conditions	<ul style="list-style-type: none"> - Existing structures may be inadequate. - Contamination of site. - Necessary approvals may not be obtained 	<ul style="list-style-type: none"> - Additional construction costs and time delays. - Clean up costs 	<ul style="list-style-type: none"> - Commission studies to investigate suitability of site and structures - Private sector to incorporate risk Through refurbishment during construction phase.
Design, Construction and Implementation Risk	<ul style="list-style-type: none"> - Facility incapable of delivering at the anticipated costs. - Physical or operational Implementation tests cannot be completed 	<ul style="list-style-type: none"> - Increase in recurrent costs, delays. - Delayed/lost revenue. 	<ul style="list-style-type: none"> - Seek reputable constructors with strong financial credentials. - Private party may pass risk to builder/architects while maintaining primary liability. - Link payments to progress
Financial	<ul style="list-style-type: none"> - Interest rate risk. - Financing unavailable. - Contingent funding requirements 	<ul style="list-style-type: none"> - Increased project cost. - Noncompletion Of construction. 	<ul style="list-style-type: none"> - Interest rate hedging. - Financial due diligence. - Bank/capital guarantees from Finance companies
Operating	<ul style="list-style-type: none"> - Inputs, maintenance may yield higher costs. - Changes to government requirements with respect to facility operations. 	<ul style="list-style-type: none"> - Increase in operating costs. - Adverse effects on quality and service delivery. 	<ul style="list-style-type: none"> - Long-term supply contracts where quality/quantity can be assured. - Upfront specification by public sponsoring agency

Risk Category	Description	Consequence	Mitigation
Market	<ul style="list-style-type: none"> - Fluctuations in economic activity on demand - Competition, demographic change and inflation. 	<ul style="list-style-type: none"> - Lower revenues. - Diminution in real returns to the private party 	<ul style="list-style-type: none"> - Private operator to seek an availability payment element to minimize impact on risk premium. - Review likely competition for service and barriers to entry
Legislative	<ul style="list-style-type: none"> - Additional approvals required during the course of the project cannot be obtained - Changes in laws and regulation 	<ul style="list-style-type: none"> - Further development or change in business operation may be prevented. - Increase in operating costs with regards to complying with new laws 	<ul style="list-style-type: none"> - Private sector to Anticipate requirements. - Public sponsor may mitigate such change by monitoring and limiting changes which may yield adverse consequences.
Asset Ownership	<ul style="list-style-type: none"> - Loss of the facility upon premature termination of lease or other project contracts upon breach and without adequate payment. - Different residual value to that Originally calculated 	<ul style="list-style-type: none"> - Loss of investment of private party. - Possible service disruption as additional capital costs incurred to upgrade the asset to the agreed value and useful life. 	<ul style="list-style-type: none"> - Private party will be given cure rights to remedy defaults. - Public sponsor may make payment for value in the project on a cost to complete basis if termination occurs precompletion. - Impose on the private part maintenance and refurbishment Obligations - Secure services of a reputable maintenance contractor, with strong financial credentials

Source :AECOM Consult Inc (2007, p.2-19)

2.7 Phase of Public Private Partnerships Project

Hans, Yu, Kaladindi, Singh (2009, p.19) The phases of PPPs projects may vary with the different categories of PPP models, but generally can be described as follows :

Phase I Needs assessment and option appraisal.

In this phase the need for a particular infrastructure facility is identified, normally by the government (solicited project) or more often by the project executing organization (unsolicited project). The needs assessment is usually done in form of a cost-benefit analysis. Phase 1 are first considerations concerning the procurement method to be applied by undertaking a preliminary qualitative PPPs Test. It analyses, whether the project might at all be suitable for being carried out on a PPP basis by investigating qualitative of legal, political, organizational or technical character.

Phase II Preparation and conception.

The preparation works proceed by a detailed development of the PPPs option in order to enable a comparison with the traditional financing. At this stage, governments are drawing their decisions for PPPs based on greater efficiency the private sector will deliver in comparison to the traditional public procurement.

Phase III Tendering process and contract award.

Once the government has determined to proceed with PPPs, it will decide what procurement procedure to follow, given the applicable laws. Commonly the government will employ competitive tendering. It will include detailed output specifications as to the infrastructure facility and the length and terms of the PPPs contract in the invitation to tender. Accordingly, prospective sponsors, usually acting as consortia, will carry out their own feasibility studies and prepare to submit bids. The government will evaluate these bids and select a number of preferred bidders for negotiation, during which the terms of the project will be discussed and redrawn. At the end the contract is awarded to the bidder that best conforms with the defined awarding criteria.

Phase IV Implementation and contract management.

The implementation starts with the construction of project facilities. After passing agreed completion tests, the facilities will be accepted by the government and can commence operation. In the case of user financed schemes, the SPV will use the revenues generated by the project to operate and maintain the facilities, to repay the finance and to pay a reasonable rate of return to its investors.

Phase V: Contract termination.

Upon the termination of the contract, the project facilities under those functional PPPs models will be transferred to the government, usually for nil or nominal consideration and up to standard and conditions predefined in the PPPs contract.





Phase I Need assessment and option appraisal	
	<ul style="list-style-type: none"> • Assessment of need, economic and financial feasibility • Selection of potential realisation concepts • PPPs-Test
Phase II Preparation and conception	
	<ul style="list-style-type: none"> • Development of traditional procurement option (PSC) • Development of PPPs procurement option • Efficiency comparison (Value for Money test)
Phase III Tendering process and contract award	
	<ul style="list-style-type: none"> • Preparation and prequalification • Negotiation procedure • Efficiency comparison • Contract award and closing the deal
Phase IV Implementation and contract management	
	<ul style="list-style-type: none"> • Construction/ operation • Performance control by the government
Phase V Contract termination	
	<ul style="list-style-type: none"> • Transfer • Reuse or decommission of assets

Figure 2.5 Phase PPPs Project.

Source : PPPs in Infrastructure Development : Case Studies from Asia and Europe (2009, p.19)

CHAPTER 3

FINANCING ON PUBLIC PRIVATE PARTNERSHIPS

3.1 Source of Finance

Development infrastructure with PPPs typically require financing; that is, external funds are required for the initial investment costs that are recovered over time from future revenue streams. The funds may be sourced from the public sector or the private sector. Regardless of the source of finance, such funds have a cost and, therefore, impact the project's economics and required tariffs (and thus affordability). Fundamental to the question of project financing is the correlation between perceived credit risk (resulting from various technical, commercial, and other risks associated with the project) and the cost of finance. (Asian Development Bank, n.d, p.56)

As the demand for infrastructure fast growing and the governments have limited fund, governments are increasingly looking to public private partnerships as an innovative way of financing infrastructure projects. Generally projects are financed using a mix of debt and equity instruments. The capital structure can be made up of three components equity, debt, and quasi equity/debt (UN ESCAP, n.d, p.13)

- Equity: Long-term capital provided by an investor in exchange for shares, representing ownership in the company or project. A key characteristic that distinguishes equity from debt is the holder's claim to assets. Equity holders receive dividends and capital gains, which are based on net earnings and distributed only after all debt holders have been paid. In the event of default, equity holders have a claim on the income and assets which is secondary to debt holders. In exchange equity holders have unlimited potential returns compared to debt holders whose investment returns are limited to the interest earned on the debt. Equity capital can come from project sponsors, government, third party private investors or internally generated cash. (UN ESCAP, n.d, p.16)

- Debt: Unlike equity contributions, debt contributions have the highest priority amongst the invested funds (e.g. senior debt must be serviced before any other payments are made). PPPs generally involves the construction of high value, long life assets with stable revenues, and therefore seeks long-term, fixed interest debt. (Delmont, 2010, p34)
- Quasi debt/equity: Located somewhere between equity and debt, quasi-debt / equity contributions are accorded lower priority than senior debt but higher priority than equity.

Besides the above three sources of financing, there are other sources:

- Grants: Non-returnable sources of funding usually provided by organizations with an interest to seeing a project developed. Grants can be used to reduce risk exposure and therefore can encourage developers to consider projects, which have high risks and uncertain returns. Grant providers do not have any claims to assets should the project default. (UN ESCAP, n.d, p.16)

3.2 Source of Revenue

Debt / Equity from lenders / investors incurring costs such as interest, dividends and operating expenses, to pay it required from project revenues. The Project Revenue are obtained from the government (subsidy) and/or fees as well tariffs charged to the user/customer to the service.

“*Fee*” relates to a revenue stream originating from one offtaker/public entity. This structure provides the project company with simplified billing and collection, and assessment of credit risk.

“*Tariffs*” relates to a revenue stream sourced from consumers. A project company with a *Tariffs* revenue profile will face more complex billing, collection and credit risk due to the interfaces with consumers and the large number of offtakers. This complexity will complicate the due diligence process, requiring to assess demand profiles, collection rates, opportunities to improve billing and collection and assessment of late payments and the ability to sanction non payment and non performing debts (Delmon, 2010, p.45).

3.2.1 Tariff Design

Tariff is something that must be paid by User/consumers for using the services / facilities of an infrastructure project, for example the toll road tariff, electricity consumption tariff , water consumption tariff etc. The determination of tariff is important because it relates to the amount of revenue will be received (In-Cash Flow) which will be used to pay all obligations to the lender / investor. Tariffs need to balance a number of objectives (Asian Development Bank, n.d, p.58) :

- Stipulated service standard and associated costs,
- Customers' willingness and ability to pay,
- Resulting cost recovery,
- Required economics (return on investment) for private operator, and
- Need for/availability of subsidies.

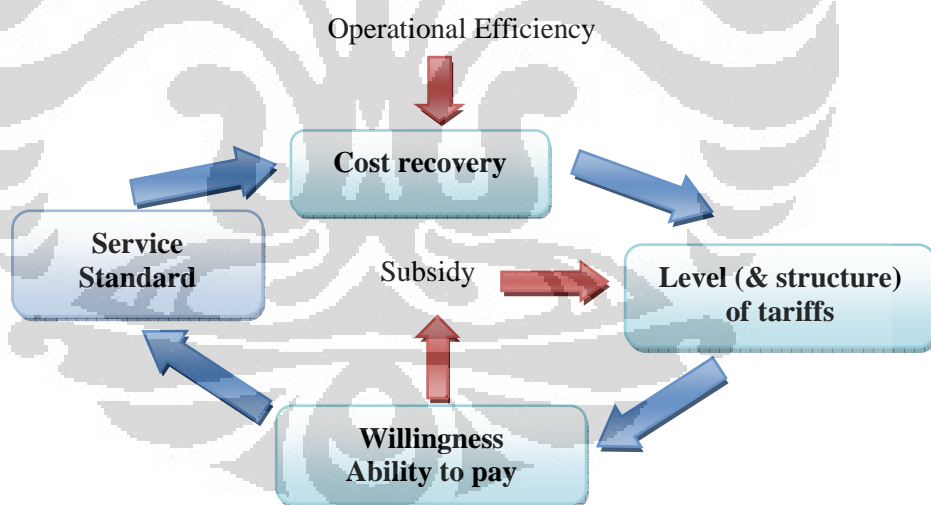


Figure 3.1 The Iterative Process of Designing Tariffs

Source: Heather Skilling and Nils Janson. 2006 / Asian Development Bank (n.d, p.58)

3.3 Factors Contributing to the Capital Structure

Normally, the responsibility of financing infrastructure projects is the government sector. But, with the use of PPPs the responsibility has often been transferred to the private sponsor. Regardless of the government or private sponsor's role in the financing of a project, who will finance and how much debt relative to the amount of equity used will depend on a number of factors. (UN ESCAP, n.d, p.17)

➤ Project Cycle and Cash Flow.

Some sponsors may be required to provide a significant amount of equity capital at the beginning of a project during the construction phase when the risk is high. Once the construction is complete, the construction risks associated with it have been overcome, and the cash flow begins to materialize, the expensive equity or debt capital can be refinanced using cheaper debt capital thus lowering the total cost of capital.

