

Achieving the Best Value in Refinancing PFI Projects: Review of the UK's Experience

By

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Abstract:

From the late 1990s, refinancing in PFI has become a significant issue which could not be ignored any more by the British public sector as lots of PFI contractors were 'refinancing' their loans -changing the terms of their borrowings to increase profits significantly. In order to improve Value for Money to tax payers, a series of refinancing policies have been introduced by the British public sector. This report intends to examine the policies being applied at different stage and its results. Not only as a systematical review of refinancing issues for the UK's public sector, this paper also tries to drive guidance for other country's public sectors in relation to refinancing issues if they want to introduce the PFI to the delivery of public services

The thesis begins with summarizing UK's refinancing experience by investigating policies being applied during different stages and the rationalities behind these policies. Based on this experience review, elaborate examinations of refinancing then are conducted from the public sector agencies' and debt funders' perspectives, where the theories of risk allocation and risk pricing, game theory and agent theory are utilized. In order to distinguish a way forward, some further issues in financing innovations are also explored. Combining with the findings from interview survey, the paper concludes the experience which could be absorbed by other counties public sector and provides them with valuable recommendations on how to formalize a general guidance on policy making and policy implementation in PFI refinancing.

Key words: PFI, refinancing share, private finance, risk pricing, bargaining, funding competition.

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Chapter 1 Introduction

1.1 Background

In the past 15 years, Private Finance Initiative (PFI) has demonstrated itself as a successful route of public services delivery in UK, with the wide utilization in NHS, educational sector and the provision of prisons. The public sector gave two arguments for the introduction of PFI. First, the procurement method was to yield improved Value for Money (VFM) for the public sector through economic efficiency. Second, it was to reduce the amount of public sector borrowing and increase investment into public services (HM Treasury, 1993). However, as more and more deals are coming to mature stage, lots of PFI contractors were refinancing their loans, changing the terms of their borrowing to increase profits by as much as 80 percent (NAO, 2000). With the huge potential windfall refinancing gains for the private sector, the Treasury was often blamed for not protecting the public sector from the "refinancing bandits".

From the late 1990s, the refinancing has become a significant issue which can never be ignored any more by both the public and by private sectors. In order to improve the VFM to tax payer, reflecting the PFI risks and gains properly, the public sector changed its policies from non-share of refinancing gains, to 30% share and to 50% share to the public sectors. Furthermore, some experts believe that the public sector can become more efficient in the long term by turning DBFO into DBO + F.

This paper examines the refinancing issues thoroughly, with the consideration of both VFM to taxpayers and maintenance of sufficient incentives to the private sector. Tracing back the whole history of refinancing in UK's PFI deals, I will examine different policies applied during different periods and its influences. Furthermore, some further issues relating to financing PFI projects are discussed, trying to identify the most suitable arrangements for financing PFI projects

1.2 Problem owner

Public sector as the ultimate client of PFI deals and regulator to the PFI market should take the responsibility to enhance VFM to taxpayers and to create a climate in which to improve the public sector's position on refinancing. Therefore, the problem owner in this report is the British public sector.

1.3 Research objectives

The objective of this report is to examine the refinancing policies applied by British public sector at different stages and its results. Not only as a systematical review of refinancing issues for the UK's public sector, this paper also tries to drive guidance for other country's public sectors in relation to refinancing issues, for example if they want to introduce the PFI to the delivery of public services. The research criteria are broken down into five research objectives:

Firstly, the research should summarise the refinancing experience in UK, with emphasis on the rationalities of polices being applied during different periods.

Secondly, the research should investigate why the refinancing is possible. This leads to discussion of risk allocation mechanism of PFI contracts.

Thirdly, the research should establish a theoretical framework to analyze the refinancing sharing issues for both early deals and new deals. Furthermore, I would like to ask the fundamental question: whether refinancing could be avoided, i.e. by enhancing competition in the financial market or by other kinds of DBO + F arrangement, where the public sector organisations provide long term finance.

Fourthly, in order to examine the applied policies and test the feasibility of the theoretical conclusions, an empirical research in form of interview survey is undertaken among both public sector and private sector.

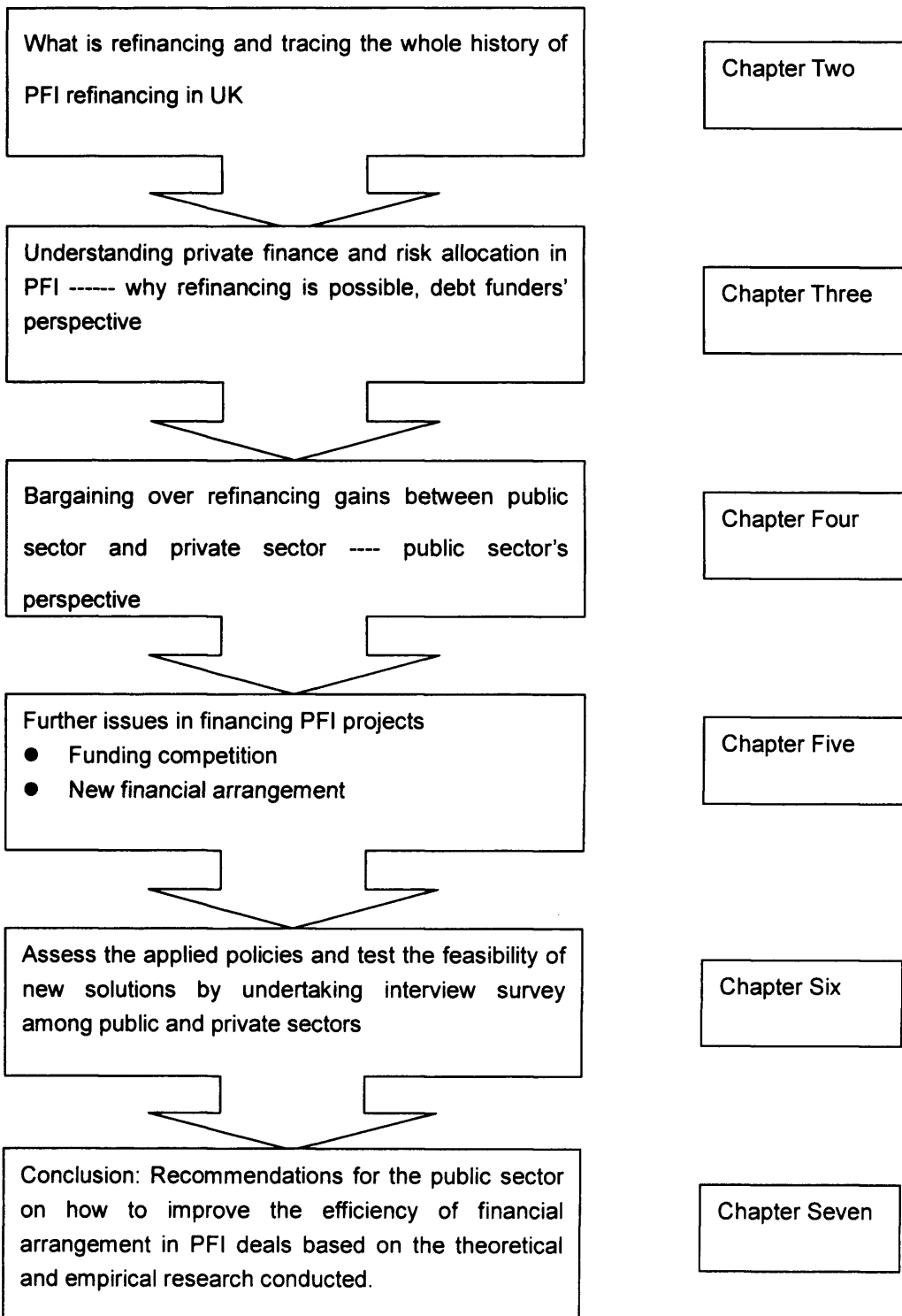
Lastly, the research should end with the lessons learned from the British PFI deals regarding the refinancing issues, which could be absorbed by other countries. In addition, the research should provide the public sector with recommendations on how to improve effectiveness and efficiency of the financial arrangement based on the theoretical and empirical research conducted.

1.4 Research methodology

According to Wing *et al.* (1998, 99), the most appropriate research method in construction management should be a pragmatic one: the approach that is likely to generate practical solutions. Quantitative research is characterised by the development of hypotheses that are subsequently tested. The hypotheses are drawn out of literature review. The data used to test the hypotheses is gathered using, for example, questionnaires or interview. Subsequently, typically, statistical analysis is used to produce research findings (Amaratunga and Baldry, 2001).

