A Review: Exploring Stakeholders' Expectations from PFI Financial Modelling at Different Stages

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1.1 Abstract

Project financing arrangements for private finance initiative (PFI) projects involve many participants with complex transactions and involve diverse interests. Financial modelling is the task of creating a model, which represents the forecasted performance of a project under uncertainty, for financial decision making. This model is one of the most common tools used for evaluating a new project and facilitating negotiations among lenders, sponsor(s) and a government agency. This paper explores the expectations of the parties who are involved in PFI financial modelling through a comprehensive literature review. Since the stakeholders' expectations are often different and contradictory, how their key interests are accommodated and the opposing expectations are managed and discussed in this paper. The stakeholders' expectations are identified as critical success factors (CSFs) in PFI financial modelling. The identification of CSFs and the reconciliation of the key interests will help in identifying best practices in PFI financial modelling.

1.2 Keywords

Financial modelling, PFI, CSF, decision making.

1.3 Introduction

The evaluation of the financial viability for seaport projects is a very important task for bidders and governments under traditional procurement or through private finance initiative (PFI). The introduction of PFI system has enabled the involvement of the private sector in project finance. PFI as a type of public-private partnership (PPP) project scheme has become a major procurement method worldwide, which generates more risks to both the authority and the private parties due to the uncertainties with long-term agreement and the complexity of the project financing arrangement (Zhang 656) and (Ratcliffe 4). Kurniawan, Ogunlana and Motawa stated that bidding evaluation and negotiation process among them are time consuming because project financing arrangements involve many participants with complex transactions and diverse interests (1317). Limited understanding of PFI process and project requirements by the authority has contributed to the lengthy process involved in negotiations (Rafalowicz 16). The investors might be reluctant to participate in PFI projects. Therefore, negotiations between the authority and the other stakeholders should be carefully undertaken within reasonable time. In order to accommodate all key interests of the stakeholders, this paper explores PFI financial modelling from the expectations of the major parties involved at different stages. A review of the stakeholders' expectations from PFI financial modelling was conducted to identify the critical success factors and the opposing expectations. The discussion about the conflict of interests and how to manage the opposing expectations is expected to contribute the implications for academic research and practice.

1.4 PFI Financial Modelling

The financial decision making model (often called as 'financial model') is one of the most common tools used for evaluating a new project and facilitating negotiations among lenders, sponsor(s) and a government agency. A financial model is a tool employed by lenders to conduct negotiations with the sponsor(s) and to prepare

project appraisal report. Furthermore, the financial model can be used for preliminary due diligence, negotiations, and project performance monitoring.

In PFI projects, the sponsor(s) generally organise a special purpose vehicle (SPV) or a concessionaire company to deal with the lenders, investors, insurance providers, contractor and other parties especially the authorities. Generally, a successful PFI project has mutual agreement and balance of risk sharing between the authority and the sponsor(s) prior to financial close. Therefore, financial models are not only used as tools to win bids but they are also to support the risk sharing negotiation between the authority and the sponsor(s).

A consultant firm can be appointed as a financial advisor by both or either, Authority and/or the SPV, for developing and running the financial model. In developing a financial model, the financial advisor depends upon the other parties to specify all relevant data needed for the model (see Figure 1).

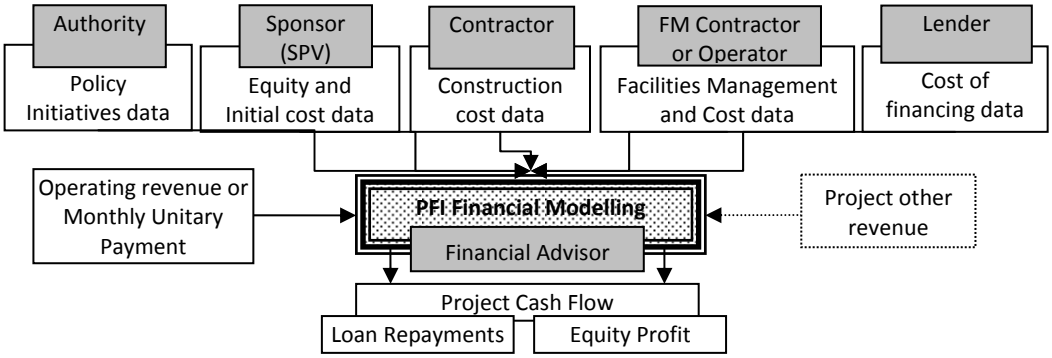

Figure 1: Current use of PFI financial modelling
Source: Modified from Kaka and Al-Sharif (221)