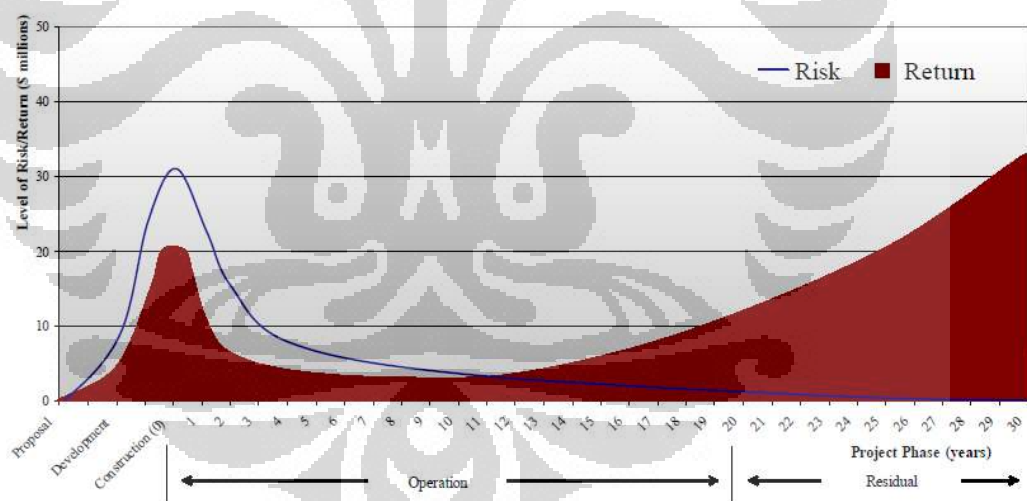


Figure 3.2 Typical Project Risk / Return Profile

Source : http://ncppp.org/councilinstitutes/texas_presentations/howard.pdf

➤ **Taxes**

Project sponsors need to consider tax implications when assessing the debt and equity mix as it can impact the cost of capital, earnings, and the source of capital. Interest on debt, if tax deductible, can substantially reduce the overall cost of capital, an combined with the fact that the cost of debt is less than the cost of equity there is an incentive for sponsors to use debt instead of equity to finance projects.

Box 3 - 1
Debt versus Equity – Impact to the Income Statement

Consider two projects worth \$100 million. One is financed using 60% debt financing the other only 10% debt.
Assuming a cost of debt capital of 10% and a 20% tax rate, the income statement may look something like this:

	Project A 60% debt / 40% equity	Project B 10% debt / 90% equity	Project C Tax-free Holiday 10% debt / 90% equity
Revenue	100	100	100
Expense	80	80	80
EBIT	20	20	20
- Interest	6	1	1
EBT	14	19	19
- TAX	2,8	3,8	0
Net Income (EAT)	11,2	15,2	19
ROE = (EAT/Equity)	28%	16,8889 %	21,111111%

Source : UN ESCAP (n.d, p.19) “ has been reprocessed”

Project A, has lower net income, but offers its shareholders a return on equity (ROE) of 28% whereas Project B shareholders have a higher net income than Project A, but a larger tax expenditure and a more modest

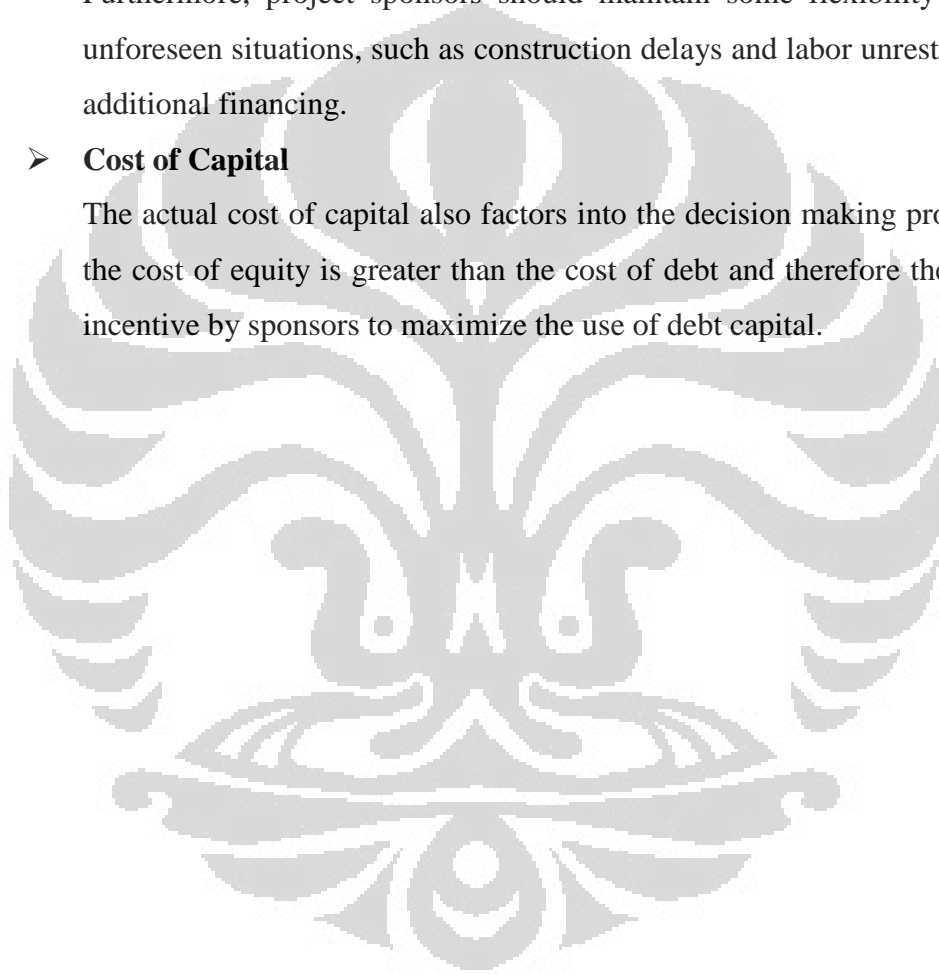
16.89 % ROE. However, Project B's ROE increases to 21.11 % with the benefit of a tax-free holiday.

➤ **Financial Risk and Flexibility**

The risk with having too much debt is that a project with fluctuating cash flow may be forced into default if the debt covenants are not met, even though the project may still be financial profitable and cash flow positive. Furthermore, project sponsors should maintain some flexibility in case unforeseen situations, such as construction delays and labor unrest, require additional financing.

➤ **Cost of Capital**

The actual cost of capital also factors into the decision making process, as the cost of equity is greater than the cost of debt and therefore there is an incentive by sponsors to maximize the use of debt capital.



3.4 Project Finance Structures.

Project funding can be obtained from various sources, there are three sources of funding for infrastructure projects are the most common the following.

3.4.1 Public Finance

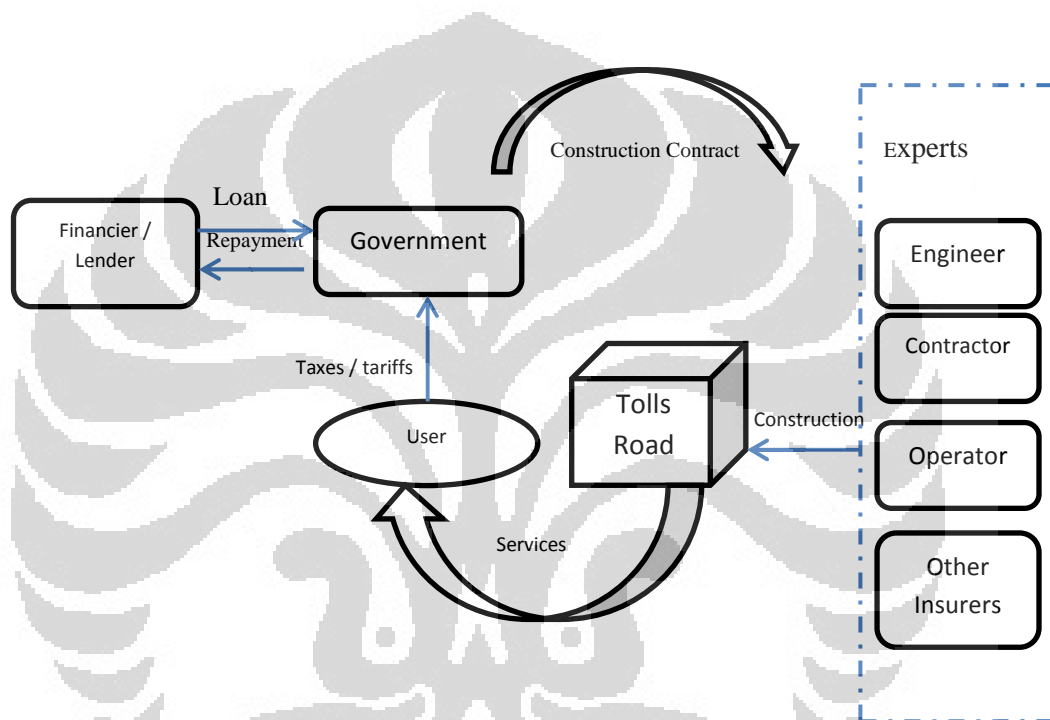


Figure 3.3 Public Finance

For years, many government funded projects by using existing surplus funds or issued debt (governments bonds) to repay over a specific period. Government have increasingly found this funding to be less attractive, as it strained their own balance sheets and therefore limited their ability to undertake other projects. The government borrows money it allocates to the project through the reallocation of loans, grants, subsidies or debt guarantees. The state can generally borrow at interest rates lower than the rates offered to other borrowers, but its action is limited by its budget flexibility (the amount it can borrow). A government

borrow funds to finance an infrastructure project and repayment with taxes/tariff a paid by user. Financier / Lender analyze governments total ability to raise funds through taxation and general public enterprise revenues, including new tariff revenue from the project. Because it requires special expertise in the construction of infrastructure, usually the government will submit to the expertise in the construction of infrastructure through the construction contract.

3.4.2 Corporate Finance.

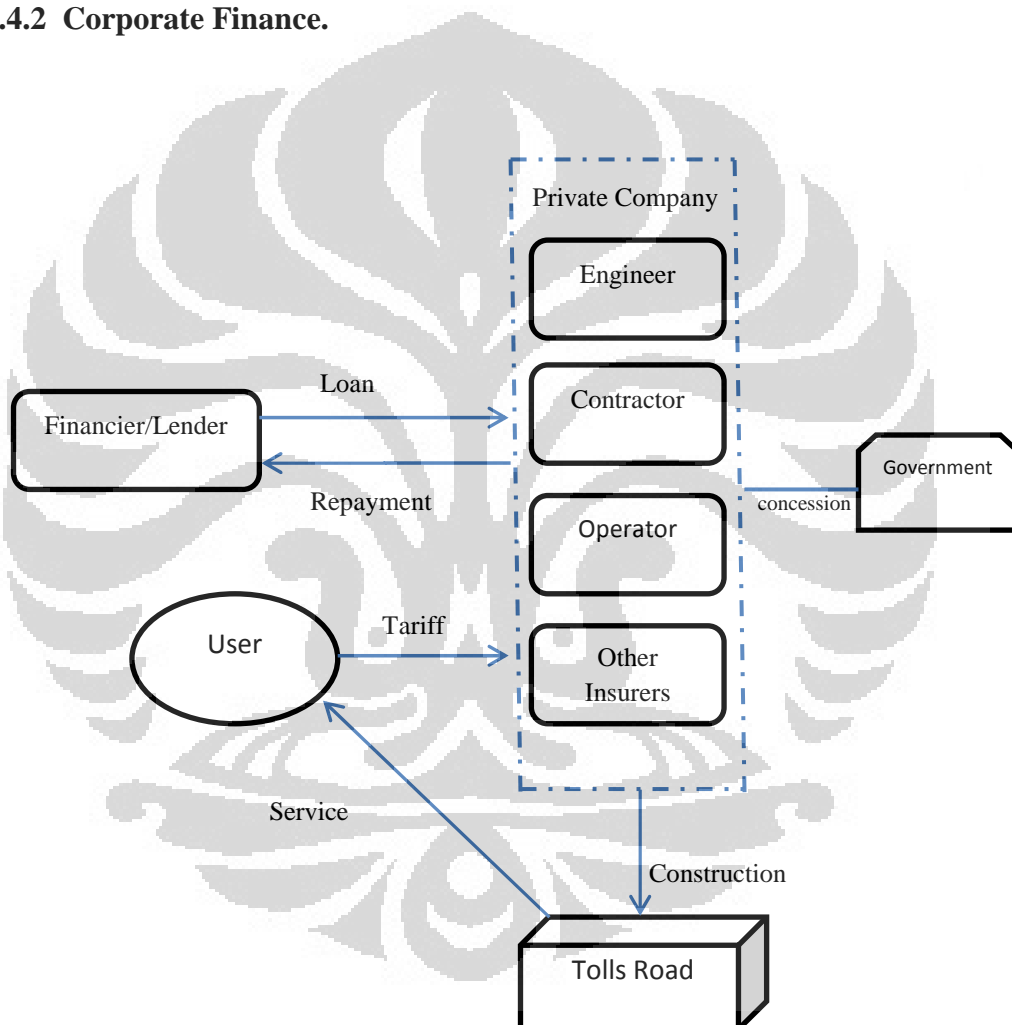


Figure 3.4 Corporate Finance

A company borrows funds based on its credit profile and its business and investing in the project. A private company borrows funds to construct infrastructure facility and guarantees to repay lenders/financier from its available

operating income and its base assets. The company may choose to contribute its own equity as well. In performing credit analysis, lender/financier look at the company's total income from operations, its stock of assets and its existing liabilities. Private company is usually also have the expertise for the construction of infrastructure. Private Company gets infrastructure projects from government through concessions.