The paper is mainly divided into three parts. In the first part, I will summarise the refinancing experience in UK, where the research strategy of a case study is used to investigate the different policies that have been applied at different stages. The second part is mainly literature review, which are further divided into three sub-divisions, examining the refinancing issues from both debt funders' and public sector's point of view. In the literature review, the theories of risk allocation and risk pricing, game theory and agent theory are utilised in order to show the whole picture of financing issues in PFI contracts. After the literature review, an empirical research in form of interview survey is conducted in order to test the hypothesis drawn from the literature review.

1.5 The structure of the report

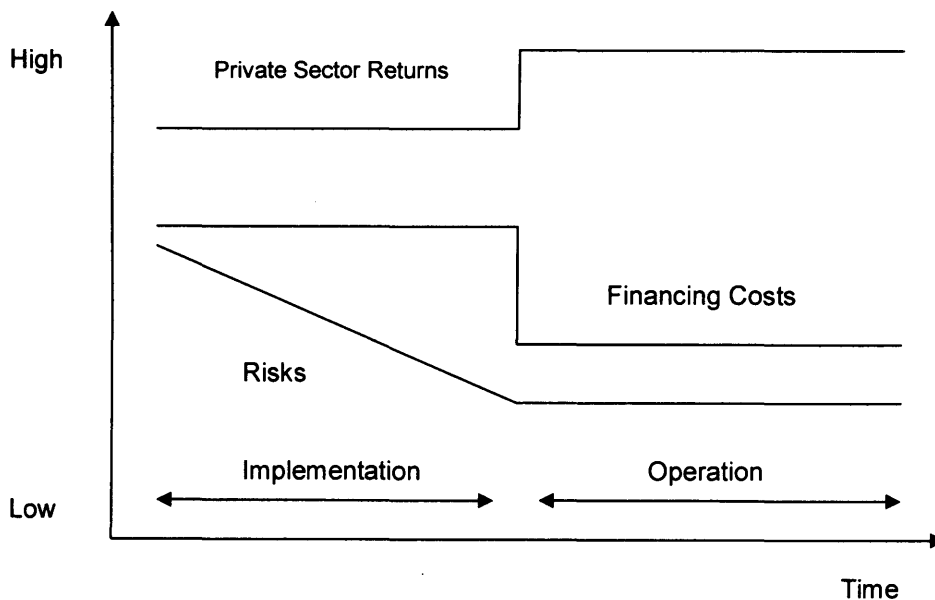


Chapter 2 Tracing the Refinancing History in UK

2.1 What is refinancing

Refinancing is an established technique that is often used in project finance. Broadly speaking, it could refer to any changes to a project's original financing arrangement. Refinancing tends to fall into two categories; rescue refinancing, for the purpose of rectifying or avoiding actual potential default under existing financing arrangement, and, refinancing gains, with the intention of improving the financing terms in a successful project (Yescombe, 2002). Analysis in this report all refers to the second kind of refinancing.

To PFI Companies, the cost of finance is one of the most expensive ingredients in a PFI contract. If the cost of financing a PFI contract can be cut, the PFI Company could achieve a big increase in profitability. In project where risks have been successfully managed (after the service been successful delivered), this kind of opportunities occurs as the contractor could take advantage of more advantageous financing terms that can improve



Source: National Audit Office (2002)

Figure 2.1 Relationship between risk and returns

the project's cash flow. The relationship between risk and returns in a typical PFI contract is shown in Figure 2.1.

2.2 Situations may give rise to refinancing gains

The definition for refinancing gains in the section 2.1 is simple. However, in practice, it is very hard to list all the situations that may give rise to refinancing gains. Figure 2.2 shows some typical situations.

Changes in financial arrangements that may indicate a refinancing

There has been an increase in the number of years over which the consortium will repay its financing

There has been a change in the consortium's finance provider

There has been a reduction in the "margin" used to determine the amount of interest payable on the financing

There has been a reduction to the consortium's borrowing costs as a result of fixing interest rates lower for the balance of the contract term than had been expected at contract letting

There has been a repayment to the consortium's shareholders of some or all of their equity or subordinated debt (usually facilitated by introducing into the project new finance from other sources)

Constraints on dividend payments have been removed or eased

There has been a change in the financing arrangements that allows the reserve accounts to be reduced or released

Source: National Audit Office (2002)

Figure 2.2 Refinancing situations

2.3 Early approach to refinancing (1992 – 2001)

In this section, I will review refinancing experience in UK from the public sector's point of view, with the emphasis on the policies applied during different phases. Through this history tracing, not only could show the whole picture of refinancing, but also could be the foundation for further analysis in the next three chapters. In section 2.3, I will describe the early approach and in section 2.4, the current approach will be discussed.

The PFI was introduced in 1992 and it was not until later 1990s did the public sector realize the potential significant gains that can arise from refinancing. In the Treasury PFI panel guidance on further contractual issues in 1997, all departments and their advisors were advised to consider the private sector's scope for refinancing and try to capture some of the benefits. The 1999 guidance (Treasury Taskforce Standardization of PFI contracts) proposed that the awarding authority should only be entitled to share in refinancing benefits 'in strictly limited scenarios'. Both of the guidance did not establish a general principle of sharing refinancing gains.

In June 2000, the National Audit Office produced a highly critical report, 'The Refinancing of the Fazakerley PFI Prison Contract'. This concluded that public bodies "should consider what provisions they should make to share in some of the financial gains and whether their consent should be required before a refinancing can proceed" (NAO, 2000a). It added that benefit should be shared between contractors and the departments.

Yet, it was only in July 2001 that the Office of Government Commerce (OGC) issued guidance on its website on the refinancing of PFI projects. This repeated the much earlier view of the NAO that the benefits of refinancing should be shared between departments and contractors. The OGC revealed that it had commissioned Partnerships UK - the private sector led body, which advises public bodies on PFI contracts - to draft new guidance on refinancing, which was published in autumn 2001. This represented a delay of over a year from the NAO report, even though it exactly implemented the NAO's view of what should happen. Until then, the public sector generally reached an agreement and a series of research surveys were being undertaken by the public sector and its advisors.

From 1992 to the early 2000s, it cost nearly one decade for the public sector to form a general principle about the share of refinancing gains. It reflected that there had been a lack of knowledge in departments about refinancing in the early days of the PFI. Firstly, private finance and project finance had been used to fund public infrastructure for

decades, but these arrangement didn't usually include contractual provisions for the public sector to share in refinancing gains. Secondly, the public sector didn't anticipate such huge opportunities for refinancing gains. Plus, the public sector also was not quite sure that sharing in refinancing benefits would necessarily result in good value. There could be risks that contractors might seek a price increase in order to compensate for sharing later potential refinancing gains.

The early approach to refinancing also reflected the public sector's desire to stimulate the PFI market, which is believed could be damaged if inappropriate claw back arrangements were entered into. From the public sector's view, it considered that the contractors would be reluctant to bear the PFI risks if they were being required to share the potential refinancing benefits with departments.

The comparably conservative policies in the early stage left huge room for the private sector to create refinancing gains and to retain those gains. According to the survey conducted by the NAO, only 26 per cent of contracts let before June 2000 had a sharing arrangement. Only half of these would require the authority's approval for a refinancing, with an agreed basis for sharing refinancing gains (NAO, 2000, b). Also, it showed that the level of deals with sharing mechanism began to rise after the standard contract terms were issued in 1999. (Shown in the Figure2.3)

Contracts let:	Prior to June 2000	Year to June 2001
Contracts with at least a 50% share	4%	4%
Contracts with a share of 30%	4%	23%
Contracts with a share of less than 30%	18%	27%
Total with some share of refinancing gains	26%	54%

Source: National Audit Office survey 2002

Figure 2.3: Proportion of early PFI contracts with arrangements to share refinancing gains

2.4 New approach to refinancing in both early and new deals

After the June 2000, the OGC took promote steps to start to develop a new approach to refinancing both for the early deals and for the new deals. With the help of PUK and the assistance from the Treasury Private Finance Unit, the policy of 30 per cent share of refinancing benefits had been applied to those early deals and 50-50 policy had been established to new contracts.

2.4.1 Changing approach to refinancing in early deals

It has not been easy to establish arrangements in early deals. Because many of the early deals did not have contractual arrangement to share refinancing gains, there was no contractual obligation on the private sector to agree to share. This means that the public sector was in a weak position in the bargaining over refinancing share (discussed in the Chapter 4). Therefore, the OGC has undertaken robust negotiations with the private sector in order to gain the private sector's support for a voluntary code for sharing refinancing gains on early PFI deals.

In October 2002, a voluntary code of practice for early deals was launched. Under this code, departments will generally receive 30 per cent of refinancing gains on early deals where the contract does not provide for a share of such gains. Where existing PFI deals have clear contractual arrangements for the public sector to receive a share of refinancing gains then those arrangements will continue to apply, except in certain cases where the contractual share to the public sector is less than 30 per cent.