Since the core aim of financial modelling is to forecast the performance of a project under uncertainty, economic and financial assumptions are made to predict the project performance. The authority might provide policy initiatives data such as fiscal incentives scheme, retained responsibilities for the delivery of core services, governmental loan guarantee, royalty, tariff cap, etc. (Chang and Chen 214-222), (Khan and Parra 305-382), (Zhang 656-667), (Kulkarni and Prusty 90-106) and (Government of India). The SPV Company supplies initial cost of the project and its management cost. The Engineering, Procurement and Construction (EPC) Contractor gives construction cost and also the Life Cycle Cost on a monthly basis. Operation and maintenance costs data will be provided by the operator company or facilities management contractor. The lenders will provide the financial information related to the project financing. These inputs are adjusted in coordination and negotiation with the parties who provide the data. The financial advisor assembles all project costs estimation, and feed them into model together with adjustments to the forecasted traffic volume and variable rates to correspond the SPV target (Kaka and Al-Sharif 220). Figure 1 also shows how the stakeholders can influence the development of PFI financial modelling at different stages.

Kulkarni and Prusty suggested that sophisticated financial model and sensitivity analysis, which incorporate all external post-bid factors as inputs and support mutual revenue-sharing, need to be developed (90-106). In addition, a successful bidder's strategy must be able to convince the financial institutions of the financial viability of the project and the ability to generate cash flow to service the debt. According to Public-Private Infrastructure Advisory Facility, all scenarios of financial modelling must

also be commensurate with the risk factors involved in port sector projects such as: construction risks, hand-over risks, operating risks, procurement risks, financial risks, and social risks (qtd. in Kulkarni and Prusty 104). Thus, it is expected that financial modelling can help the authorities to measure the financial viability of projects by identifying the best bidder's strategy and facilitating the risk sharing negotiation.

However, the elements and assumptions of a seaport financial model depend on the seaport objectives. Brooks and Cullinane summarised that there are three groups of seaports objectives: (1) the first group has solely non-economic objectives, including wider economic benefits (e.g. local economic development, cluster development, etc.); (2) those that have strictly economic objectives (e.g. profit maximisation and/or maximisation of return on investment); (3) and the third group has a mixture of both economic and non-economic objectives (631-660). Since a PFI project is involving private parties in project finance, the elements and assumptions of the financial model are focused on the third group's objectives. Most developing countries want to promote their economic growth through infrastructure development; otherwise lack of infrastructure facilities could slow the economic growth. While, the authority should comfort the private parties in securing their interests related to the project.

1.5 Stakeholders and Their Expectations at Different Stages

In order to learn how to develop a comprehensive financial model, it is important to understand the use of financial model at different stages, and to know who the parties (stakeholders) are involved in using financial model. A comprehensive review of related literature from (Khan and Parra), (Zhang), (Kulkarni and Prusty), (Ke, Liu and Wang), (Chan et al), (Shin), (Rafalowicz), and (Scrivens) was conducted to identify the stakeholders and their expectation from PFI financial modelling. There are five stages when the model is used with different purposes. Table 1 shows the use of financial model with the stakeholders in PFI Projects. The stakeholders' expectations from overall to specifically PFI financial modelling are discussed later in this paper.

Table 1 The use of financial model at different stages

Stage	Purpose of Financial Model	Who
Pre-bid (pre-proposal)	To facilitate the submission of a convincing proposal in order to secure the rights to build and operate the project.	Sponsor(s), other potential sponsor(s), investors, advisory agencies & authority
Contract Negotiation	To assist in the negotiation of project agreements by considering the economic and financial feasibility of a project under a variety of scenarios and assumptions.	Sponsor, lenders, advisory agencies & authority
Finance-raising	To facilitate due diligence, negotiation of commercial issues, forecast of the financial performance of the project, and project appraisal report	Sponsor, independent engineer (IE), marketing expert & lenders (modelling bank)
Construction	To monitor and track the performance of the project	Sponsor, Inter-creditor agent, independent Engineer (IE) &

		lenders
Operation	• To monitor and track the performance of the project • To assess the impact of any annual operations budget submitted by the project vehicle to lenders. • As a tool to negotiate a new tariff.	Lenders, inter-creditor agent and sponsor, authority.