3.4.3 Project Finance with Public Private Partnerships

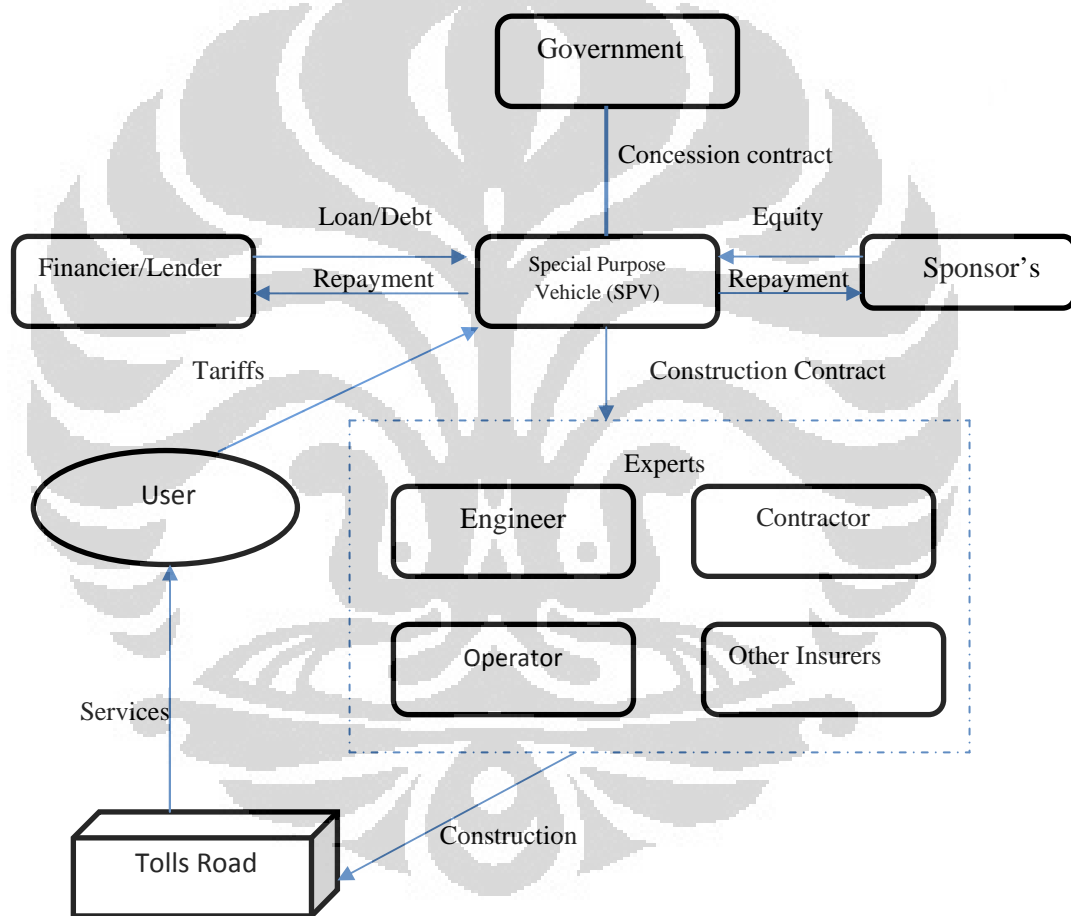


Figure 3.5 Project Finance With PPPs.

Source : UN ESCAP (n.d, p.4) “ has been reprocessed”

The objective of using project financing (Project Finance with PPPs) to raise capital and to limit the stakeholders risk by diverting some risk to parties that can better manage them. In project financing, an independent legal company/vehicle is created (often called “ *Special Purpose Vehicle* “ (SPV)) to raise the funds required for the project. The newly created company usually has minimum equity required to issue debt at reasonable cost with equity generally averaging between 10% and 30% of the total capital required for the project. The investors, in both debt and equity require certain basic legal, regulatory and economic conditions throughout the life of project. The projects revenues are obtained from government and/or fees (tariffs) charged to the users of the service. In some project, the private sector provider also pays concession fees to the government in return for the use of the government’s assets and/or the rights to provide the service.

The Project Financing PPPs structure helps facilitate the cooperation and allocation of resources and risks among those who are best able to manage it. Thus, depending on the project, the Special Project Vehicle (SPV) may choose, or be asked, to provide one or more services ranging from the design, building, and/or operating of a project from the expertise.

- **Government:** the government has contributed equity, in exchange for shares in the SPV; they have equal rights and equivalent interests to the assets within the SPV as other shareholders.
- **Special Purpose Vehicle (SPV) :** creation of a separate commercial venture called a *Special Purpose Vehicle (SPV)* is a key feature of PPPs. The SPV is usually set up by the private sponsors(s) who, in exchange for shares representing ownership in the SPV, agree to lead the project and contribute the long-term equity capital. The SPV is a legal entity that enables the coming together of many different parties and facilitates the allocation and diversification of risk and financing requirements to more than one party. From a legal perspective, it is the SPV that undertakes the project and therefore all contractual agreements between the various parties will be negotiated between themselves and the SPV.

- **Lender / Financier:** special purpose vehicle (SPV) borrows funds from lenders. The lenders look to the projected future revenue stream generated by the project and the project company's assets to repay all loans.
- **Sponsors:** the equity financing will generally be provided by the private sponsors, in exchange for ownership in the SPV. Project financing, unlike traditional lending, is based on the financial strength of a project with little or no recourse back to the sponsor(s), thus the specific risks of that project remain separate from the existing business of the sponsors.
- **Experts:** the Special Project Vehicle (SPV) may choose, or be asked, to provide one or more services ranging from the design, building, and/or operating of a project from the experts.
- **User:** it is important that they be well identified in order to accurately assess who will be paying for the services, how they are to benefit, and what their success criteria are.

3.5 Financial Appraisal to Evaluate the Feasibility Project

This section will address that challenge and provide a review of the basic steps necessary to develop and assess the financial viability of a project including the development of a cash flow model, financial indicator, and sensitivity analysis

3.5.1 Cash Flow Model

The first step in completing a financial appraisal is the development of a cash flow model. Cash flow models can be very simply or incredibly complex depending on the type and size of the project. The following components to the development and analyses of cash flow model - Capital Investment, Net Cash Flows, Terminal Cash Flow, Discount Rate, and Assumptions (UN ESCAP, n.d, p.25).

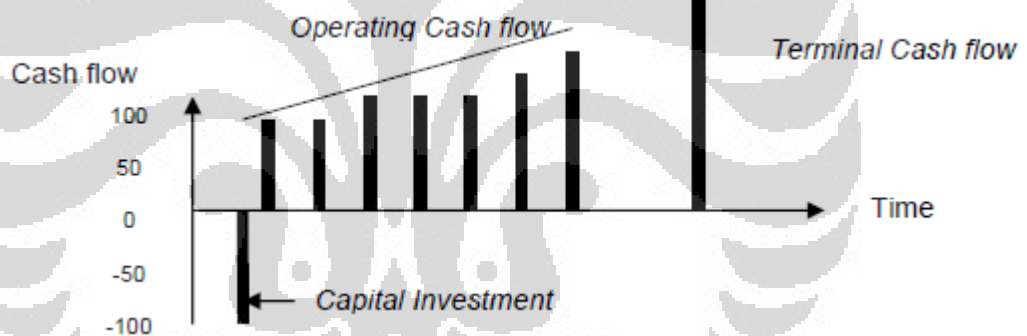


Figure 3.6 Cash Flow Model

Source : UN ESCAP (n.d, p.25)

- **Capital / Initial Investment.**

The amount of money paid out or received at the start of a project or investment. This is generally a negative amount because projects often require a large initial capital investment by a company that will generate positive cash flow over time. the investment costs for an infrastructure project usually include:

- Buildings and civil works
- Land and site development costs
- Plant and machinery

- Technical and engineering fees.
- **Operating Cash Flow.**
The cash generated from the operations of a company, generally defined as revenues less all operating expenses, but calculated through a series of adjustments to net income.
- **Terminal / Residual Cash flow.**
The cash that is generated from the sale or transfer of the project's assets upon termination or liquidation. It can generally be quite difficult to estimate the value of capital assets due to wear and tear, changes in technology, inflation, and demand. In the case of a PPP the residual or transfer price will be negotiated ahead of time.
- **Discount Rate.**
The interest rate used in discounted cash flow analysis to determine the present value of future cash flows. The discount rate takes into account the time value of money (the idea that money available now is worth more than the same amount of money available in the future because it could be earning interest) and the risk or uncertainty of the anticipated future cash flows (which might be less than expected).

Box 3-2

Weighted Average Cost of Capital (WACC)

The WACC is used as the discount rate when assessing the net present value of a project's future cash flows.

The following example compares the weighted cost of capital, when only equity financing is used compared to when both equity and debt capital are used but the tax benefits are not factored in, and when both equity and debt capital are used but the tax benefits are factored in.

Cost of Debt 8%

Cost of Equity 20%

70% of project costs are financed with debt and 30% with equity

Corporate Income Tax Rate = 25%

WACC equity only = $(20\% \times 100\%) = 20\%$

WACC without tax benefit = $(8\% \times 70\%) + (20\% \times 30\%) = 11.6\%$

WACC with tax benefit = $(8\% \times 70\% \times (1-25\%)) + (20\% \times 30\%) = 10.2\%$

Source : UN ESCAP (n.d, p.27) "has been reprocessed"

- **Assumptions.**

In the infrastructure projects assumptions must be made in order to estimate future cash flow. Depending on the project, assumptions can include:

- Interest rates
- Inflation rates
- Rate of tariff increase
- Traffic projections
- Construction time
- Depreciation schedule
- Tax structure
- Physical life of the assets
- Technological life of assets

3.5.2 Financial indicators

When the cash flow model has been developed, a some of financial indicators are used to assess the financial viability of a project as well as alternative financial structure for its implementation. Some of the commonly used indicators are :

- **Net Present Value.**

The Net Present Value (NPV) of a project is the sum of the all future cash flows discounted to present value. If NPV equal to 0 signifies that the financial benefits of a project are enough to recoup the capital investment. If NPV greater than 0 implies that the project will earn excess returns, and the project can be accepted. Should the NPV be less than 0, this implies that the financial benefits are not enough to recoup the costs of the project and the project will be rejected.

- **Internal Rate of Return.**

It is the discount rate at which the net present value of the cash flow of a project is zero. If the financial IRR is less than the cost of capital, it implies that the project would lose money. If the financial IRR is higher than the cost of capital the project is considered economically viable.