The voluntary code is used as the basis to authorities for negotiation on any future refinancing of early deals. However, as refinancing is a complex topic which will be new to many officials in the public sector, the PUK concerned that some refinancings may have taken place without departments being aware. To address this lack of awareness, the new refinancing taskforce within Partnerships UK provided direct technical support to

departments to help them understand refinancing. The OGC's skills training programme launched in September 2002 included training on refinancing. Departments would be encouraged to take a more proactive approach to monitoring the financing structures of PFI contractors.

In the survey conducted by the NAO, the public sector had received £17.5 million from 12 completed refinancings which had been reported to the National Audit Office (Figure 2.4). The OGC estimated that its new voluntary code relating to past PFI deals would provide the taxpayer in the region of £175 million to £200 million assuming that all contractors complied with the code.

	Number of refinancings	Amount received by authorities
Share of gains to authority:		£m
50% or more	2	8.9
30-33%	4	7.2
Less than 30%	2	1.4
No share (Note 1)	4	-
Totals	12	17.5

Source: National Audit Office survey 2002

Figure 2.4: Summary of completed refinancings reported to the National Audit Office

Notes

1. The department reported on one deal that the benefit of the refinancing gains had been built into the contract price before contract letting.
2. The total refinancing benefits from these 12 completed refinancings were about £65 million.

2.4.2 Changing approach to refinancing to new deals

Before issuing guidance on refinancing to new contracts, the OGC, with the help from PUK, carried out a series of researches in order to make the new policy acceptable and practicable. The key topics were:

- Whether it would be better to have a fixed arrangement applied to all projects or more flexible arrangement that required project-by-project negotiation;
- What constitutes a refinancing and how refinancing gains are measured; and
- To secure departments' and the private sector's agreement to the new arrangement.

In order to answer the first question, it needed to consider whether it would be possible to identify the windfall refinancing gains ex ante and to use it as the basis for negotiations about refinancing gains share. The OGC and the PUK believed it could be hard to try to identify genuine windfalls. Furthermore, project-by-project negotiation would be time-consuming and costly both for the private and public sectors. The OGC then decided that a fixed 50-50 sharing arrangement would be more practicable.

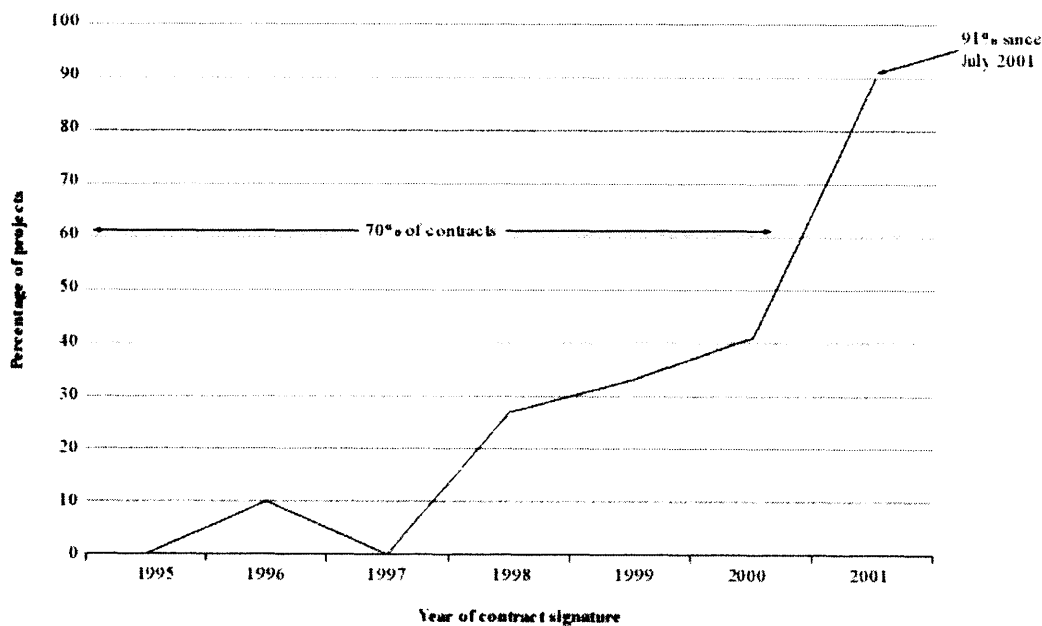
It is not easy to attempt to measure refinancing gains as there are many different types of refinancing and many possible ways of calculating the refinancing gains. From the OGC's concern, the new policy should ensure that the benefit which the private sector would be required to share with the public sector would be equitable and not jeopardize the value for money of the deal to public sector (NAO, 2002).

The OGC then need to secure that both departments and private sector reached agreement to the new arrangement. This work started from the early 2001 and lasted until the middle of 2002. During this period, the OGC embarked on extensive consultation with departments, the NAO and private sector contractors and financiers. By early 2002, the

OGC considered that it had largely secured private sector agreement to the 50-50 sharing principle. In July 2002, a revised guidance on refinancing for new contracts was published by the OGC, which could be regarded as the outcome of extensive work been conducted for the past two years.

After the publishing of the new guidance, a considerable attention was given to the detail of how the new policy would operate. From the public sector's point of view, it might take some time for the new policy to be adopted, but it had been observed that better refinancing arrangements are being secured, with most contracts sharing benefits 50-50 (Figure 2.5)

This figure shows that 70 per cent of PFI contracts were let prior to June 2000 when most PFI contracts did not have clear refinancing gain sharing mechanisms. The proportion with such mechanisms has increased substantially in recent years and rose to 91 per cent for contracts signed since July 2001



Source: NAO Survey (2002)

Figure 2.5 Percentage of projects with refinancing gain-sharing mechanisms

Notes:

1. 68 per cent of all new contracts signed since the publication of the NAO report on the Fazakerley refinancing in June 2000 reported a mechanism for sharing refinancing gains.
2. This proportion is on the increase, with 91 per cent of contracts signed since June 2001 having such mechanisms

Further, as we mentioned before, The OGC's skills training programme launched in September 2002 included training on refinancing. In this training programme, Departments were encouraged to take more proactive role in monitoring the financing structures of PFI contractors. Departments would have an incentive to discuss and encourage contractors' plans to refinance as the Treasury would allow departments to retain the benefits they received from refinancings. It could be in the departments' interest to be more proactive by incentivising contractors to pursue refinancing opportunities since they would share in the gains that arose from refinancing.

2.5 Summary

In this part, we outlined the timeline of refinancing policies been applied by the British public sector (Figure 2.6). Rather than just showing a picture of refinancing history, we also have had an insight into the influences on the private contractors of the policies been applied. Based it, the next three chapters will examine the refinancing issues from a theoretical view. In Chapter 3, private finance and the risk sharing mechanism embodied in PFI contracts are introduced, which are the theoretical core to understand why the refinancing is possible. In the Chapter 4, the bargaining theory from the game theory is applied in order to analysis the 'bargaining game over refinancing gains' between the public and private sector. Further issues are discussed in the chapter 5, with emphasis on some recent innovations in financing PFI projects.

Date	Guidance	Recommendations
1997	Treasury PFI Panel guidance on further contractual issues	Consider the scope for refinancing and try to capture some of the benefits
1999	Standardisation of PFI Contracts - HM Treasury	It may be appropriate to share refinancing gains in limited circumstances
June 2000	NAO report on refinancing of Fazakerley prison	Benefits from reducing costs in a developing market should be shared. Compensation should be obtained for increased termination liabilities
July 2000	Letter to all principal finance officers from HM Treasury	Departments to consult with experts and the OGC. More guidance will be published later in year.
November 2000	OGC Circular to PFU Heads	Departments should seek an equitable outcome on refinancings of existing contracts. Seek compensation for any increased liabilities and 50/50 share if departmental approval is needed
December 2000	Deutsche Bank appointed as financial adviser to assist with financing issues	
March 2001	PAC report on the refinancing of the Fazakerley prison contract	Departments should receive a 50/50 share of all refinancing gains
April 2001	Drafting of new guidance commenced	
July 2001	OGC Circular of November 2000 was posted on the OGC website and PFU Heads and PFOs notified	
August 2001	PUK start to develop approach to negotiating with private sector on sharing refinancing gains on past deals	
Autumn 2001	Letter from the Chief Executive officer of the OGC Accounting Officers which explained the OGC approach to all refinancings Drafts of revised OGC refinancing guidance circulated to departments and discussions take place OGC/PUK conference which conveyed the emerging approach to contract guidance, including refinancing to a large audience	Revised guidance aimed at 50/50 sharing of refinancing benefits in most situations
December 2001	New draft revised general guidance (including refinancing) circulated to private sector	
January 2002	Draft report on refinancing of past deals completed by PUK	
Spring-Summer 2002	Ongoing consultation with departmental PFUs and private sector about new guidance for future deals and basis of sharing refinancing gains on existing deals	
July 2002	Revised refinancing guidance in final form available on OGC website as part of revised general guidance	50/50 sharing of refinancing benefits in most situations
October 2002	OGC launched voluntary code of practice for early PFI deals with CBI support	Departments will generally seek to receive 30 per cent of refinancing gains on deals where the contract does not include an explicit sharing arrangement

Source: National Audit Office from OGC and PUK records

Figure 2.6 Timeline of production of guidance on refinancing

Chapter 3 Understanding Private Finance and Risk Allocation in PFI: why refinancing is possible, debt funders' perspective

3.1 Introduction

PFI arrangements usually involve three groups: the public sector agency, the private consortium that builds and supplies the services, and the bank or other financial agency (debt funders) that funds the programme. In this relationship, the public-sector agency will be bound to an agreement with the consortium and the consortium will be bound to the bank, there will be no link in general between the bank and the public agency. In this chapter I will focus on the financial relation between the consortium and its banks. In the next chapter, the relation between the public sector and the private sector is explored.