1.6 The Main Objectives Authorities

Estache et al identified four main objectives authorities combined with its instruments as summarised in Table 2 (17-18). The financial sustainability of the operator is one of the main critical success factors in PFI projects. A flexible tariff/toll setting up and adjustment mechanism is needed to allow the SPV company to cover its costs and achieve a reasonable rate of return. However, the flexible tariff/toll adjustment does not always cover the costs. Subsidies would be a complementary option to maintain the financial viability of the project. Allocative efficiency requires an optimal distribution of goods and services.

Table 2 The main objectives regulators with its policy instruments

Main Objectives	**Policy Instruments**
Sustainability	Tariff levels, subsidies and regulatory regime (price caps).
Allocative efficiency	The tariff structure.
Productive efficiency	The regulatory regime (price or revenue caps).
Fairness	Tariff structure and various contractual obligations, including investment levels, speed and quality, as well as the regulatory regime.

The competition across clients (commercial vs. private) and regions (province vs. capital) should be balanced. Therefore, the design of tariff structure has to be regulated to ensure that tariffs reflect marginal costs. The regulators concern to push the SPV to minimise costs for a given level of production. But, one of the problems is the operator tends to hide efficiency gains in order to avoid price cuts. Finally, Distributional fairness means that tariff structures for each user type are appropriate with the users' ability to pay.

1.7 Pre-proposal stage

At the pre-bid or pre-proposal stage, the sponsor initially develops a financial model to facilitate the submission of a convincing proposal or unsolicited proposal for securing the rights to build and operate the project. The sponsor also uses financial model as a tool to do negotiation with other potential sponsor(s), investors and the government authority. The negotiation process will be faster if all expectations can be met proportionally. The expectations of major participants at the pre-proposal stage are summarised in Table 3.

Furthermore, Khan and Parra identified that the purpose of financial model at pre-bid stage may incorporate a few relatively "soft" information elements, which are from the assumptions made by the sponsors without due diligence verification. The soft information elements are as follows: "(i) Determination of an acceptable hurdle rate for the project, including a reasonable margin to compensate for the "what could go wrong" scenario, (ii) "Rule-of-thumb" criteria for estimating construction and operating cost, perhaps amended to fit site and host country conditions, (iii) A capital structure consistent with the type of facility being built and fully reflective of the operating risks that are to be assumed, (iv) Assumptions regarding the identity of the lenders, loan amounts, tenors, interest rate, grace period, upfront fees and payback structure" (321)

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Table 3 The expectation of major participants at pre-proposal stage

Major Participants	Expectations (Critical Success Factors)
Sponsor(s) and other potential sponsor	Avoiding winning unprofitable contract.
	Competitively pricing a bid to assist winning a contract.
	Assurance that the financial model reflects the project and the financing terms.
	Assurance that the financial model can be used to determine the project's ranking under capital rationing.
	Reducing time and cost of bidding.
	Transparency of the award process.
	Unsolicited proposal with important innovations (*e.g. a new type of project, or new solution to known problem, or new ways of defining performance standards*)*.
	IRR is higher than the corporate hurdle rate.
	Preferring to submit unsolicited proposal because provide more scope to participate in defining technical and commercial outlines of the project*.
	Getting involved in the long-term considerations for having a presence in one country*.
Government authority	Checking the project's ability to deliver value for money (VFM).
	Quick process of awarding the unsolicited proposal, due to the urgent demand of the facilities provided from the project, with a reduced level of risk for the government*.
	Robust operational experience and financial strength of the bidder during request for qualification (RFQ) process*.
	Using a financial model to evaluate the bids in a competitive tender.
Investors / lenders	The project must generate enough cash flow so as to give lenders a margin of safety with respect to its debt service obligations*.
Advisory agencies	Ensuring the most competitive price based on the required rate of return.
	Avoiding the sponsor to win a project that makes a loss (e.g. if an error understates costs, thus bidding too low a price)

* Indicates that the expectation raises a conflict of interests.

1.8 Contract negotiation stage

Once the proposal is submitted to the government authority, the sponsor or the bidder quotes a percentage of their revenue to be shared with the government authority.