Box 3-3						
NPV and IRR						
Period	0	1	2	3	4	10
Net Cash Flow Before Financing	-50000000	10 000 000	10 000 000	13 000 000	13 000 000	22 000 000
Discount Rate (WACC)	10 %					
Discounted Value	-50 000 000	9 090 909	8 264 463	9 767 092	8 879 175	8 481 952
Net Present Value (NPV)	33 746 613					
Internal Rate of Return	0,10843	11%				

The NPV of this 10 year project, assuming a discount rate of 10%, is equal to 33,746,613, which means that the project's cash flow will be sufficient to recoup any capital investments. IRR 11% is higher than cost of capital 10% the project is considered economically viable.

- **Payback Period.**

It is the length of time needed to recover initial investment on a project. It may be determined using either discounted cash flow or non-discounted cash flow.

- **Cost-Benefit Ratio Analysis**

A cost-benefit ratio analysis as a means of evaluating all of the potential costs and revenues that may be generated if the project is completed. The

outcome of the analysis will determine whether the project is financially feasible, or if another project should be pursued.

- **Return on Equity:**

It is the net income earned on an equity investment. It measures the investment return on the capital invested by shareholders and should not be less than the expected return on equity.

- **Annual Debt Service Coverage Ratio.**

It is a measure that calculates the cash flow for a period in relation to the amount of loan interest and principal payable for that same period. The ratio should be (at the minimum) equal to or greater than 1 as the same demonstrates that the project is earning enough income to meet its debt obligations. It is an important criterion used by financiers to monitor financial performance of a project.

	Period					
	0	1	2	3	4	5
Cash flow available for debt servicing (CF)	0	10 234 567	10 345 678	13 000 000	13 450 000	14 670 000
Debt Service (DS)	0	8 790 000	9 000 000	11 345 678	11 456 000	11 567 000
ADSCR = (CF/DS)	0	1,16	1,15	1,15	1,17	1,27

At a minimum, the ratio should be equal to 1 as that demonstrates that the project is earning enough income to pay its debt obligations.

- **Sensitivity Analysis.**

Will show the potential impact to a projects cash flow and financial statements, based on changes to various inputs. A sensitivity analysis helps to test those assumptions and develop “worst case” scenarios. (UN ESCAP, n.d, p.34)

A sensitivity analysis will consider how changes in:

- Concession Life
- Length of construction period
- Amount of capital subsidies, if any
- Amount of fixed annual operational subsidies, if any
- Structure and cost of capital
- Traffic projections or annual growth rates
- Inflation Rates
- Interest rates

Will impact:

- Construction costs
- Revenue
- ROE
- Operating costs
- NPV

3.6 Feasibility Studies

Based on financial appraisal composed feasibility studies to determine the economic feasibility of an infrastructure project. The economic feasibility study of a project is an estimate of the potential profitability of that project, or a study that measures the expected benefits from a certain project relative to its cost Lender / Financier , sponsor, SPV and government build their decisions to proceed with and/or finance any project based on the results of the feasibility study of that project. Ensuring the validity of economic feasibility studies of infrastructure project is a vital step in PPPs project. The structure of a feasibility study can be divided into the following stages (Hyari, Kandil, 2009, p.66)

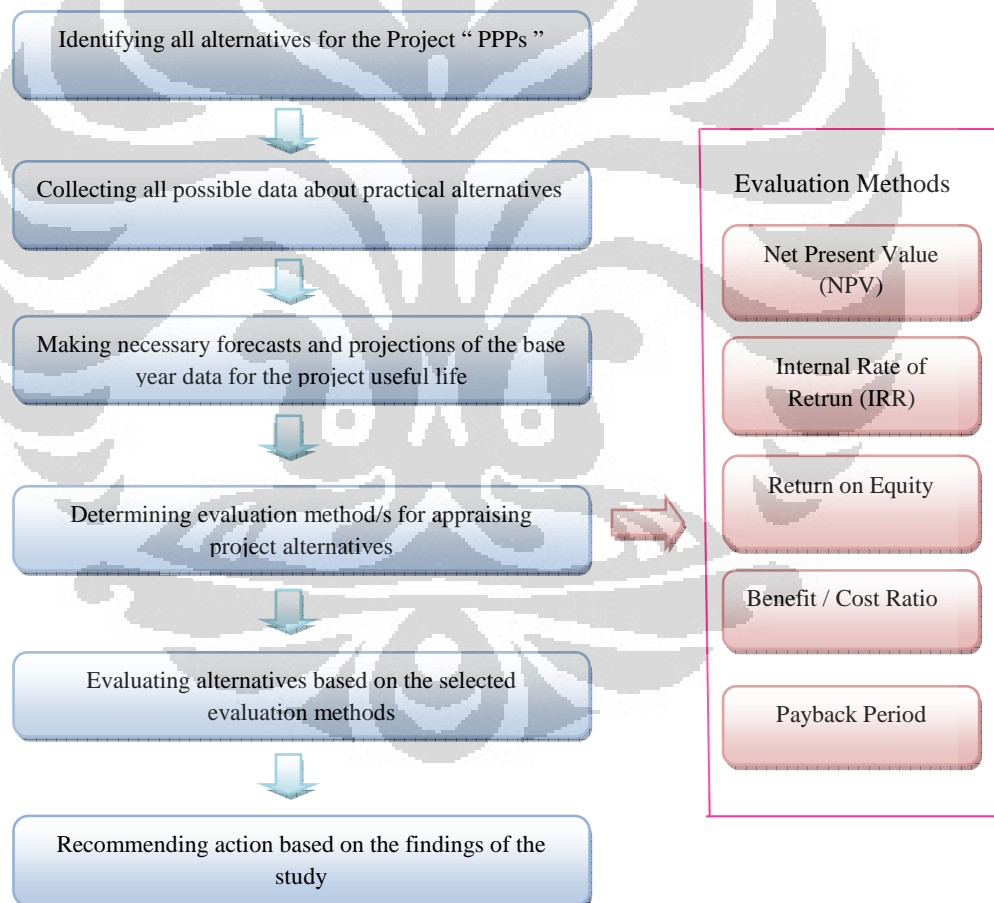


Figure 3.7 Structure of Feasibility Studies

Source : Hyari, Kandil (2009, p.68)

- Identifying alternatives for the Project “ PPPs ” .This involves considering all possible alternative to the project under “ PPPs” , such as composition of capital (how many debt from the lender , how many equity from the sponsor) , model of PPPs, how long time concession and others.
- Collecting all possible data about all alternatives.This includes estimates of the construction cost
- Making the forecasts and projections of the base year data for the project useful life. This part including estimates of future cost that are expected to be incurred during the life cycle of the project and also forecasts of benefit that are expected during the operating phase of the project.
- Determining evaluating methods for appraising project alternatives .The most simple and used evaluation method to determine the feasibility of infrastructure projects is the benefit-cost ratio analysis.
- Evaluating alternatives based on the selected evaluation methods.This stage involves performing discounted analysis for the developed cash flow that represents benefits and costs over the lifetime of the facility .The main used in the analysis to verify the financial viability are
 - Net Present Value (NPV)
 - Internal Rate of Return (IRR)
 - External Rate of Return (ERR)
 - Benefit – cost ratio
 - Payback period

Recommending action based on the findings of the study.The project is considered economically feasible and recommended when

- The benefit is higher than the cost.
- The profitability of that project is higher than of other alternative.

CHAPTER 4 SUCCESS FACTORS AND CONSTRAINTS ON PUBLIC PRIVATE PARTNERSHIPS

The public private partnerships projects is a complex project, involves many stakeholders. Not only limited in financial calculation to achieve project success needed support and commitment of each party to achieve project success. The following indicates what is considered to be the critical success factors of PPPs Project (AECOM Consult Inc , 2007) :

➤ **Appropriate Risk Sharing and Rewards.**

Flexibility or risk-sharing in the PPPs contract can have a significant impact on the bid prices provided by private sector teams, with both approaches likely to result in a lowering of the bid prices received. However, it is imperative that the risks are shared appropriately with associated rewards. There is a need to identify the types of risks, the party best addressed to mitigate the risk and the premium required to compensate for the risk. An in appropriate transfer of risks potentially will result in a significant increase in the premium demanded by the private sector and the probability of provider default.

➤ **Effective Working Relationships among Partners During/After Contract Negotiations.**

Willing public and private sector partners with mutually complementary interests. New business relationships are required when PPPs approaches are used to deliver projects, often with larger national or international firms that can handle the increased risk and responsibility of a PPPs contract. This, in turn generates competition and fairness concerns, both for the government (which must worry about attracting a sufficient number of bids for the contract) and for smaller contractors (who may feel unable to compete in the new environment). In addition, the scope and complexity of negotiations between the government and its contractors can increase significantly, as the allocation of risk, the acceptable rate of return, and the contract incentives must be carefully defined.

➤ **Legal Authority.**

The legal authority to use PPPs to expedite delivery of a needed project is based on prevailing statutes and regulations established by the responsible legislative bodies and regulatory agencies, giving the sponsoring agency and private provider the legal authority to advance the project in a timely manner, free of significant legal challenge.

➤ **Political Leadership**

A successful partnership requires strong political leadership. Senior public officials must be willing to be actively involved in supporting the concept of PPPs. Officials need to be well informed with respect to potential benefits. A political leader can play a critical role in minimizing misperceptions about the value to the public of a PPPs and serving as a highly visible champion for the project.

➤ **Stakeholder Consultation and Support.**

Stakeholder consultation increases in importance if the potential impacts affect employees and the community. Experience with respect to PPPs has shown that there are misconceptions of PPPs, in particular, the perception that PPPs seek to privatize public assets. Stakeholder consultation should be used to understand opinions and address misconceptions about the proposed PPPs and its value to the public.

➤ **Limited Complexity.**

PPPs arrangements should be kept as simple as possible. Complexity of a PPPs may result in higher transaction and monitoring costs and fewer bidders.

➤ **Secure Public Control.**

In a situation where contracts are not complete, Government should ensure that it has some recourse rights to maximize the opportunity to resolve and take control if the private partner defaults on its obligations to ensure the continued delivery of services to the community. Recourse rights are particularly important where contract arrangements are incomplete.

➤ **Public Sector Involvement.**

Once a partnership has been established, the public agency sponsoring the project must remain actively involved in the project. Ongoing monitoring of the performance of the partnership is important in assuring its success, particularly with respect to safety and maintenance. The nature and frequency of monitoring should be stipulated in the contract.

4.1 Different Perspective in Public Private Partnerships Project

The stakeholders to PPPs projects have different perspectives for participating in the projects. Public entities are more conscious of the need for investment in infrastructure as it has spillover effects with wide spread social and economic costs and benefits. However, allocation of budgetary resources in building the infrastructure is constrained by the need for huge investments in social and economic development projects. Governments are motivated to procure infrastructure projects through PPPs route in view of their desire to reduce sovereign borrowings, leverage the scarce budgetary resources, bring in efficiency in the erst while inefficient public procurement system, and the consideration of benefits due to sharing of the financial risks and rewards between public and private sectors (Grimsey and Lewis 2002).

The private partners in the public private partnership have a different perspective from those of the public partners, the two key players constituting the private sector can be broadly classified as investors and lending agencies. They are more focused on gains that can be expected from the construction and operation of the projects. The lenders look at the higher returns that can be achieved by investing in infrastructure projects in comparison with other investment avenues. There is also a difference in perspectives of the investors and lenders. Investors are more focussed on the opportunities associated with the project while lenders are more concerned with the down side risks of the project. (Hans, Kalanindi, Yu and Singh, 2009, p.27)

According Ogunlana and Abednego (2009, p.52) Government and private perspective on project success are as follows :

4.1.1 Government Perspective on Project Success

The factors that are considered to have significant impact in determining the success of a project are as follows:

➤ **Functionality of the end-product**

The owner consider it to be successful if the product is functioning accordingly to its planned purpose which is to provide service and satisfaction for its end-users.

➤ **Good coordination.**

Good coordination between government and private entities is essential in ensuring an effective and efficient project development process.

➤ **Proper project financing strategy.**

To reduce any financial problems that may occur during the construction process, it is necessary to plan, develop and apply the most suitable financing strategy.

➤ **Project quality achievement and on-time project completion.**

These two factors are considered as the basic and standard value in assessing project and to determine whether the project can be considered as a success in general terms.