To date, the sources of funding available to finance PFI projects have predominantly been the methods generally associated with traditional project financing. The underlying principle of this kind of financing is that recourse of the funders is limited to the cash flow or revenues of the project and, to a limited degree of the project assets. Therefore, risks allocation is the major concern for debt funders as they must make sure that the risks are transferred to a manageable level. Hence, the analysis of risk sharing and risk pricing form the core of this chapter. Before this, a justification of private finance in the provision of public services is addressed.

3.2 Justification of Private Finance

The involvement of the private sector in the provision of public services always has two distinct elements: operational and financial. The arguments for the separation of the two kinds of activities mainly come from the trend towards separating operational risks from financial risks (Jemkinson, 2003). The operational involvement always takes the form of design, construction and operation of a facility. Theoretically, these activities always separate from the pure provision of finance, although in practice they are always

combined together. In the case of operations, the justification for the involvement of the private sector mainly comes from efficiency considerations: the private sector is thought to be cost efficient, innovative and more flexible (see Hart, Shleifer and Vishny, 1997). In contrast, finance in most situations could equally well be raised by the public sector or the private sector. Therefore, the participation of the private sector in financing PFI projects needs to be justified.

There is a common misconception that public finance is cheaper than private finance because the government can borrow on a sovereign basis. Advocates of this view point out that the government can fund the project at a risk-free rate while the returns required by the private sector's financiers are 3-8 per cent higher. However, this misconception contradicts one of the key foundations of corporate finance established by Modigliani and Miller in 1958. Under a set of assumptions, they proved that the overall cost of capital – the minimum return required by investors in a project – is invariant to the method of financing (Explicit discussion can be found in Brealey and Myers, 2003 and Grout, 1997.) That is to say, the overall cost of capital is determined wholly by the underlying risks associated with the project rather than by the way in which the project is financed (whether publicly financed or privately financed).

A question arises: if the risks associated with a project are the same regardless of who provides the finance, why does it matter who provides the finance? Or put another way, why do we always feel that private finance is costly? In order to answer this question, we should bear in mind that the above principle rests on a number of important assumptions, such as no transaction cost and no information cost. In some situations, where contracts are easily defined, risks are well understood and transaction cost are low, then the cost of private finance and public finance are likely to be similar. Unfortunately, for most public services, such conditions do not hold. Consequently, private finance is typically more expensive – after including transaction costs and the impact of incomplete contracts.

If private finance is more costly, why are governments still so keen on it? Apparently, it is

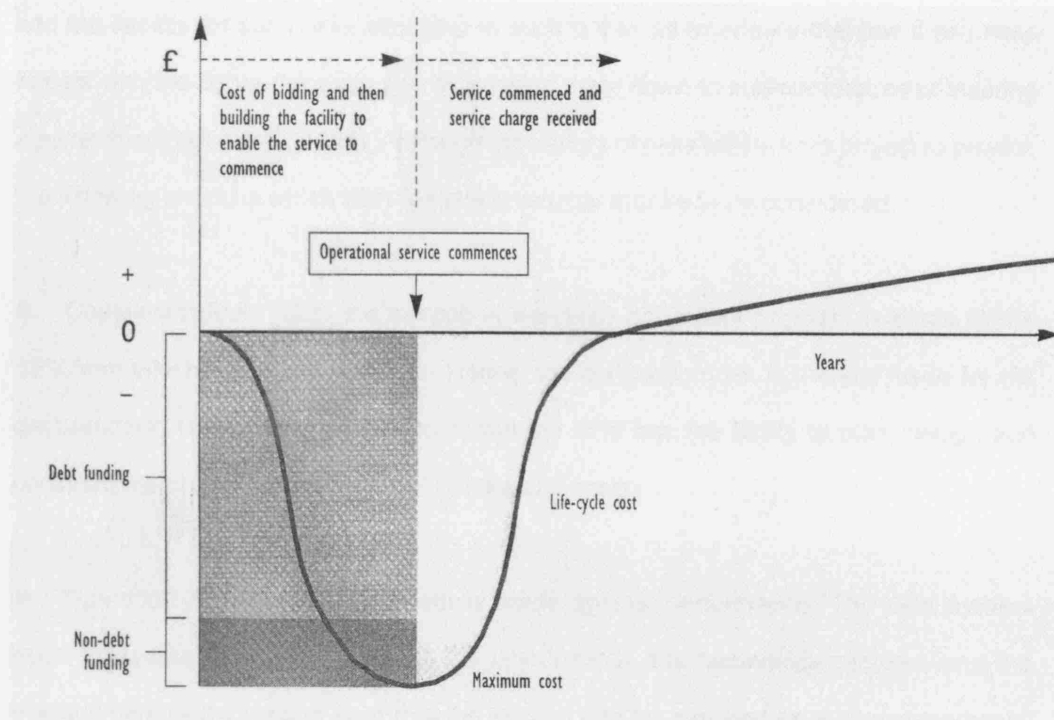
because private finance could improve the infrastructure in key areas, such as education and health sectors, while at the same time not impacting on the public sector borrowing requirement (PSBR). Recently, it has been argued that the private sector may be better at evaluating risks than the public sector, and hence the involvement of private finance results in better investment appraisal (Jemkinson, 2003). In the next part, I will focus on the risk allocation of the private sector. Before that, it is useful to have a look at a typical financial structure of a SPV.

3.3 Typical funding structure

As mentioned in the introduction, almost all PFI projects have been financed on a limited recourse project finance basis. This is achieved by establishing a special purpose vehicle (SPV) which holds no other assets apart from project assets and which conducts no business other than that specified by the project agreement (Fox and Nicholas, 1999).

It is usual for PFI projects to be funded, at least in part, by equity investment. The proportion could range from 5 per cent to 15 per cent of the total costs, depending upon the risk profile of each project. A riskier project will require more equity to bear the incremental risk. Indeed, the contribution of an agreed proportion of equity may well be a condition of the award granting the concession and a precondition to the availability of third-party funders' debt facilities (Fox and Nicholas, 1999).

PFI projects rely heavily on bank debt. The proportion of bank loans could amount to 85 per cent to 95 percent of the total project cost. Depending on the size of the project and the quantum of funds required, bank loans to a project may be syndicated to a number of commercial banks or financial institutions, each lending under the same terms and conditions. Figure 3.1 illustrates the cash-flow profile of a project and indicates the debt to non-debt finance requirements.



(Source: CIC, 1998)

Figure 3.1 Cash-flow profile of a project

3.4 Debt funders' common concern and objectives

In order to decide whether a project is "bankable" or not, a detailed analysis of the project and the risks inherent in it is required. Debt funders generally appoint their own independent advisers (including legal, technical, insurance and other feasibility study advisers) and conduct their own extensive due diligence on the project. In this sub-section, I will discuss how financiers assess risk and how these risks are priced in terms of interest rates in a competitive market.

3.4.1 Risk allocation

The objective of PFI financing has evolved around the concept of allocation of risk. The primary goal of the debt funders will be to ensure that the risks encountered at each stage of the project (pre-construction, construction and operation) have been properly analysed

and the liability for such risks allocated in such a way as to ensure that few if any risks remain with the SPVs (for example, by passing them down to sub-contractors or insuring against them) (Mumford, 1998). Although the variety of risks differs from project to project, the following are risks which debt funders invariably require to be considered.