Generally, the proposal with the highest percentage will be selected and continued for contract negotiation process (Kulkarni and Prusty 90-106). Nevertheless, the government authority also expects a reduced level of risk for the government and flexibility of national budget expenditure.

During this stage, the inputs of financial model will be amended due to negotiation and agreement among the involved parties (see Table 1). The amendment of the inputs is a process of reconciling the conflict interests among the stakeholders. There are some reasons of inputs' alteration need to be done, such as: the lenders deem the project's capital structure is too aggressive, the lenders determine the project's borrowing power, and any other reasons that can be seen in Table 4. However, the model's revenues are made consistent according to the advance market study.

Table 4 The expectation of major participants at contract negotiation stage

Major Participants	Expectations (Critical Success Factors)
Sponsor(s)	Anticipating the cost overrun with the agreed fixed EPC contract (Turnkey Contract).
	Committing the lowest level of equity possible (less private investment)*.
	Securing the project from the risks (e.g. revenue risk, political risk, change in law, etc.) that can jeopardise its cash flow or financial viability*.
	Shorter negotiation process, longer concession period and shorter payback period*.
	Fiscal incentive or tax benefits from the government authority (e.g. tax holiday, tax reduction or exemption, etc.)*.
	Lower guarantee fee or credit enhancement fee (maximum annual fee rate: 1.5%) paid by the sponsor*.
	Transparency during negotiation process.
	IRR is higher than interest rate of debt.
Advisory agencies (e.g. an underwriter)	Guaranteeing that the debt being sought will be successfully placed.
	Taking the risk of a successful syndication by making up whatever shortfall there is between debt being sought and that successfully placed.
Government authority	Shorter concession period, low total project life-cycle cost and low equity level*.
	Longer payback period to secure a good project management practices and a long-term commitment of the sponsor(s)*.
	Securing the equity level could satisfy the interests of equity holders, lenders, and the general public*.
	Securing the government's affordability in supporting the project*.
	Knowing whether the government should provide subsidies in order to promote private investment in the project or not, if the self-liquidation ratio (SLR) is less than 1*.
	Minimizing the level of subsidise or compensation if the project revenue is less than expectation or if the contract is terminated*.
Lenders	High equity level to minimise the repayment debt risk (i.e. DSCR is higher than the minimum level of annual DSCR)*.
	High risk premiums for a low equity level*.
	Knowing how much senior debt that the project is able to carry.
	Knowing whether the project needs a subordinated lender or not

	(the minimum range of required LLCR for a container port is between 1.50 and 1.90 in order to determine subordinated loan)*.
	Reaching an agreement on forecast for cash available for debt service (CADS) over project loan life*.
	Expecting that all project agreements are structured in such way to remove risk from the project vehicle and allocate it to someone else in a better position to absorb it*.
	Assurance that the lenders are only lending the amount the project can support ("Debt Sizing")*.
	Insurance that there is someone to sue if there is a material error in the model resulting in the debt not being repayable*.
	Credit Committee requirement*.

* Indicates that the expectation raises a conflict of interests.

By the end of contract negotiation stage, all project agreements are fully negotiated and initialled, and the project offering memorandum is completed and ready for distribution. The sponsor(s) should have developed fairly sophisticated and accurate models that portray the economic and financial feasibility of a project under a variety of scenarios and assumptions. For the economic feasibility, the best perspective is viewed from host government that seek 'value for money' in relation to government expenditure. The key issues that need to be concerned by three major parties in the economic feasibility of the project are described in Table 5. While for the financial feasibility, the developers will focus on the level of projected distributions, their pace and timing, and the acceptability of the project's resulting internal rate of return (IRR). However, the lenders are concerned more on: (a) Projected revenues, operating expenses, CADS and distributions are consistent with project agreements; (b) Realistic estimates of future project revenues are sufficient to cover operating expenses and repay project debt with an acceptable margin of safety.