➤ **Government total support.**

It is in the form of unbiased and non-discriminative policies, laws and regulations. The government is also expected to provide reliable information regarding the national infrastructure network development plan, so that a more accurate project estimate could be produced and used for preparing a more proper project plan.

➤ **Trust.**

The trust must transpire between all of the involved parties. With respect of this particular project, a sense of trust was developed between the government and financial institutions which is shown through the formulation of the Letter of Comfort.

➤ **Good system for contractor selection.**

Selecting the most capable contractor to perform the construction works must be done carefully, thus the requirement of a good assessment and selection system.

➤ **Information dissemination and communication system.**

All information related to the project must be distributed to the right party at the right time; therefore, it is necessary for the project to have a suitable communication system to accomplish this objective.

➤ **Compelling managerial capabilities.**

Compelling managerial capabilities of the human resources involved in the project. Such managerial capabilities would enable key decision makers, whether that is the owner of the project, the contractors or the other parties involved in the project, to make the most appropriate decision at the right time. Nevertheless, such level of managerial capabilities could be achieved through continuous managerial training for example training courses and on the job training.

➤ **Continuous project monitoring and control.**

The government believes that continuous monitoring the project's work progress, constant control of all the resources required for the project and maintaining a constructive interaction within the project would also provide significant contribution for achieving project success.

4.1.2 Private sectors perspective on project success.

The factors that are considered by the private sectors to have significant impact in determining the success of a project are as follows:

➤ **Profit (Financial achievement).**

Private Sectors are business oriented companies, profit gaining is considered as the most important element in determining the success of any kind of project.

➤ **Project quality achievement and on-time completion.**

Similar to the governments perspective, the private sector also consider these two factors as the basic and standard value in assessing a project and to determine whether the project can be considered as a success.

➤ **Government support.**

The government to provide total support to ensure project success. Examples of these supports can be in the form of government policy that would streng then the partnership between the government and private sector, government regulations that have the ability to monitor and control the stability of construction materials and other laws/regulations that are unbiased and non-discriminative which are able to facilitate the private sectors in ful filling their responsibilities.

➤ **No political pressure.**

Political pressure from the government towards the construction process will not provide positive influence in any way.

➤ **Good coordination.**

Good coordination between the government and private sector is also considered to be one of the most important project success factors. In addition to that, although good coordination between the contractors and subcontractors as well as the suppliers is also necessary to increase the competition level within the project, however, lack of coordination between government agencies, especially between the central and local government, would create problems for the contractors during the construction process.

➤ **Experienced human resources.**

In order to be able to provide properly trained and experienced human resources for the project, private sectors require their employees to attend seminars and training to enhance their technical as well as managerial capabilities. However, if the private sector's does not have the required amount of skilled human resources available for a project, human resources outsourcing is generally carried out by the private sectors in

order to comply with the situation, as what happened in this particular project.

➤ **Community participation and support.**

The community around the project site also plays an important role in determining. The success of the project. The community provides the necessary elements for the project such as access roads, hard labor, standard daily provisions, and others.

➤ **Information dissemination and communication system.**

With the presence of a project director from the project owner, all of the required information was able to be distributed to the right party at the right time.

➤ **Equality and balance in terms of rights and responsibilities.**

The equality between the public and private sector is important because the expected profit from the project is very much dependent on a balanced partnership. Unfortunately, most of the times the government do not realize that infrastructure projects such as tollways are part of their own development program and not purely business development opportunity. Moreover, since the government requires assistance from the private sector, especially financially, the relationship between. the government and private sector should be more of a partnership instead of hierarchical which is mostly based on superiority. If the government focuses only on the business aspect in this kind of project, the private sector would also focus on the business aspect, thus ignoring the people/community who is actually the end-users of the product.

4.2 Constraints On Public Private Partnerships

After identifying the success factors in public private partnerships (PPPs), need to assess the potential constraints in PPPs. It is natural that certain barriers will exist, Important to recognise these likely impediments and to build in strategies to cope with them in order for the partnership to function effectively. According United Nations Development Programme (UNDP) Some potential constraints on PPPs are described below (http://pppue.undp.2margraf.com/en/05_2.htm) :

➤ Legislative and regulatory environment

Aspects of the broader legal and regulatory environment for services can act as significant barriers to the PPPs. For example, accounting laws and practices, laws governing construction contracts, public works laws and conventions and so on may be inappropriate for private sector participation. Where this is the case, such laws and practices should be reviewed carefully and, if necessary, amended or modified to accommodate and encourage private sector involvement.

Distortions in the overall incentive environment (the tax regime, import restrictions, labour laws, along with banking, foreign exchange and foreign investment restrictions) and excessive regulation and restrictions can also inhibit private sector participation. The cumulative effect of regulation is of profound importance. A single restriction or barrier may not constitute a particularly important impediment, but the cumulative effect of many even indirect barriers can be such as to deter the active entry of new firms to the market.

Therefore, before a particular partnership opportunity for the implementation of a project is approved, the service must be examined in detail to ensure that there are no legislative or regulatory barriers to the PPPs. If this step is ignored, significant investment in time and money can be spent developing a partnership only to find that it cannot proceed in the current environment.

➤ **Institutional constraints**

Institutions are central to partnerships – barriers that evolve at this level are often linked to the internal organisational and bureaucratic structure of the partners. Institutions that are focussed on the delivery of services often prioritise project activities ahead of partnership exercises. Thus an unwillingness to commit resources (including both funding and time) to partnership building – as opposed to project development – has proven to be an issue for many projects. Recognising a situation whereby resources can be pooled specifically to further partnership development can help address this.

➤ **Financial constraints**

• **Private Financing**

- Private sector financing may not be able to compete with public sector financing for the type of service or project being considered (in such cases, public financing or borrowing could be a better option).
- The project might not be financially self-sufficient.
- The support (co-financing, subsidies, supplies, equipment), which the private sector expects from the government, might not be available; this would make the financial costs prohibitive for the private partner.

• **Public Financing**

- The public sector may provide subsidies where it is politically impossible to raise tariffs. Here there is a need for multi-year budget appropriations, which can increase the perceived risk of the project, particularly if there is no history of PPPs in a country.
- Where the public sector acts as a commercial counterpart, contractual commitments need to be with credit worthy state entities. For entities that are not credit worthy, support from an appropriate entity within government in the form of a guarantee or a direct agreement will be needed.

- **Capital Markets**

- The domestic capital markets could be weak and unable to provide long-term financing for infrastructure projects that have long pay-back times.
- International capital markets, on the other hand, are sensitive to exchange rate fluctuations.

- **Contract-related constraints**

- **The danger that bidding may fail to be competitive**

The provision of most basic services requires specialised expertise, so there may be very few competitors because of a scarcity of the requisite skills. There is also always a danger of collusion between bidders, especially if they are few in number and/or if the bid is taking place in a country that does not have a history of competitive markets

- **Lack of a cost benefit analysis**

One of the keys to political motivation is cost. The government tries to provide services of the highest quality at the lowest cost. It is therefore essential that a cost-benefit analysis be carried out which itemises all costs and benefits and enables a proper comparative assessment of alternative delivery approaches. Such a study should compare operator performance with international benchmarks. Accurate cost information will strengthen the municipality's position whatever the findings of the analysis. If private sector costs are indeed found to be high, the council will be in a strong position to negotiate. If they are found to be low, this knowledge will create a more receptive and conducive operating environment in which a more appropriate contract can be developed

- **Contract size**

Smaller contracts often contain a number of limitations. For example: they offer fewer possibilities to exploit economies of scale; average household income tends to be lower than in large municipalities, so restricting returns; municipal capacity is inevitably weaker than that in

large cities, and the system itself is often relatively complex and divided for such a small population.

- **Transaction and bidding costs**

Projects involving the private sector typically incur high transactions costs. These costs amount on average to some 5 to 10 per cent of total project costs. This can be a prohibitive factor and since the burden of these high transaction and bidding costs will eventually trickle down to the taxpayers, the onus is on the various institutions responsible for awarding these projects to keep these costs down.

- **Capacity constraints**

- **Strategic understanding of public-private partnerships**

The most significant capacity constraint is usually with respect to the strategic understanding of public-private partnerships. Training in PPPs and exposure to the development of PPPs elsewhere in the region is likely to result in a broader understanding of their potential in terms of social and institutional aspects in the municipal context; such training will also aid understanding of the implications of long-term partnership arrangements.

- **Difficulties in contract specification and administration**

Difficulties in contract specification also underline the need to include in contracts clauses allowing both parties to renegotiate terms in the event of significant unexpected changes. Such difficulties also highlight the importance of parties to the partnership being able to count on a capable and independent judiciary or other mechanism to arbitrate disputes between the government and the utility.

- **Lack of tendering and contracting capacity**

Two of the obstacles to the wide adoption of contracting arrangements are lack of experience in development of contract conditions and lack of data and guidelines upon which contract specifications should be based. In order to overcome these difficulties, governments in several countries provide their officers with advice about different contractual

arrangements, such as a list of standard specifications that should be built into contracts.

The basic principle of PPPs – the provision of value for money for public services – can only be satisfied when a fair and transparent procurement process is in place. Many government officials have little experience in negotiating and managing concession contracts, which can lengthen the contract award process and increase the costs of bidding. Decision makers might also lack the confidence to renegotiate the contract such that it meets the redefined objectives of the municipality

- **Financial analysis and planning**

Another fundamental constraint to the effective implementation of a contract could be a lack of financial analysis and planning on the part of the municipality specifically in relation to the services under consideration. The reason for this lack of analysis of the PPPs might stem from a narrow understanding on the part of the contract itself – that is, it is inflexible – and a strong view amongst the local governments financial team that such an exercise would be pointless. A comparison with international benchmarks could be of use where this is the case.

- **Community capacity**

It is necessary to strengthen community structures and processes and to expedite the setting up of ward committees under the harmonized legislation to support community mobilisation for the project.

- **Public sector experience**

Although the international investment community has a strong interest in PPPs, investors are unwilling to invest if the returns do not provide sufficient compensation for the perceived level of risk. One of the greatest risks is uncertainty as to how the government will react as a counterpart. Ideally, the confidence of prospective investors can be built up if a period of macroeconomic stability can be combined with

regulatory and structural reforms. Nonetheless, in markets where there is a limited history of private investment, governments may need to initially take on more risk as a means to demonstrate their commitment to reform. However, once there is one successful PPPs, other operators and financiers are usually willing to assume more risk, resulting in greater risk transfer.

➤ **Perceptions**

Despite the growing acceptance of public-private partnerships as a legitimate means of providing municipal services, a great deal of mistrust and misunderstanding continues to exist in all three sectors of the partnership – in the public and private sectors, and among community members. While education and communication may go a long way to reduce resistance, in some cases there may be insurmountable obstacles to a PPPs. These feelings may be prompted by :

- Philosophical differences
- A lack of understanding (due to differing professional language)
- Differences in organisational culture
- Previous experience with a “failed” partnership

➤ **Time frame**

Time frames relating to political (electoral) cycles may force authorities to resolve a service delivery problem using methods of project implementation that are more familiar than PPPs arrangements.

CHAPTER 5 CASE STUDIES ON PUBLIC PRIVATE PARTNERSHIPS PROJECT

The examination of case studies enables the confirmation of a number of key principles governing Public Private Partnerships (PPPs) development and application. This case study aims to learn the success and failure factors in a case of PPPs Project. Successful PPPs require an effective legislative and control framework and for each partner to recognize the objectives and needs of the other. Guaranteeing benefit from PPPs requires recognition of the relative strengths and weaknesses of each type of structure and the aims and objectives of each party.

5.1 Methodology

In this case will present successful and unsuccessful problematic cases as valuable lessons can be drawn from each situation. Although many factors that influence success and failure of a PPPs project, In evaluating this case study only using focus in two factors that influence the success / failure of a PPPs project.

The view of succes and failure as converses is commonly held. According to this picture, the two term are anonyms (e.g Allen, 1938), succes is at one end of a spectrum and failure is at the other.