- *Completion Risk* Until the service is delivered no unitary payment is made to the SPV from which to service the debt. Hence, the completion risk is the key issue for the debt funders. They must be convinced that the SPV has the ability to plan, design and construct the project without overrun of time and costs.
- *Operation Risk* In PFI, payment is made against performance. The debt funders need to assess the competence of the labour force, the technology required and the management skills, making sure that the service can be provided on a continuing basis. There should also be an analysis of the performance and payment mechanism, to determine to what extent and how quickly deductions could be made from the unitary payment.
- *Pricing Risk* The pricing risk refers to the accuracy of the cost estimate. Funders will wish to be satisfied that both operating costs and capital expenditure are realistic and that allowances for contingencies are taken into consideration.
- *Revenue Risk* The debt funders will wish to ensure that the unitary payment is robust and secure enough to serve their debt. In order to do this, they try to minimize the possibility of under performance of SPVs and all other possibilities which could reduce the income stream of the project company.
- *Awarding Authority Risk* Funders wish to consider what the client body is, whether it is a central government ministry, a semi-autonomous body or a local authority. The type of the clients is important for several reasons, including its power, its likely lifetime and its financial covenant (CIC, 1998, CIC, 2000). In the case of NHS Trust, the bankers once

refused to lend money to bidding firms entering into contracts with NHS because the debt funders were unconvinced the NHS had the power to enter into the transaction and perform its obligation. Concerns as to the covenant of NHS Trust led to the enactment of the NHS Act 1996 and the Local Government Act 1997.

- *Change of Law Risk* The effect of changing the law during the lifetime of the project will be a matter for negotiation between parties. In essence, from the banker's perspective, the risk is that a change in the law will increase the cost to the SPV of completing its obligations. Therefore, the debt funders are prepared to accept a measure of change of law risk, subject to the nature of the change of law and its effect.

- *Sponsor/Contractor Risk* Not only is the revenue of a project expected to be robust, but bankers may also need to assess the "sponsor risk": the financial, managerial and technical skills of the sponsors who stand behind of the project. Bankers will not lend money to a project company unless the consortium qualifies in terms of certain minimum attributes.

The above is just a broad outline of the risks that debt funders require to be considered. Given that these risks vary from project to project, an independent examination of the likely requirements for the successful operation of the particular project is required. In the next two sub-sections, we will have a look at how these risks are priced, both in theory and in practice.

3. 4. 2 The price of risk: in theory

According to Grout (1995), one of the three criteria that a PFI deal should satisfy is that "a substantial amount of risk must be transferred into the private sector". However, the private sector will not bear these transferred risks for free. If risks are to be passed from the public to the private sector, then there will be a competitive price for that risk.

At a basic level, we may assume an investor holds a market portfolio. With such a diversified market portfolio, a great many risks are reduced, but the market risk – the exposure to shifts in the whole market still remains. The value of an individual asset to this investor will depend on how much it reduces or increases the exposure to market risks (assumedly the return on a specific asset is perfectly correlated with the market). If the asset pays a higher than the average rate of return in the market, the investor would like to buy a little more and conversely, the investor will try to sell some of it. In equilibrium, the return on an asset that is perfectly correlated with the market must offer an expected return equal to the average in the market, i.e. the risk-free rate plus the market premium. This is the price of risk in a competitive market (Grout, 1997).

The Capital asset pricing model (CAPM) – introduced by Sharpe (1964) and Lintner (1965) (see also Brealey and Myers, 2003), formalizes this idea. It states that the equilibrium expected rate of return for asset i is given by

$$\text{Expected return on asset } i = \text{risk-free rate of return} + \beta_i \text{ * the market risk premium}$$

where β_i is the weighted covariance between the return on the asset and the return on the market portfolio. If β_i is one (the asset is perfectly correlated with the market), the equilibrium return on the asset is the return on the market portfolio. If β_i is zero (there is no correlation between the asset and the market), then the equilibrium return is the risk-free rate of return.

The CAPM provides a measure that can be used to assess the risk transfer involved with the PFI. The idea is that the price of the risk can be thought of as the expected return on an asset, since the equilibrium expected return is the return that is necessary to compensate investors for the risk of the investment they are undertaking. It is the price that must be paid to investors to persuade them to hold the risk.

The CAPM offers an elegant theoretical treatment of risk. For example, the building element of a project is usually low risk in the CAPM sense. Although there are some

uncertainties in building activities, they still can be seen as low-beta or zero-beta activities as they are unlikely to be correlated with the market. On the other hand, the revenue stream may be far more risky as cash flow depends on performance. Therefore, the rate of return required to persuade an investor to exchange money today for the uncertain cash flow tomorrow is higher.

It might be said that the CAPM model is abstractive as most of the key parameters required to estimate the cost of holding risks, such as the beta for each kind of activities, are not directly observed. In practice, a more straightforward method is utilized, introduced in the following sub-section. The CAPM model does at least give us an idea of how the expected return (interest rate in particular) relates to the risks involved in a project. It is because risks are substantially reduced after the successful delivery of the service that refinancing is possible as more favorable interest rates can be applied.

3. 4. 3 The price of risk: in practice

Financiers have plenty experience in arranging finance for their clients. Although the PFI is a comparatively new method of financial arrangement, the financiers can still 'borrow' the skills and expertise in traditional project financing in arranging finance PFI deals. Therefore, rather than calculating by themselves, the debt funders just need to look at the interest rates on public traded bonds to see the current market price of particular forms of debt finance. It may be expressed as "interests at 10.5% a year compounded yearly", or it might be expressed in more indirect terms as "3% above the current London Inter Bank Offer Rate (LIBOR). LIBOR is a very low-risk rate used by banks to settle balances between themselves: it has the advantage that it is closely linked to other current interests rates, and it is widely publicized, so that day-to-day movements will be easily monitored. Using LIBOR, the rate will not be predictable over the whole life of the project, so investors will need to be convinced that the project will have a positive NPV at any of the most plausible rates of interest.

The second way is widely utilized in PFI deals. As a typical PFI contract lasts 30 years, reflecting the risks more accurately, different interest margins (the interest margin is the additional interest cost, over and above the base rate for commercial borrowing, as represented by LIBOR, to reflect the specific risks of the project) are applied during the construction and operation phases.

For example, in the case of Norfolk & Norwich Hospital, where 20 year bank loans were provided by syndicated banks lead by ABN Amro, the interests rates are:

Construction: LIBOR + 135 bp

Operation: LIBOR + 125 bp

where 135bp means the interest rate is 1.35 per cent age points above the LIBOR.

3. 4. 4 Other concerns from the funders' perspective

In sections 3.3.1 to 3.3.3, I addressed the most important consideration, risk allocation, from the funders' point of view. Besides that, the funders will also evaluate the security package of the project, i.e. insurance and the step-in rights when things go wrong.

- *Insurance* Insurance is specifically designed to reallocate the sharing of risks. It is in all participating parties' interests to ensure that the project is adequately and properly insured during the construction and operating phase of the project. For example, once risks have been accepted by the project company, the debt funders would like to make sure that these risks are passed down to sub-contractors or, in some cases, to insurers.
- *Step – in rights* Because of the long-term bonding relationship and the nature of limited recourse project financing, the financiers that provide capital for PFI projects are vulnerable to long-term risks. For this reason, banks will usually seek the maximum possible security in various ways. For example, the banks usually insist on contracts being made as complete as possible, looking carefully at all scenarios

which may result in the termination of the project agreement, despite the high transaction costs that this entails. (As I discussed above transaction costs make private finance more expensive.) In the case of project company default, the financiers will commonly negotiate a direct agreement with the awarding authority, allowing the debt funders to remedy the service or otherwise to “step in”. In this negotiation, the appointment of a receiver, or a substitute entity to perform the service or ultimately sell the project company to the third party would be a concern for both parties.

3. 5 Decrease of general interest rates

Not only does a the significant decrease of risks after the service being delivered make refinancing possible, project companies also have benefited from falling general interest rates since early 2000.



Source: Bloomberg websites

Figure 3.2 Interest rates 1995 - 2005

3. 6 Summary

In this chapter, we examined the financial issues in PFI deals from the debt funders’

perspective. The risk transfer from the public sector to the private sector is the core of PFI contracts as it is widely accepted that the private sector is good at evaluating and managing risks, although it may mean that private finance costs more (transaction costs).

After introducing the common risks financiers need to consider during different stages of the project, I modeled how these transferred risks are priced in the competitive market using the CAPM. In practice, the key parameters required to estimate the cost of holding risks are hard to be observed. Therefore, a more practical method, LIBOR + Interest margin, is widely used in practice.

In this chapter, we focus only the relationship between the project companies and their debt funders. We have gained an insight into how the project companies make refinancing possible by benefiting both from the reduction of risks in the project and from the falling of general interest rates. However, this is just one side of the coin. In the next chapter, I will focus on the story happened between the public sector and the private sector: bargaining over refinancing gains.

Chapter 4 Bargaining over Refinancing Gains between Public Sector and Private Sector: Public Sector's Perspective

Part One Bargaining Models

4.1 Introduction

In many situations, parties divide a “cake”. In the case of refinancing share, the private sector and the public sector divide the total refinancing gains generated by refinancing the project. In this part, I will explore the rationality of refinancing sharing from the public sector's perspective. In order to do so, three different models that are intended to capture “bargaining” between the two parties are discussed:

- The first is the entry model, which is used to answer the questions why the public sector which wants to capture refinancing gains from the private sector. Put it in another way, why the private sector chooses acquiesces rather than arguments.
- The second model illustrates early deals where there is no clear arrangement to share refinancing gains. Thus, each awarding authority needs to renegotiate with each consortium, hoping to reach an agreement on the refinancing share.
- The third model refers to new deals, where both parties bargain ex ante over the refinancing gains created by ex post.