Table 5 Key issues in the economic feasibility of the project

Major participants	Key issues	Remarks
Public sector	Financing costs	Balance between ROE & shorter debt tenor may result in a higher tariff for the users.
	Development costs	Legal fees, development fees and costs of conducting due diligence.
	Insurance	Costly insurance policies to mitigate construction, operation and certain specialised risks.
	Taxes	In many countries, the public sector does not pay taxes, or pays at a lower rate than does the private sector.
	Construction costs	The public sector rarely uses turnkey construction contracts in some cases and specifications.
	Operating & Management (O&M)	The private sector relies on very strict O&M practices.
Sponsor(s) and Lenders	Tariff or tolls of the infrastructure facility	Tariffs should be reviewed as reasonable over the longer term by the consumer serviced by the facility, given the foreseeable effects of future deregulation, sector reorganisation, competition, new technology and other similar factors.

1.9 Finance-raising stage

The finance-raising stage is initiated when an underwriter or a club of lenders expresses an interest through a mandate letter to the sponsor(s) because the project is sufficient to cover the debt needs. At this stage, government authority reviews and approves broad financing terms of the project. Since the sponsor's main objective is to achieve financial closing on acceptable terms and construction start, from the initial model, the sponsor(s) and lenders (modelling bank) develop a *Lender Base Case* financial model in order to test the project's financial viability. Table 6 shows summary of major participants' expectations during the finance-raising stage.

Table 6 The expectation of major participants at finance-raising stage

Major Participants	Expectations (Critical Success Factors)
Sponsor(s)	Achieving financial closing on acceptable terms and construction start.
	Having joint control with the modelling bank over amended inputs and outputs of financial model transformation.
Modelling bank	Expanding the project input, calculation and output worksheet.
	Amending the model to reflect the results of the negotiation of commercial issues affecting the model's input.
	Conducting sensitivity analysis for key commercial issues as needed.
	Verifying the accuracy of formulae used in the model in collaboration with the model auditor.
Independent Engineer	Examining great details of all issues at the global or national level that affect availability, price, transportation and quality of the input.
Marketing Expert	Analysing global and regional trends affecting the product or service that will be offered.
	Assessing the issues that affect price, availability, quality, or transportation thereof.
	Studying market of the product or service, including a thorough assessment of its proposed price structure, including elasticity analysis.

During the development of a lender base case financial model, the modelling bank examines the architecture of the model, the accuracy of inputs, integrity of the formula used in the calculation worksheets, loan profiling assumptions (*e.g. loan commitment, schedule of disbursement, loan repayment schedule, interest and fees, assumptions related to the interest rate hedge*). Some of the model's inputs could be modified due to:

- Recommendation of expert opinion: *(a) project costs; (b) capital structure of the project vehicle; (c) revenue forecasts, if too rosy or unrealistic; and (d) erroneous formulae in the calculation worksheets, etc*.

- Changing circumstances: fees, interest or swap costs associated with the debt, economic assumptions related to global and domestic inflation or foreign exchange parity.

In addition, the specific concerns that directly, or indirectly, affect the model's output due to the negotiations are: *(a) the project's capital structure; (b) loan profile; (c) cost overrun mitigation; (d) resolution of quantitative covenants that are to govern the ability on the part of the lenders to declare an event of default (EOD) as well as on the part of the borrowers to pay dividends.*

1.10 Construction stage

The government authority manages and adjusts regulatory structure to create stable market conditions, and participate in commissioning tests of facility during the construction stage. The sponsor(s) use the financial model to monitor and track the performance of the project. The lenders appoint an inter-creditor agent, usually the modelling bank, for maintaining the financial model and monitoring the project costs such as: (1) Infusions of debt and equity by the parties, as they take place; (2) All project costs as incurred, including development and other construction costs; (3) All finance costs, including the upfront fees, hedging costs, funding of required reserves, and interest roll-up due to loan disbursement. Table 7 shows summary of major participants' expectations during the construction stage.

Table 7 The expectation of major participants at construction stage

Major Participants	**Expectations (Critical Success Factors)**
Sponsor(s), Inter-creditor agent and Independent Engineer	Ensuring the impact of cost overrun does not influence debt service cover and the ability of the project vehicle to pay dividends to the sponsor.
Lenders	Anticipating to claim the declaration of the loan agreement breaching

The inter-creditor agent and Independent Engineer (IE) will see carefully the impact of cost overrun on the Historic Debt Service Coverage Ratio (HSDCR), Projected Debt Service Coverage Ratio (PDSCR) and Loan Life Cover Ratio (LLCR). The purpose of calculating HSDRC, PDRSC and LLCR is to ensure that no defaults have taken for failure to meet debt service cover and that the project vehicle is entitled to pay dividends to the sponsor, if other conditions for doing so are met. And if a very huge cost overrun is anticipated earlier, the declaration of the loan agreement breaching may be able to be claimed by lenders, based on a material adverse change or some other similar covenant.