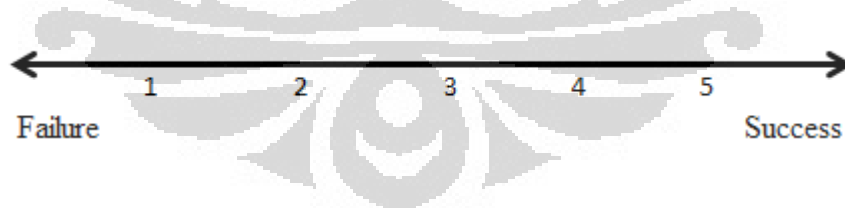


Figure 5.1 Success Failure Spectrum

In this analysis using two factors :

- Revenue (Actual/Forecast) / Revenue Risk.
- Responsibility transfer.

Assessment of each factor is as follows :

Factors	1	2	3	4	5
Revenue (Actual/Forecast)	0 < 20%	20% - 40%	40% - 70%	70%- 80%	80% <
Responsibility transfer	Full Public /Full Private	80/20 20/80	70/30 30/70	60/40 40/60	50/50 50/50

Scoring :

1 – 3 = Project is Fail

3 – 5 = Project is Success.

5.2 Case Study : Failed PPPs Project (M1 – M15 Motorway, Hungary)

Source : European Commission Directorate General Regional Policy (2004, p.93)

Tabel 5.1 Summary Project M1-M15 Motorway, Hungary

Case Study/Country	M1 – M15 Motorway / Hungary
Rationale/Objectives of the PPP	Realisation of two high priority section of motorway forming part of the Trans -European motorway network.
PPP Actors	ELMKA Rt., Ministry of Transport, EBRD and other lenders.
Financial Structure	Loans by private and domestic banks; lenders ensuring a 14 year loan maturity
E.U Ssupport ?	EBRD support
Contract Agreement between Parties	Concession (DBFO)
Risk Allocation	Risks mainly allocated to the private partner
Institutional/Managerial Structure	Government support
Tarif setting	Concessionaire free to set initial tariffs (tolls)
Strong Points	Attempts to achieve private sector efficiencies and incentives for the design, construction and operation of the motorway
Weak Points	Over estimated traffic forecasts and inadequate tender criteria

Background

As the level of State debt did not permit public financing, a PPPs approach was considered necessary for the realisation of non-recourse financing of 57 km of new motorway. Additionally it was judged that a PPPs allowed more rapid implementation, including earlier financial close, of the Project than would have been permitted in conventional public sector procurement and financing. The debt would also have a longer maturity than would have been possible at the time by the Government of Hungary acting on its own as a sovereign borrower, or as a guarantor of a Special Purpose Company.

The project consisted of the design, financing, building, operation and transfer (35 years after effectiveness of the Concession Agreement) of 43 km of motorway from Gyor to the Austrian border (M1) and 14 km of motorway linking the M1 to Bratislava (M15). This would have a semi-open toll collecting system with one main toll plaza and five tolling stations on three interchanges. The parallel, un-tolled country road was to remain unimproved. The traffic volume un-tolled was forecasted to amount to 25,000 AADT (annual average daily traffic), comprising 70% international traffic and 60% commercial traffic. The full traffic risk (volume and revenue) was transferred, without mitigation, to the private sector.

In contrast to other motorway schemes in Hungary, there was no support from the State other than in initial planning and site acquisition, whose costs were to be reimbursed in the form of profit sharing. The Concessionaire was free to set initial tariffs (tolls) at their revenue maximising level and thereafter to adjust them in accordance with agreed indexation provisions (HUF CPI inflation and adjustments for HUF/foreign currency exchange rate variations). The economic rationale for the Project was largely based on time savings to be realised by users (estimated at 20 minutes per full journey). There were no significant construction (ground or geological) risks as the terrain is flat without the requirement for significant structures to be constructed.

PPP Features

The principal parties involved were the Bureau for Concession Motorways, established by the Ministry of Transport in the Motorway Directorate in 1991, and ELMKA, Rt., a private sector company, comprising the international contractors and toll-road operator. The private party provided 19% of total financing required in the form of equity and shareholder funds. In addition, the Lenders were involved for Euro 329 million arranged by Banque Nationale de Paris (BNP), co-arranged with the European Bank for Reconstruction and Development (EBRD), and syndicated to 11 commercial banks. The Loan maturity was 14 years. At the time this was the longest maturity secured by Hungarian public or private borrower. Hungarian Forint financing amounted to HUF 12,000 million, arranged

and provided by the EBRD and Hungarian commercial banks and insurance companies, together providing 81% of total financing.

The PPP Process

The design and construction permit was secured by the Bureau for Concession Motorways in advance of the tender being initiated. Similarly the site had been acquired and paid for by the State. A two-part tender was launched in 1992 (in compliance with the Act on Concessions (No.XVI)), approved by Parliament in 1991. Four consortia were pre-qualified in August 1992. The best and final offers were received from two preferred bidders in January 1993. The Concession Contract was executed with a single preferred bidder in April 1993, effective in January 1994. The principal tender criteria was the level of tariff required by the Concessionaire, subject to meeting technical commercial and financial criteria specified in the tender documentation. A two-year construction period was required and the M1 opened to traffic in January 1996.

Actual Experience

Traffic volumes in the first full year of commercial operation amounted to 6,350 AADT, 46% of original estimates and ELMKA's total revenues were some 50% below forecasted levels. This reflected a significant diversion by many commercial vehicles to the un-tolled alternative route. Additionally the overall passenger car volumes were much reduced in part due to the development of large shopping centres within Hungary, removing the need for cross-border travel. Furthermore, delays in border crossing formalities for some users of 8 to 10 hours or longer, reduced the apparent value of the time savings potentially generated by the project.

In 1996 litigation proceedings were launched against ELMKA, amongst others by the Automobile Club of Hungary, contesting the fairness of the toll levels. The court ruled that toll rates were not consistent with the level of service provided. In consequence senior lenders suspended loan disbursements for the M 15 Project and construction was suspended. ELMKA experienced serious cash-flow shortfalls and defaulted on its loans in 1998.

Following the election of a new Government, the Concession was taken over by a special purpose public sector company in 1999 and the Republic of Hungary assumed debt service obligations, from January 2003. The loans were restructured to give an overall maturity of 20 years, reduced rate of interest and a reduction in the amount outstanding, (debt write-down) secured by a sovereign guarantee.

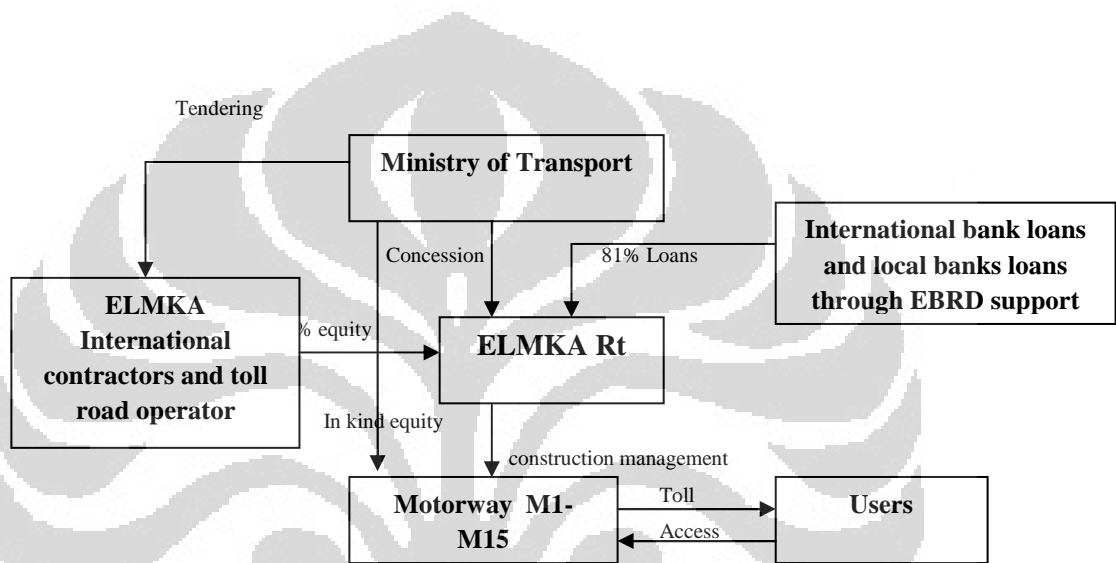


Figure 5.2 PPPs Structure of M1 – M15 Tolloed Motorway.

Conclusion .

PPPs Project of M1 – M15 Tolloed Motorway is failure .

Responsibility Transfer

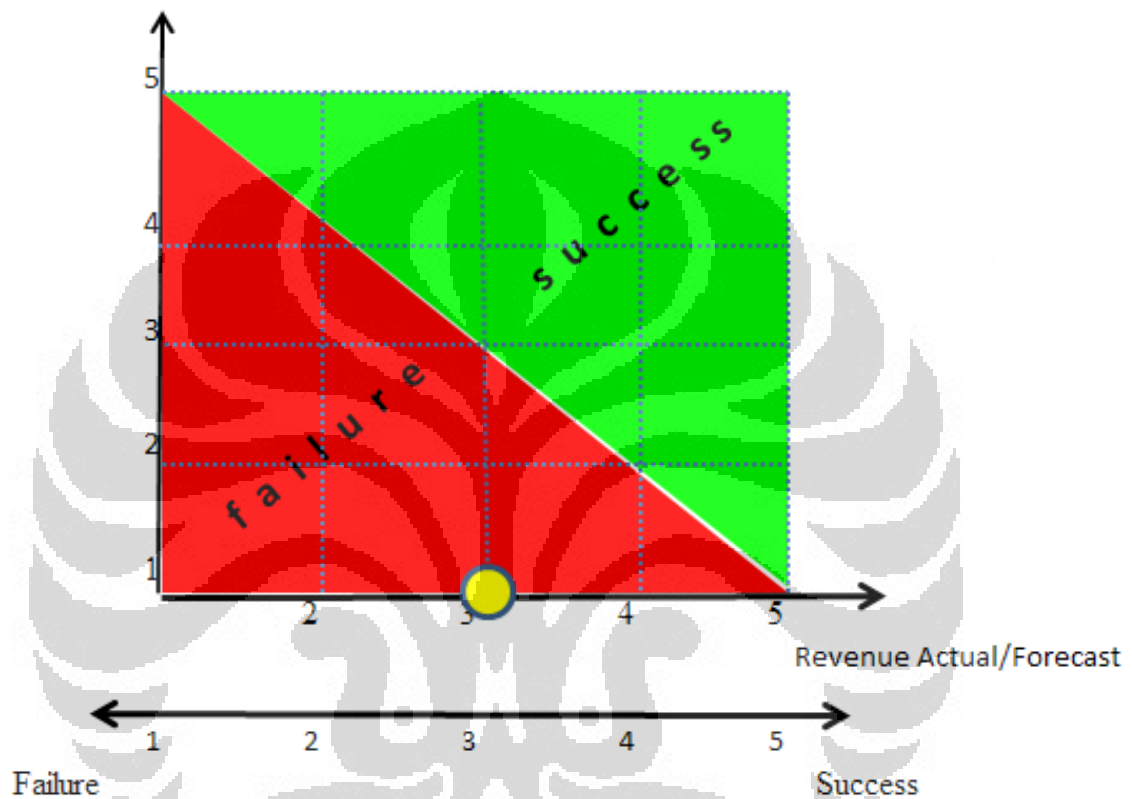


Figure 5.3 Conclusions Matrix of PPPs Project M1-M15 Tolloed Motorway

From this cases can be analyzed

- **Revenue Forecast / Actual = 3**

Traffic volumes in the first full year of commercial operation amounted to 6,350 AADT, 46% of original estimates and ELMKA's total revenues were some 50% below forecasted levels. The revenue below than forecast was caused by a number of factor :

- ✓ The existence of a parallel road without tariff.

- ✓ An too optimistic toll forecast: assessment of demand based on a public road and assumed high growth rates during the period of operation
 - ✓ Inefficient allocation of risks during pre-contract
 - ✓ Political instability caused by a change of government
- **Responsibility transfer = 1**

The full traffic risk (volume and revenue) was transferred, without mitigation, to the private sector . Revenue risk borne all by the private parties without any mitigation, this is very dengerous. In the case studies of M1 – M15 Tolloed Motorway during the early years of operation revenue does not achieve the an estimated, this causes disruption of the cash in-flows which eventually ELMKA Rt. can not fulfill its obligation paying the debt to the lender.