4.2 Assumptions

- **Non-cooperative game** According to Rasmusen (2001), the real difference between cooperative and non-cooperative games lies in the modeling approach. Cooperative game theory is axiomatic, frequently appealing to Pareto–optimality, fairness and equity. Non-cooperative games solution is based on players maximizing their own utility functions subject to stated constraints. Although the public sector will take the

efficiency and fairness into consideration, we still suppose that the main aim of the public sector is to gain the refinancing “cake” as much as possible on the premise that it does not distort the incentives to the private sector. The aim of the private consortium, similarly, is to retain the refinancing gains as much as he could without taking the risk of being excluded from future PFI deals by the public sector. Thus, all games in my analysis are non-cooperative, which excludes side-payments.

- **Perfect information.** We assume the information is “common knowledge” to both parties, as each player knows what the game tree looks like, as each player also knows that the counterpart knows what the game tree looks like.

- **Infinite horizon.** We assume, in games where the private sector is given the opportunity to make a counteroffer, there is no deadline. That is, the private sector may propose alternate offers indefinitely. However, it does not necessarily mean the bargaining game will last forever, as both are well informed and are aware of the cost of delays, the **subgame perfect equilibrium*** always reach in the first round (at least theoretically).

- The analysis aims to find out the proper share proportion for *each particular case*. Therefore, apart from the model I , which models the entry game between public sector and private sector on a general level, all others model bargains between individual awarding authority and the counterpart consortium.

4.3 Model I : entry game

This game happens at the very beginning. The public sector may decide whether to enter the “refinancing market” or not. If it enters, the private sector as a whole needs to decide either acquiesces or fight.

*Subgame perfect equilibrium is an equilibrium where the strategies are a Nash equilibrium. Within each subgame, the parts of the strategies relevant to the subgame make a Nash equilibrium of the subgame

This situation is modeled as an extensive game with perfect information. Osborne (2004)

states an extensive game with perfect information consists of:

- A set of players;
- A set of sequences with the property that no sequence is a proper subhistory of any other sequence;
- A function that assigns a player to every sequence that is a proper subhistory of some terminal history;
- For each player, preferences over the set of terminal histories.

In the case of sharing refinancing gains, suppose the best outcome for the public sector is that it enters and the private sector accepts, and the worst outcome is that it enters and the private as a whole fights, whereas the best outcome for the private sector is that the public sector stays out, and the worst outcome is that it enters and there is a fight. It could be shown as following and illustrated in Figure 4.1

Players: the public sector and the private sector.

Terminal history: (In, Acquiesce), (In, Fight) and Out.

Player function: $P(\Phi) = \text{Public sector}$, where the empty history represents the start of the game;

$P(\text{In}) = \text{private sector}$, which indicates the private sector takes an action after the history *In*.

Preferences: the public sector's preferences are represented by the payoff function π_1 for which $\pi_1(\text{In, Acquiesce}) = 2$, $\pi_1(\text{out}) = 1$, and $\pi_1(\text{In, Fight}) = 0$, and the private sector's preferences are represented by the payoff function π_2 for which $\pi_2(\text{Out}) = 2$, $\pi_2(\text{In, Acquiesce}) = 1$, and $\pi_2(\text{In, Fight}) = 0$.

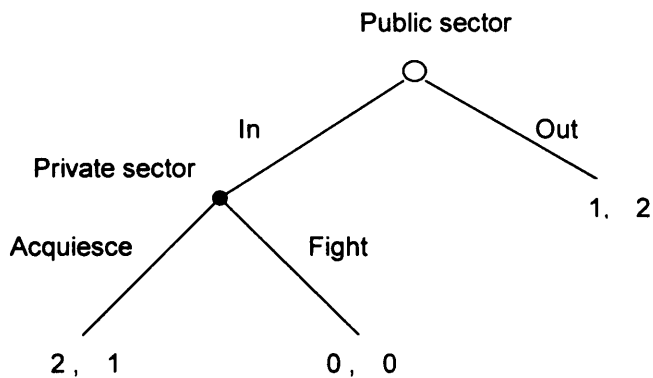


Figure 4.1 The entry game (The list of payoffs is in the well-defined movement order)

Applying the backward induction, we could easily find the unique subgame perfect equilibrium (In, Acquiesce), where each party's strategy is optimal, given the other player's strategy, both in the whole game and in the subgame following the history *In*. Hence, given the situation of public sector's entry, the private sector would choose acquiesce rather than argue as he fully realizes that arguing is not good for both of them (perfect information).

4.4 Model II ultimatum game: sharing gains ex post

This model refers to early deals, where the refinancing gains have already been created by the individual consortium for his successful delivery of the service. In such situation, the public sector would like to renegotiate with each consortium ex post, reaching an agreement on the share of refinancing gains. This renegotiation could finish within one round (rarely) or could last for several rounds, where the private consortium is given opportunities to make alternative offers (most situations). No matter in which situations, we assume that there is no cost of delay. That is to say, the amount of the refinancing gains will not change no matter when the agreement is reached.

Let us consider the first scenario where the renegotiation only lasts for one round. Assume the total refinancing gains from this particular deal is a , and the public sector asks for $a \cdot x$

per cent share of the whole gains. I suppose that if the private sector accept the deal (Y in the Figure 4. 2), he not only could get $(1-x) * a$ gains from this particular case, he could also get some extra 'values'(denote b) from the public sector, which could be in the form of a long-term relationship with public sector or cooperative manners from the public sector during the operation phase. If the renegotiation can not be reached, he could only get a . For the public sector, he could get $(a * x)$ if the renegotiation succeeds otherwise he gets nothing. This is shown in the Figure 4.2

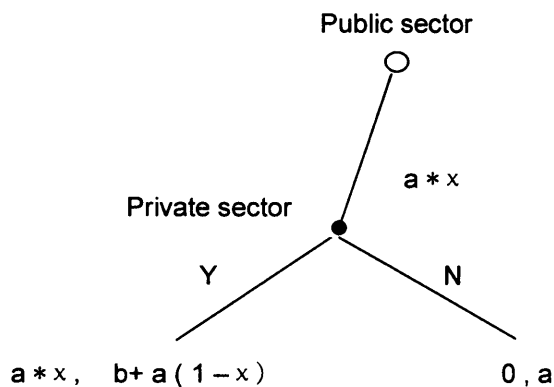


Figure 4.2

In this one round scenario, we could easily find the subgame perfect equilibrium by applying the backward induction. For the public sector, the best situation is that the private sector accepts the proposal. Fully realized that the private sector will accept if it is indifferent for him to accept or reject, the public sector will propose the x which satisfies

$$b + a (1 - x) = a \quad (1)$$

Solve the Equation (1), we could get

$$x = b / a \quad (2)$$

Substitute the pay off in the Figure4. 2 by Eq (2), we could see that, under the subgame perfect equilibrium, the public sector will ask for a (b / a) per cent share which could make the value he gets equals to the "values" promised by the public sector. The private sector could also get total a , although part of this is in the form of promised "values" in future. Thus:

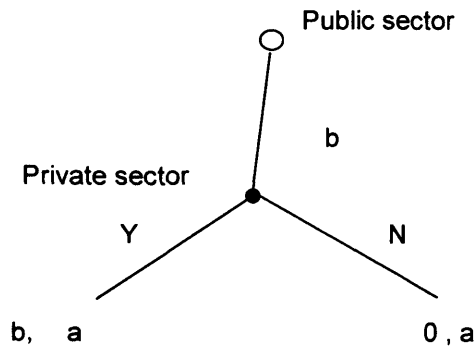


Figure 4.3

If the private sector is given the option of making counterproposals after rejecting the public sector's proposal, which the public sector may accept or reject, the whole game can last for several rounds. As both parties know exactly how the game tree looks like (as in my assumption), the private sector will reject all proposals which his total payoff less than a until public sector proposal sharing percentage (b / a) , reaching subgame perfect equilibrium.

From the analysis above we could see the sharing proportion x links to the b , the promised values from the public sector, and a , the total refinancing gains from the deal. The value of a is set, so the more the private sector cares about b , the higher x he would like to share with the public sector. Different consortium will have different values of b , therefore, different case will have different sharing percentage. Among this analysis, there are two important assumptions we need to bear in mind. First, although the private sector gets the whole value equals a , only a part of it in the form of refinancing gains and the other in the form of "invisible values". The second assumption is that there is no cost of delay. In reality, renegotiations have costs both to the private sector and to the public sector, especially to new deals during the negotiation phase. Under such situations, discounting is appropriate.