1.11 Operation stage

The purposes of a financial model in this stage for the lenders are to assess the impact of any annual operations budget submitted by the project vehicle to lenders, as a tool to approve/ disapprove the annual operational budget if its implementation leads to a problem. The sponsor(s) use a financial model also as a tool to negotiate a new tariff with the government agency that would permit the project to recover eventually

the unanticipated investment. Table 8 shows summary of major participants' expectations during the operational stage.

Table 8 The expectation of major participants at operational stage

Major Participants	Expectations (Critical Success Factors)
Sponsor(s)	Securing the operational cash flow*.
	Understandable financial model for stakeholders.
	Useable financial model by SPV managers.
	Easy to update the financial model.
Inter-creditor agent	Monitoring and tracking the project performance (e.g. cover ratio, outturn shareholder IRRs, etc.).
	Making the model represents a reality.
Government authority	Reasonable tariff*.
	Significant port performance compared to pre-reform and other ports*.
Lenders	Assessing the impact of annual operations budget.

* Indicates that the expectation raises a conflict of interests.

1.12 Discussion

1.12.1 Balancing The Stakeholders' Expectations

Since the major parties have different views and interests to the PFI projects, all key interests with equilibrium of stakeholders' interests are very important to be explored. The stakeholder theory has been shown by Shankman to have the potential to subsume agency theory (319-334). The relationship between dependent variables, financial performance and stakeholder satisfaction, is argued that it can be linked to the conceptual limitations of agency theory. While the implications for practice of agency theory are to align interests of employees and owners, take actions to maximise firm NPV and use efficient contracting mechanism to minimise agency costs. The practice's implication of stakeholder theory is to balance the interest or claims of all relevant stakeholders.

From the aforementioned stakeholders' expectations, at least there are 28 CSFs that raise a conflict of interests. A categorisation of several CSFs, which could be reconciled with a similar approach, is needed to simplify the complexity of the stakeholders' interests. 11 categories are identified for finding the reasons and the solutions of how to reconcile the conflict of interests.

Innovation. The sponsor(s) and the authority are keen to find a new approach to known problem. For instance, the authority use PFI procurement in regard to increase the port performance and allocate their budget to other sectors. On the other side, the lenders need an assurance that the project must generate enough cash flow so as to give lenders a margin of safety with respect to its debt service obligations. Since most of the authorities from developing countries have limited understanding of PFI process and project requirements, the lenders are reluctant to give lending facilities without

strong evidence from the authority that they can assure the lenders. The alternative solution of this problem is a transparency mechanism should be made during the implementation of the proposed innovation.

Unsolicited proposal. The sponsor(s) prefer to submit the unsolicited proposal because it will provide more scope to participate in defining technical and commercial outlines of the project. Meanwhile, the authorities are forced by public to use bidding for the fairness. A fair policy should be stipulated by the authority that the unsolicited proposal is used only in emergency case. The unsuccessful bidder(s) also need to be compensated. Therefore, a compensation for the proposal cost will encourage the bidder to participate more in PFI projects.

The length of concession period. The sponsor(s) is eager to get involved in the long-term considerations for having a presence in one country. But, the authority is deemed to grant the sponsor a shorter concession period. The shorter concession period will result in a higher tariff for the private. The decision for the length of concession period depends on the level of government support and how the risk sharing is elaborated.

A reduced risk level. All stakeholders are struggling to absorb the risk only at its lowest level with the minimum efforts. Therefore, the risk sharing and risk management should be clearly defined in the draft of concession agreement. The authority shall provide this information when announcing the request for proposal or proposal content for unsolicited project. Thus, it will allow the sponsor(s) to make assessment of the involved risks.

Financial strength and the experience of the bidder. Since PFI project require the private involvement in funding the project, the authority often strictly appoints only the bidder that has a very strong financial capacity and a long operational experience. Moreover, most well-established SPV companies have their own sub-contractors team. This condition could discourage small and medium enterprises to take a part of the bidding opportunity. Then, the competition become very limited to the very big SPV companies. Again, the fairness of the PFI procurement is questionable. The qualification criteria should not be limited only to the big and reputable companies but also more on how the bidders can provide more evidence that they are eligible to win the project.