5.3 Case Study : Success PPPs Project (M5 Tolloed Motorway, Hungary)

Source : European Commission Directorate General Regional Policy (2004, p.96)

Tabel 5.2 Summary Project M5 Tolloed Motorway, Hungary

Case Study/Country	M5 Tolloed Motorway - Hungary
Rationale/Objectives of the PPP	Realisation of part of the Pan-European Transport Corridor IV under public funding constraints
PPP Actors	AKA Rt., Ministry of Transport, EBRD
Financial Structure	EBRD and commercial bank (Commerz bank and ING) loans plus EBRD guarantee
E.U Ssupport ?	None
Contract Agreement between Parties	Concession
Risk Allocation	All operational, commercial and financial risks are born by the private partner
Institutional/Managerial Structure	Government support; International consortia
Tarif setting	Provided in contract agreements, plus inflation/currency depreciation mechanism
Strong Points	The availability of the revenue shortfall mechanism provided a critical safety net
Weak Points	Uncertainty of traffic forecasts in a transport corridor without previous experience of tolling

Background

The 157 kilometre M5 forms part of the Pan-European Transport Corridor IV (Berlin-Prague-Bratislava-Budapest-Bucharest-Thessaloniki-Istanbul). It is the main link from Budapest to Hungary's Southern region and an important extension of the western and central European motorway network towards Belgrade and Bucharest.

Pre-qualification documents were released to private sector bidders in April 1992. Following the selection of three pre-qualified bidders in September 1992, a tender

was launched in 1993, leading to the selection of two preferred bidders in February 1994. A 35-year concession contract was signed with the successful bidder, a Special Purpose Company formed by a French-Austrian-Hungarian consortium, Alfold Koncesszios Autopalya Rt. (AKA). The main shareholders in AKA are the general contractors, Bouygues S.A. and Bau Holding AG. Financial close was delayed until December 1995 as a result of a requirement imposed by lending banks for a fresh traffic study. In turn, this led to a requirement to increase the revenue support arrangements available to the Project from the Hungarian authorities. The operating and maintenance services are provided to AKA by Maygar Intertoll Rt, a company fully owned by the South African toll road operator, Intertoll. The concession award was made in accordance with the local Concession Act XVI/1991.

The first Phase comprises the upgrading and rehabilitation of existing roads and the construction of approximately 90 kilometres of new highway. A semi-open tolling system was adopted with two main toll plazas and 8 toll barriers on interchange access roads. AKA was required to complete the construction of the second and third Phases of the Project by 2003. The second Phase comprises a 45 kilometres extension from Kiskunfelegyhaza to Szeged and the third a further 15 kilometre extension from Szeged to the State border.

PPP Features

The toll for passenger cars was set at HUF 5.00 per km in 1993 terms, and approximately at a four fold multiple for heavy goods vehicles. Discounts for residents and frequent users were agreed. AKA is permitted to adjust toll rates in accordance with Hungarian retail price inflation and with any devaluation of the Hungarian currency, should such depreciation exceed the inflation differential between HUF and the respective foreign currency in which AKA's external indebtedness is denominated.

Tabel 5.3 Financing Plan

Use Of Funds		Sources Of Fund	
ECU Million		ECU Million	
Construction	252,7	Equity	66,6
AKA Costs	46,9	EBRD "A"	52,0
Interest (during construction)	70,3	EBRD "B"	198,0
		HUF Loan	53,4
Total	370,0	Total	370,0

The EBRD "A" Loan is provided directly by the EBRD, whilst the "B" Loan is provided by commercial banks, arranged by Commerzbank and ING. However, the EBRD extends its preferred creditor status (ranking ahead of other lending institutions in the event of rescheduling or revenue shortfall, by virtue of its multilateral status). At the time the "B" Loan was the largest non-sovereign international commercial bank loan raised by a Hungarian borrower. Repayment of the loans is in the form of annuities, calculated on the basis of an 18 year maturity, but with final repayment due in Year13 as a "bullet" payment. The "bullet" payment corresponds to 55% of the initial principal amount. In order to achieve acceptance of this structure amongst commercial banks, the EBRD undertook to provide a guarantee of the final repayment.

A refinancing of all AKAs borrowings was undertaken in 2003, with the objective of extending loan maturity, taking advantage of lower prevailing interest rates, increasing gearing, (the amount of debt in the overall financing in relation to the equity) there by allowing the equity rate of return to investors to be enhanced. Subject only to the support arrangements and in particular the revenue deficiency facility described below, all operational, commercial and financial risks were placed on AKA. Thus, repayment of AKA's borrowings and the payment of dividends to AKA's investors are dependent on AKA's cash flow and profitability.

Experience to Date

Construction was achieved on schedule, or for some sections, ahead of schedule and within budget. In 1997, the first year of operations, the average daily traffic volumes at 7,700, were significantly below forecast levels and AKA was obliged to draw on the stand-by facility (cash deficiency / revenue shortfall fund) agreed with the Government. Following a proactive marketing campaign by AKA and traffic calming measures, implemented by the Government on competing routes, the requirement to draw on the Stand-by Facility in 1998 and in subsequent years was significantly reduced. The availability of the revenue shortfall mechanism provided a critical safety net to AKA, without which it would have found it self in default in the same way that the M1-M15 was unable to pay its debt service obligations.

As a result of the imposition of tolls on an existing road alignment, extensively used by domestic and international heavy goods vehicles, a significant amount of traffic in the corridor, (50% or greater in the first year of commercial operation), diverted to Route No. 50, an untolled road running parallel to the M5. Traffic volumes on Route No. 50 had increased by 30% in relation to the levels prevailing before the opening of the M5. The vehicles diverting to Route 50 comprised principally local residents and cross border truck traffic, especially from the Ukraine and Turkey. The increased noise pollution and safety hazard led to protests by local residents. Subsequently, following negotiations involving the Ministry of Transport, AKA, AKA's lenders and the relevant municipalities, it was agreed to implement traffic calming measures on Route No. 50 and to build by-passes. AKA was able to resist pressures to reduce the agreed toll rates on the M5 (in contrast to a similar situation prevailing on the M1 Motorway) but did agree to a programme of more substantial discounts for frequent and local users. Some users brought legal cases against AKA concerning toll rates in force but the courts rejected these complaints.

Government Contributions

Revenue Shortfall Mechanism. The Government of Hungary is obliged for the first six and a half years of commercial operations (i.e. until 2006) to provide AKA with compensation in the form of a subordinated loan facility, repayable after discharge of Project in debt edness to senior lenders, in theevent that AKA's actual revenues, for whatever reason, are below the levels in the Agreed Base Case.The total amount of the shortfall facility is capped at HUF 9,000 million in 1993 terms (approximately EUR 50 million).

The Concession Agreement provided for the Government to contribute at no cost the following: then preliminary design for the Project, building permits and environmental clearance, land acquisition and such roads and motorways that are already in existence and traffic calming measures on competing roads. In return for the above in-kind and financial contributions the Government will be reimbursed through a profit sharing scheme, which is expected to account for approximately one third of the dividend stream forecast in the agreed base case.

The M5 continues as a viable PPPs. The Government of Hungary provided capped, contingent, revenue shortfall support during the first nine years of commercial operations. Traffic volumes were significantly below forecast levels, but the Concession Company was able to avoid a default by drawing on the contingent Government support payments and a restructuring of its long-term borrowings.

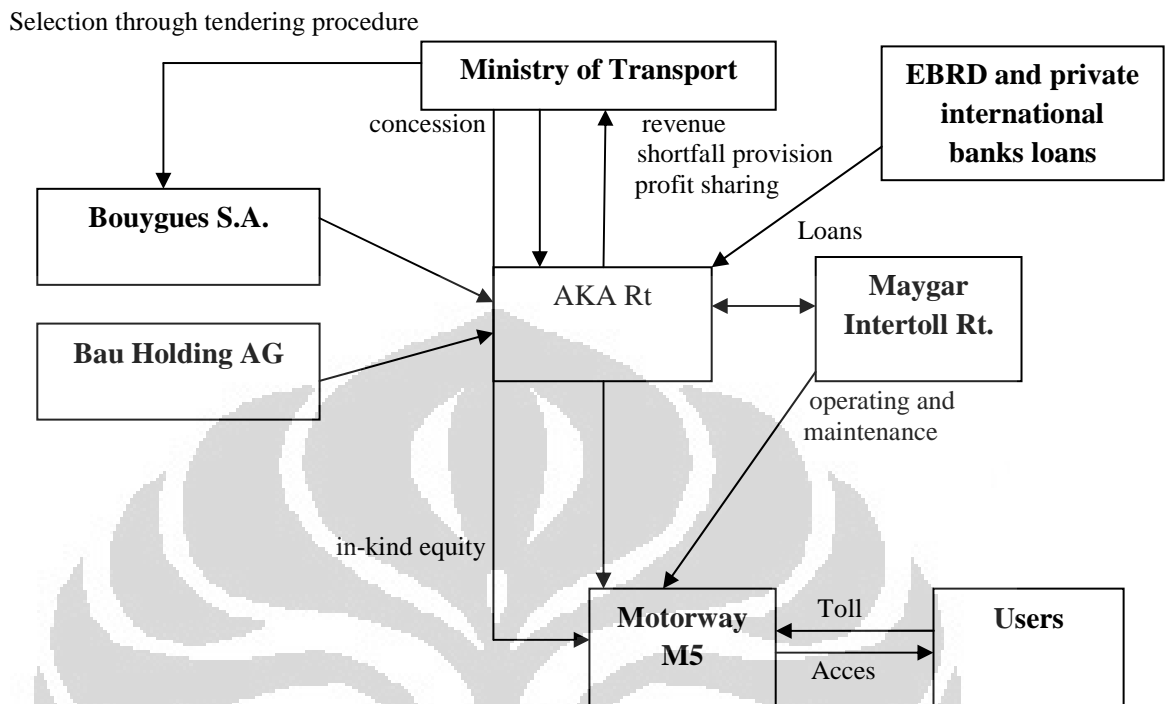


Figure 5.4 PPPs Structure of M5 Tolloed Motorway.

Conclusion.

PPPs Project of M5 Tolloed Motorway is success.

Responsibility Transfer

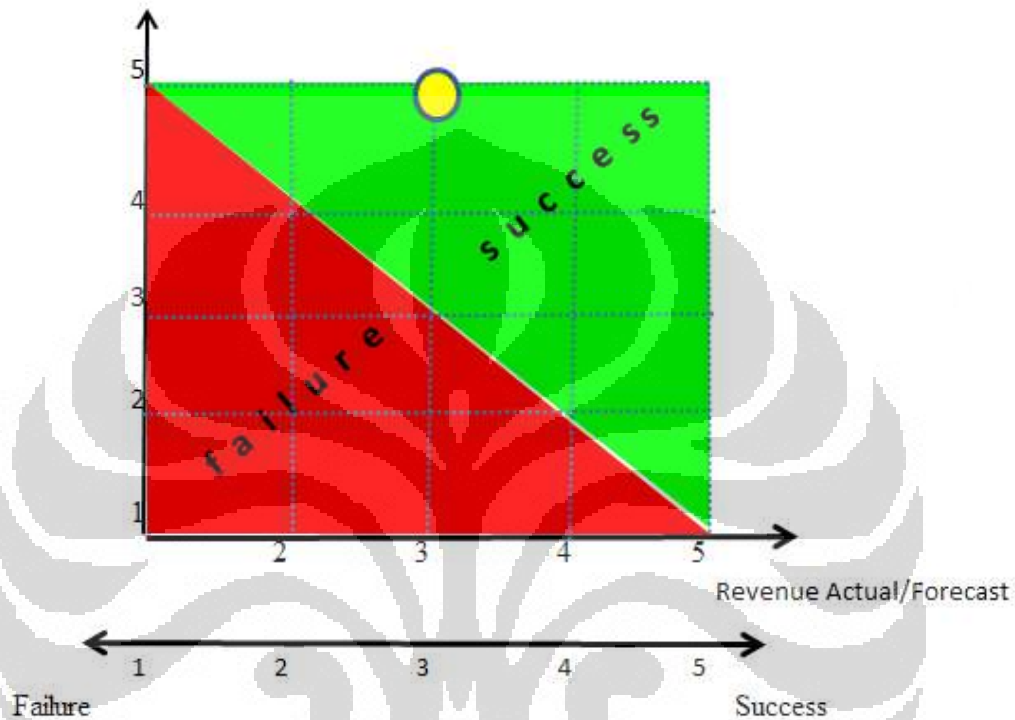


Figure 5.5 Conclusions Matrix of PPPs Project M5 Tolloed Motorway

From this cases can be analyzed.