4. 5 Model III alternating offer bargaining with constant cost of delay: Sharing ex ante

To new deals, there are two obvious characteristics differ from old deals:

- The size of refinancing gains created by the future consortium is uncertain. Both parties are aware that there would be some ^{ed} ~~expecting~~ refinancing gains (a) ex post, but it can not be measured ex ante.
- During the negotiation phase, although the private sector is given the chance to make counteroffers about the share of refinancing gains, he is also aware that negotiation has costs to both parties in terms of time and real money. Further, according to Rasmusen (2001), whether discounting is appropriate to the situation being modeled depends on whether delay should matter to the pay offs because the bargaining occurs over real time or the game might suddenly end. Thus, I denote δ_p and δ_c as the discounting factors of the public sector (P) and the consortium(C) and we have $\delta_p \leq 1, \delta_c \leq 1,$

In this bargaining game, we assume the refinancing gains (a) ex ante is set at first. Therefore, both parties negotiate about the sharing percentage (x, 1-x). This game begins with a $x=1$ proposed by P, if the C rejects, he will make a counteroffer, which the P could either reject or accept. This process continues in this way until an agreement is reached. If agreement is never reached, then they both receive nothing.

Based on the research of Stahl and Rubinstein ^(year), we could see this bargaining game of alternating offers has a unique subgame perfect equilibrium in which the players reach agreement immediately and the division is:

$$X^* = \left[\frac{1 - \delta_c}{1 - \delta_c \delta_p}, \frac{\delta_c (1 - \delta_p)}{1 - \delta_c \delta_p} \right] \quad (3)$$

Two things about this calculation should be noted:

- Even though the process allows for an unlimited sequence of alternating offers and counteroffers, in the equilibrium, the very first offer P makes gets accepted and the game ends in an efficient outcome. (No resources are wasted in delay). The whole analysis serves the function of disciplining the first offer, by making the public sector recognize that the C would credibly reject a less adequate offer.

- If $\delta_c = \delta_p = \delta$, then the P's equilibrium payoff π_p is $(1 - \delta) / (1 - \delta^2) = 1/(1 + \delta)$, which exceeds 1/2 (first – mover advantage), but approaches 1/2 as δ approaches 1. Thus, if the players are equally and only slightly impatient, the final bargaining outcome is almost symmetric (1/2, 1/2).

4.6 Lessons learned so far

In this part, three bargaining game occurs in the PFI refinancing market are discussed. In the very first entry game, the concern of being excluded from future PFI deals makes the private sector as a whole choose acquiesce rather than arguments. As to specific deals, I model two different scenarios: early deals and new deals. Several important lessons could be drawn from both Model II and Model III.

- Patience is an important advantage in bargaining. Let us consider the bargaining ex post first. In Equation (3), for a given value of δ_c , the value of π_p , the equilibrium payoff of the P, increases as δ_p approaches to 1. That is, fixing the patience of the C, the P's share increases as he becomes more patient. Symmetrically, fixing the patience of the public sector, the C's share increases as he becomes more patient. This could account for why the public sector gets a larger share in the negotiation ex ante as in the negotiation ex post, the public sector is less patient compared with the private sector.

In the model II, I assume both parties are extremely patient (δ close to 1). In reality, however, the private sector could refinance the project without the involvement of public sector ex post, as many early PFI contracts did not need the department to approve a

refinancing. According to the survey conducted by NAO, 29% of contracts let before June 2000 give the department no approval rights over refinancing, while a further 21 per cent have approval rights but only in limited circumstances. Thus, δ_c close to 1 and $\delta_c > \delta_p$. The more patient the private sector, the more refinancing gains he gets.

- Besides the patience, we have also seen from the model II that the refinancing share ex post relates to b , which denotes how much the private sector cares about the invisible values promised by the public sector, or, in other way, how much he cares about the value of a long-term good relationship with the public sector. The more the private sector values b , the more gains he would like to share with the public sector.

- For new deals, we conclude from the model III that the share proportion relates to the patience of both parties. If both of them are equally and only slightly impatient, the final sharing percentage could be (1/2, 1/2). This is based on a very important assumption that the refinancing gains is given, independent from the sharing percentage x . However, as the refinancing gains is regarded as a incentive for successful delivery of the public goods, the sharing percentage decided ex ante also influences the size of the cake --- the refinancing gains ex post. In next part, I will consider exclusively the relation between x and the size of the cake.

Part two Incentives Considerations for Refinancing Share

From the public sector's view, those refinancing gains that come from the improved market for financing PFI deals and lower general interest rates, but not arisen through a higher than expected standard of service from the private sector, should be shared with the public sector. Further, because deals will not have been priced in anticipation of windfall gains, the share of refinancing gains should have no impact on the pricing of deals. Private sector, on the other hand, regards the refinancing gains as rewards for management risks and delivery of service, particularly in cases of early deals where the PFI market is thought to be risky. If a higher than normal sharing proportion "X " is set, it

might give stronger than normal negative incentives to the private contractors, which obviously erode VFM to tax payer. In this part, I will address incentive issues by applying Agent theory.

4.7 Agent – Principal problem in refinancing share

At an abstract level it is useful to think of those who run affairs from day to day as the “agent” of a principal who invests, but take no part in running the affairs of the business. According to Grout and Stevens (2003), this problem arises because, first, the agent’s own objectives are different from the principal’s (divergent interests) and second, the agent has more information than the principal about how far it is possible for the principal’s goal to be met (information asymmetry).

Suppose during the Invitation to Negotiation, departments (the principal) wish to increase VFM by securing “X” percentage of whole gains under the premise that a service still could be successfully delivered. The agents, however, are much more self-interested and the main aim for them is to maximize gains by increasing revenue (including refinancing gains) and limiting costs. The principal should design an incentive scheme (including choosing X) that encourages the private sector to take the public goals into consideration while pursuing their own goals, as Besley and Maitreesh (2003) argue that the delivery (of public sector by the private sector) is effective when the goals of agents are well aligned with the principal’s mission.

Incentive contracts (Milgrom and John, 1992) and performance measurement are widely applied in PFI deals, with a lot of researches have been undertaken in order to design the incentive scheme. As to another kind of incentive scheme – sharing percentage X, not too many researches have been done so far. There could be two potential reasons: First, the factors decide the X are quite marginal. Incentive reasons, bargaining powers and even political issues could influence the sharing percentage to certain extents. Second, the sharing percentage X should differ from project to project. In other words, those factors,

such as incentive reasons, bargaining powers and political issues, affect the X differently in different deals. It is not the aim of this section to try to decide the proper level of X, what I am trying to do is to link the X with various kinds of post contractual opportunistic behaviors, as I argue that the proper X is that which could increase VFM while not pose the public sector to those ex ante risks.

The potential risks to the public sector that might occur ex ante are: (especially under the circumstances that a higher than the proper level of X is set):

- a) Refinancing gains may have arisen without the public sector being aware. This is caused by information asymmetry as I identified before.

- b) Contractors may seek a price increase to offset the contractual obligation to forgo the shared future refinancing gains.

- c) The refinancing sharing may have influence on incentives to contractors to perform throughout the contract period. If the X is set high, it is arguable that this potentially reduces the incentive for the contractor to perform well after the contract has been let.

In Chapter 6, a survey in the form of interview is conducted in order to test whether the current policy is suitable or not. The above three potential risks are used as criteria in this test, as I argue that the suitable policy not only increases VFM, but also avoids providing the private sector higher than normal negative incentives.

Chapter 5 Further Issues on Financing PFI projects

5.1 Introduction

In Chapter 3 and Chapter 4, refinancing is examined both from the debt funders' and public sector's perspectives. In this part, I would like to explore future issues, and try to distinguish a way forward. Fundamentally, I would like to enforce the question: Is it possible to eliminate refinancing by enhancing competition or, by other kinds of financial rearrangements?

Innovations in the field of financing PFI projects are hot issues in PFI. Among them, funding competition and new arrangements of funding structure, which relates to refinancing issues, will be examined in this chapter. As a part of literature review, I will discuss both of the innovations more theoretically, with a test in reality is being undertaken in the next chapter.

5.2 Funding competition and refinancing competition

It is widely accepted that as the PFI market is getting mature, as more and more finance agents are willing to enter into this market, the opportunities for refinancing will decrease. It might be true on a general level. To a specific case, however, because of the absence of competitive tension, a department may not gain a good price for the project, leaving huge room for future refinancing to the SPV.

That competition produces efficiency is a long-established law in economic theory. In competitive tendering, owners will gain more value if they could generate a competitive environment among bidders. In the case of PFI tendering, however, departments always find themselves in the position where the PFI procurement process does not produce a competitive environment. This occurs because there is only a single bidder or because of the time taken between selections of preferred bidder and financial close (OGC, 2001). In

such conditions, for a better VFM, the funding competition demonstrates its advantages.