Operational cash flow. The authority wants a reasonable tariff to be offered by the sponsor due to the affordability of the users to pay the tariff. While, the sponsor is forced by the lenders to secure their operational cash flow in uncertain economic conditions over long term concession period. In this regard, a minimum revenue guarantee and redemption of excess revenue can be initiated by the authority to comfort the lenders and the sponsor.

Debt and equity ratio. As the host authority, they need to secure the equity level that could satisfy the interests of equity holders, lenders, and the general public. But, if the authority failed to comfort the sponsor(s) and the lenders, the investment opportunity could be withdrawn by both or either parties. The company success depends on investment decisions, not how it funds them (i.e. with equity only, or with equity and debt). Refinancing, as an effort to improve the financial condition due to uncertain economic conditions, can be used as an alternative solution to comfort the lenders and the sponsor (i.e. modify the project consortium's equity structure, investment share, debt financing conditions, etc).

Payback period. The sponsor is willing to have a shorter payback period because long-term financing introduces great uncertainty. But, the authority perceived that

longer payback period could secure a good project management practices and a long term commitment of the sponsor. Redemption of excess revenue and a minimum revenue guarantee can also be used to help the authority in comforting and maintaining the long-term commitment of the sponsor.

Government support / Commitment. A good faith among the stakeholders is very important to maintain the commitment over long term concession period. The sponsor and the lenders want to secure the project from the risks (revenue risk, political risk, change in law, etc.) that can jeopardise its cash flow or financial viability. However, the authority also expects to secure their support's affordability and minimise the level of subsidise to the project. A clear arrangement of government supports and sponsor's responsibilities should be stipulated within the concession agreement and the other agreements' drafts.

Cost Optimisation. Although all stakeholders are willing to minimise the project risks, they also want to reduce their expenditure in the project. For instance, the sponsor is eager to spend a lower guarantee fee or credit enhancement fee. And the authority wants to have a low total project life-cycle cost. But the lenders have policies to secure the project debt being repayable or have insurance for the worst case. Thus, a credit committee is required to assess the project risks. The maximum rate for the infrastructure credit guarantee fund must be specified, e.g. Maximum annual fee rate is 1.5%.

Borrowing Capacity. The lenders have to make sure whether the project needs a subordinated loan or not. Then, an agreement on forecast for CADS over project loan life is expected by the lenders to be reached during contract negotiation stage. Therefore, the sponsor and the authority have to find a way of complying with the lender's requirement. There are two options available in order to improve the predictability of CADS estimation. First option is an arrangement of interest rate swap through a broker or commercial bank, which "fixes" the interest rate for the life of the loan. The second is persuading the lenders to arrange a debt hybrid instead of extending straight loan.

1.13 Implications And Conclusion

Since the major parties have different views and interests to the PFI projects, all key stakeholders' interests are very important to be explored. This paper explores the expectations of all key participants at different stages in the context of using financial models as a project evaluation tool. It shows clearly that the negotiation process can be improved if all key interests of the stakeholders are identified and compromised. The proposed solutions are expected to contribute the implications for decision makers who are involved in the negotiation process to make better decision. No such exact solution can accommodate all the stakeholders' expectations. Nevertheless, the availability of the alternatives solutions might increase the flexibility and the efficiency in negotiating the risk sharing mechanism. The identification of CSFs and the reconciliation of the key interests will help identifying best practice procedures to develop PFI financial models.

Their expectations can be treated as critical success factors (CSFs) to PFI projects. For this paper, the stakeholders' expectations at different stages of financial model development were identified for PFI projects in general and seaport projects in particular. The findings should be applicable to further study. Therefore, the identified CSFs are needed to be validated with the experts' opinion. The measurements of

achieving each CSF, which is identified as the key performance indicators (KPIs), could be explored in future research.

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1.15 Author's profile

Kurniawan is a Civil Engineering Faculty at Heriot-Watt University, United Kingdom. His research is funded by Government of Indonesia and Heriot-Watt University. The aim of this research is to develop an integrated project evaluation tool for PFI seaport projects, which integrates the financial modeling and the risk sharing strategy.

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