- **Revenue Forecast / Actual (Revenue Risk) = 3**
Same with PPPs Project M1 – M15 Tolloed Motorway in 1997, the first year of operations, the average daily traffic volumes at 7,700, were significantly below forecast levels.
- **Responsibility transfer = 5**
 - ✓ AKA was obliged to draw on the stand-by facility (cash deficiency / revenue shortfall fund) agreed with the Government. Following a proactive marketing campaign by AKA and traffic calming measures, implemented by the Government on competing routes, the

requirement to draw on the Stand-by Facility in 1998 and in subsequent years was significantly reduced. The availability of the revenue shortfall mechanism provided a critical safety net to AKA, without which it would have found itself in default in the same way that the M1-M15 was unable to pay its debt service obligations.

- ✓ Revenue Shortfall Mechanism. The Government of Hungary is obliged for the first six and a half years' of commercial operations (i.e. until 2006) to provide AKA with compensation in the form of a subordinated loan facility, repayable after discharge of Project indebtedness to senior lenders, in the event that AKA's actual revenues, for whatever reason, are below the levels in the Agreed Base Case.
- ✓ The Concession Agreement provided for the Government to contribute at no cost the following: the preliminary design for the Project, building permits and environmental clearance, land acquisition and such roads and motorways that are already in existence and traffic calming measures on competing roads.
- ✓ In return for the above in-kind and financial contributions the Government will be reimbursed through a profit sharing scheme, which is expected to account for approximately one third of the dividend stream forecast in the agreed base case.
- ✓ Traffic volumes were significantly below forecast levels, but the Concession Company was able to avoid a default by drawing on the contingent Government support payments and a restructuring of its long-term borrowings

CHAPTER 6 CONCLUSION

The crucial issue in the public private partnerships (PPPs) project is ownership of assets. In many countries, especially in the developing country public private partnership project often equated with privatization or sale of state assets to the private sector (capitalization), this is a misconception in public private partnership project assets still owned by state/public. Some types of public private partnerships assets are owned by private sector but only in duration of the contract that at the end of contract ownership of assets will be transferred to the state / public.

Financial calculations is a main factor success of public private partnerships project, strong and predictable cash flows over lengthy periods of time will be attractive to debt finance and equity funds. In case studies chapter four unpredictable cash flow (wrong calculates the forecast revenues) cause to failure of the project, because it relates to the ability to pay all obligations to lenders and sponsors. So before deciding to execute the project necessary economic feasibility study of a project to estimate of the potential profitability of that project, or a study that measures the expected benefits from a certain project (see feasibility studies in chapter 3)

The public private partnerships project is a complex project, which raises the risk whose consequences will have an effect on the outcome, either positive or negative, of a project. Public private partnerships provide opportunities for the better management of such risks by allocating and sharing them appropriately between the public and the private sectors (a general rule is that “each risk should be assigned to the partners who can best handle it” (Savas, 2000b, p. 252) . And important that the allocation of risks is defined in a clear, unambiguous contract that sets out the risks, who takes them, and what are the consequences of and actions to be taken when the risk event actually occurs. Effective legal, regulatory and contractual conditions must be prepared by government that each party knows their role so each party can share joint rights and joint responsibilities.

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Appendix A : Summary of Key Features of the Basic Forms of Public-Private Partnership (PPP)

	SERVICE CONTRACTS	MANAGEMENT CONTRACTS	LEASE CONTRACTS	CONCESSIONS	BOT
Scope	Multiple contracts for a variety of support services such as meter reading, billing, etc.	Management of entire operation or a major component	Responsibility for management, operations, and specific renewals	Responsibility for all operations and for financing and execution of specific investments	Investment in and operation of a specific major component, such as a treatment plant
Asset Ownership	Public	Public	Public	Public/Private	Public/Private
Duration	1–3 years	2–5 years	10–15 years	25–30 years	Varies
O&M Responsibility	Public	Private	Private	Private	Private
Capital Investment	Public	Public	Public	Private	Private
Commercial Risk	Public	Public	Shared	Private	Private
Overall Level of Risk Assumed by Private Sector	Minimal	Minimal/moderate	Moderate	High	High
Compensation Terms	Unit prices	Fixed fee, preferably with performance incentives	Portion of tariff revenues	All or part of tariff revenues	Mostly fixed, part variable related to production parameters
Competition	Intense and ongoing	One time only; contracts not usually renewed	Initial contract only; subsequent contracts usually negotiated	Initial contract only; subsequent contracts usually negotiated	One time only; often negotiated without direct competition
Special Features	Useful as part of strategy for improving efficiency of public company; Promotes local private sector development	Interim solution during preparation for more intense private participation	Improves operational and commercial efficiency; Develops local staff	Improves operational and commercial efficiency; Mobilizes investment finance; Develops local staff	Mobilizes investment finance; Develops local staff
Problems and Challenges	Requires ability to administer multiple contracts and strong enforcement of contract laws	Management may not have adequate control over key elements, such as budgetary resources, staff policy, etc	Potential conflicts between public body which is responsible for investments and the private operator	How to compensate investments and ensure good maintenance during last 5–10 years of contract	Does not necessarily improve efficiency of ongoing operations; May require guarantees

Source: Heather Skilling and Kathleen Booth. 2007 / Asian Development Bank (n.d, p.28)

BOT = build – operate – transfer, O & M = operation and maintenance

Appendix B : Financial Formula

Ratio	Formula	Comments
Present Value	$= FV_n / (1 + r)^n$	The value today of a future cash flow or series of cash flows discounted using WACC or another appropriate discount rate.
Net Present Value (NPV)	$= \Sigma [FV_n / (1 + r)^n]$	Sum of the present value of all future cash flows.
Internal Rate of Return (IRR)	$0 = \Sigma [FV_n / (1 + r)^n]$	Rate at which the NPV = 0. However, if the cash flows are not uniform, the IRR may not provide an accurate assessment.
Benefit Cost Ratio /BCR	= Benefit/Cost	That attempts to summarize the overall value for money of a project or proposal Benefit = Total revenue before deductions Where 1>1 is good
Discounted Payback		Length of time required to recover initial investment on project – using discounted cash flow.
Weighted average cost of capital (WACC)	$= [(d/tc) \times (C_d (1-t))] + [(e/tc) \times C_e]$	The WACC is used as the discount rate when assessing the net present value of a project's future cash flows.
Simple Payback		Length of time required to recover initial investment on project – using non-discounted cash flow.
Debt service cover ratio (DSCR)	= NOI / Debt Service	Ability of operating earnings to service debt requirements.
Loan life cover ratio (LLCR)	= NPV of cash flow for the remainder of loan life / Outstanding loan	
Project life cover ratio (PLCR)	= NPV of cash flow for the remainder of project / Outstanding loan	
Return on Equity (ROE)	= Net Income available to equity holders / Equity	Measures the investment return on the capital invested by shareholders.

Ratio	Formula	Comments
Current Ratio	$= \text{Current Assets} / \text{Current Liabilities}$	A commonly used measure of short-term solvency.
Debt Ratio	$= \text{Total Debt} / \text{Total Assets}$	Measures the percentage of funds provided by creditors. Total Debt includes short-term and long-term debt.
Debt-to-Equity Ratio	$= \text{Total Debt} / \text{Total Equity}$	Similar to the above mentioned debt ratio in that it measures the percentage of funds provided by creditors in relation to equity

Source : UN ESCAP (n.d, p.81)

For the purpose of demonstrating the following formulas:

CF = Cash Flow

d = Debt

PV = Present Value of Cash Flow

Cd = Cost of Debt

FV = Future Value of Cash Flow

e = Equity

R = interest rate or discount value

Ce = Cost of Equity

n = number of years or periods

tc = Debt + Equity

t = Tax

NOI = Net Operating Income

WACC = Weighted Average Cost of Capital

Appendix C : Principle project stakeholders and their contributions

Objectives	Contributions
Project executing organisation <ul style="list-style-type: none"> • Efficiency gain • Leveraging of government budget • Acceleration of the project • Better service quality • Compliance with requirement and regulations 	<ul style="list-style-type: none"> • Concession/ licenses • Service fee
Sponsors <ul style="list-style-type: none"> • Adequate rate of return • Strategic capability 	<ul style="list-style-type: none"> • Equity • Competence and experience
Investors <ul style="list-style-type: none"> • Maximising of return 	<ul style="list-style-type: none"> • Private equity • Monitoring of quality • Financial competence
Lending banks <ul style="list-style-type: none"> • Loan repayment • Careful financial evaluation 	<ul style="list-style-type: none"> • Debt • Monitoring of quality • Financial competence
Development finance institutions (DFIs) <ul style="list-style-type: none"> • Loan repayment • Support of development goals 	<ul style="list-style-type: none"> • Debt • Monitoring of quality • Financial competence
Construction contractor <ul style="list-style-type: none"> • Sufficient margin 	<ul style="list-style-type: none"> • Required construction work • Turnkey fixed-price contract
Facility manager and operators <ul style="list-style-type: none"> • Sufficient margin 	<ul style="list-style-type: none"> • Required service • Fixed-price contract

Source : PPPs in Infrastructure Development Case Studies in Asia and Europe (2009, p.17)

Appendix D : Example Risk Allocation

No	Type Of Risk	Government	The Consortium (As Sponsor, Contractor, O&M Contractor)	Lender	Insurer	Bond Bank or Insurer
1.	Political Risk					
	Revoke, expropriation, sequestration	X				
	Exclusivity, i.e. not second facility		X			
	Changes in law	X				
	Development approvals	X	X			
	Adverse Government action or inaction	X	X			
	Provision of utilities	X	X			
	Increase in taxes (general)	X	X			
	Increase in taxes (specific)	X				
	Political force majeure events	X				
	Termination of concession by Government	X				
	Payment failure by government	X	X			

2.	Construction Completion Risks					
	Land acquisition and compensation	X				
	Restriction on import equipment/materials	X				
	Cost overruns		X	X		X
	Increases in financing costs		X	X		
	Time and quality risk		X			X
	Contractor default		X			X
	Default by Concession Company	X	X			X
	Time, cost and scope of identified but related work and variations	X	X			
	Environmental damage - subsisting	X			X	
	Environmental damage - ongoing		X			
	Protection of geological & historical object	X				
	Force majeure	X	X		X	X

3.	Operating Risks					
	Government Department default	X				
	Concession Company default		X			
	Operator inability		X			
	Termination of concession by concession Company	X	X	X		X
	Environmental damage - ongoing		X			
	Force majeure event	X	X		X	
	Labor risk	X	X			

	Technology risk		X		
	prolonged downtime during operation		X		X
	condition of facility (maintenance)		X		X

4.	Market and Revenue Risks				
	Insufficient fare income	X	X		
	Fluctuating demand of power generated	X			
	Transmission failure	X			
	Problem in bill collection	X			
	Insufficient other income	X	X	X	
	Power theft	X			
	Fluctuate of cost & availability of fuel/coal	X	X		
	Government restriction on profit & tariff	X	X	X	

5.	Finance Risks				
	Inflation risk	X	X	X	
	Interest rate		X	X	
	Foreign currency exchange rate	X	X		
	Foreign currency convertibility	X			

6.	Legal Risks				
	Title/lease property	X	X		
	Ownership assets		X		

	Security structure			X		
	Insolvency of concession company		X	X		
	Breach of financing documents		X	X		
	Enforceability of security			X		
	Documentation/contractual risk (conflict & arbitration, applied laws)	X	X	X		

7.	Competition risk (before bid award)		X			

Source : PPPs in Infrastructure Development Case Studies in Asia and Europe (2009, p.124) “ has been reprocessed ”