The rationality of funding competition, as I argued in the chapter 2, is that financing is a different ingredient compared with design, build and operation. Therefore, while the synergies between D, B and O are clear, the advantage of arranging the financing at the same time may not be always obvious. Furthermore, as the financing risk is quite different from the operational risk, the separation of financing with other parts of a deal helps to manage both risks more efficiently.

5.2.1 Potential advantages of funding competition

The current practice in PFI procurement is to require contractors to demonstrate they have committed funding for a project at a relatively early stage. The funding package used by the bidding contract as the basis for their bid has to be competitively priced if he or she is to maximize his or her chance of winning. For this reason, the contractor will usually be tied with into a particular funder or group of funders until financial close of the deal. As I argued before, this approach may not always result in the best VFM for the public sector.

Funders are more likely to offer better terms if they are invited to bid against each other for the financing after a preferred bidder has been chosen. The following lists the potential advantages of funding competition:

- Obtaining better VFM from a transparently competitive process, especially in the absence of competitive environment. Furthermore, enhancing competition ex ante reduces the refinancing opportunity ex post.
- Persuading banks and other project funders to accept standard contract terms for future PFI projects. This will streamline the procurement process and reduce costs (transaction costs) for both the public sector and private sector.
- Better management of operational risks and financial risks.

5. 2. 2 Potential risks relate to funding competition

Running a funding competition is a tedious task, which involves new risks to the whole process. In some cases, the complexity of the competition process and the risks involved will outweigh the potential benefits. Therefore, before funding competition being chosen, understanding the potential risks inherent in funding competition is needed:

- A lack of market interest in the funding competition, perhaps more so where the decision is taken to exclude financing from the competition until after the Preferred Bidder has been selected;(OGC, 2002)
- Bids turn out to be less competitive than they might have been or the final bids may not be acceptable to the Authority – e.g. for affordability reasons – and as a result the project may be cancelled;(OGC, 2002)
- Delay of project. One of the risks in running a funding competition is that the procurement process will be lengthened, delaying the realisation of project benefits
- In relation to the potential for delay, there is a added risk that the cost of procurement may increase; and
- Costs of legal, financial and other services, as running a funding competition is a complex undertaking requiring experienced and qualified advisors for acting for both parties.

5. 2. 3 Suitability of funding competition

Because of the risks inherent in funding competition, before a competition is run, we need to understand the suitability of the funding competition. Put in another way, under what conditions a funding competition is more likely to be successful.

- According to the research conducted by NAO (2001), the funding competition is more suitable to simple projects in mature PFI sector, such as prison, roads and

accommodation deals. In such projects, funders could assess the risks involved and credit worthiness quickly. Funders will have a greater understanding of what the terms and conditions of such contracts are, and will know what has previously been considered commercially acceptable and there are a track records showing that these projects are deliverable (OGC, 2002).

More complex projects, where funders have little or no previous experience, may not be so suitable if funders need to undertake considerable due diligence, leading to many rounds of negotiations.

- The amount of funding required will influence the suitability of funding competition. The size of a deal will influence whether a funding competition is likely to generate interests from a number of credible bidders. Furthermore, it will also influence whether the funding may be provided by a single provider or by several providers. Generally speaking, as the required fund increases, there would be fewer financial institutions able to bid to provide all the funding needed.

5. 2. 4 Refinancing competition

In circumstances where the Authority has rights or otherwise expects to share in the benefits of a refinancing, similar principles will apply and a competition for the provision of an underwritten refinancing is most likely to yield best VFM. So the public sector should consider the possibility of refinancing competition when refinancing is conducted.

From the analysis above, we could see that the funding competition and refinancing competition are good choices for the public sector, ensuring that the financing package which supports the preferred bidder's solution is highly competitive. However, because of the risks of running such competitions, the public sector needs to conduct elaborate analysis in order to decide the benefits of holding competition is greater than the risks involved.

5. 3 New arrangement of financing PFI

Not only are there differences between financial risks and operational risks, there are also differences between short-term risks and long-term risks. If we could separate the financial risks and operational risks, whether we could also arrange the short-term and long-term financial risks differently?

As we argued in the Chapter 2, the new arrangement of risk allocation will neither increase nor reduce the risks involved in a project, as the risks are decided by the characteristics of the project rather than the way of sharing risks. Therefore, no matter what the public sector or the private sectors bear the long- term financial risks, the overall risks in will not change. Thus, according to the fundamental principle of risk allocation, risks should go to the side that is capable of managing it. Therefore, the core is to decide whether the new arrangement is suitable or not, and in addition, decide who is good at managing long –term refinancing risks.

From the public sector' view, they prefer the risks are been transferred to the private sector based on the idea that private sector is better at managing risks. However, the public sector should also bear in mind that the private business are not immune from risk. In other words, private contractors or its financiers will charge from assuming those transferred risks.

If the public sector bear the long –term financing risks, the PUK, the advisor of the public sector, needs to decide the interest margin (above the LIBOR) in order to reflect long-term risks involved in the project. The short – term financial risks, on the other hand, should still be assumed by private contractors.

The above arrangement is just an adjustment of long-term finance and short-term finance aiming at solving refinancing problem. Some researchers go even further, arguing that a new kind of organisational structure DBO + F are more suitable as it could solve incentive

problem inherent in the traditional arrangement. Rintala (2004) elaborates this new kind of organisational structure.

In the alternative structure, at financial close, the SPV would place only one DBO subcontract to a project management joint venture (PMJV). The PMJV would be a joint venture between the contractor invest company and the operator invest company. The PMJV would be designed not to make profit.

The PMJV would retain the responsibility for design management, construction management and facility management. This kind of arrangement will give the PMJV the ability to control all aspects of the service provision. Since the not –for –profit nature of the PMJV, it would only invoice the SPV for its costs in undertaking the project.

At the same time, the invest companies will receive their profits as dividend payment from the SPV. This profit would be the difference of the unitary payment stream and the payment for the PMJV for designing, building and operating the project plus the cost of finance repayment. In such conditions, the two invest companies could only increase their profits by reducing the amount that SPV pays to the PMJV.

The advantage of this new arrangement is that it removes the incentives to minimise the capital cost and the operational cost independently of each other. But in order to enable the SPV to finance a PFI using this type of structure, the contractor invest companies or its parental company will give the financier guarantees of completion of the project in a fixed cost (as in this kind of arrangement, the finance is more independent from other ingredients in PFI contract). Thus, if there were a significant problem in the execution of the project, the SPV would have to revert back to using traditional methods.

Chapter 6 Empirical Research on Refinancing issues in PFI Practice

6.1 Specification to the research methodology

In the previous three chapters, refinancing has been theoretically examined. Accompanying to this theoretical review, many conclusions I draw from the literature review need to be tested practically in the form of empirical research. In this dissertation, interview survey is undertaken as the main approach of the empirical research.

The purposes of undertaking the interview research include four aspects. Firstly, in a general level, it is essential to address whether private sectors and public sector are satisfied with the refinancing policies both to early deals and new deals. Secondly, as argued in the chapter 4, due to the fact that the sharing proportion to the new deals links to the incentives to the private sector, therefore, the proper sharing proportion should increase VFM to the public sector while also do not distort incentive scheme to private contractors. Hence, I would like to examine if the current refinancing policy is suitable according to this ^{critierion}~~critierion~~. Furthermore, refinancing opportunities will be reduced by enhancing ex ante competition, i.e. funding competition. Whether it is possible to eliminate the refinancing by enhancing competition? Last, the new financing arrangement means that the public sector needs to bear the long-term financial risks. This results in the issue that if public sector is happy to bear this kind of risk.

There are two parts in the design of the research. The first part is to decide which party should be involved in this survey. Since there are generally three important parties in PFI market, the public sector, the private contractors and advisors to both parties, therefore, the interviewees are chosen mainly from these three parties. The second part is to design question lists for both private sector's and public sector's interviewees. The question lists are shown in the Appendix 4

6. 2 Distribution and response

At the initial stage, a distribution of question lists through e-mail was undertaken. In this distribution, 50 samples of question lists were delivered. The proposed proportions for types of interviewees in the survey are: personnel from public sector and its advisors are 13 (26%), 37 (74%) personnel from 35 construction companies with PFI experience.

All samples (50) were delivered through e-mail on 8th August and till 25th August, to three persons from private sectors, one person from the public sector and one person from the advisor replied the e-mail, saying they would like to accept an interview. However, as the refinancing issues are more financial sensitive, the private contractors would like to answer general questions without referring to any specific cases.

From 16th August and till 31st August, telephone interviews were conducted with persons who were willing to accept an interview. However, because of some contact problems, one interview with a person from private sector was not conducted. Thus, in total, four telephone interviews were conducted. As a result, the respondent rate is 8 per cent (this may because my research was conducted a little late).

6. 3 Results of research

6. 3. 1 At the early stage, both the private sector and the public sector did not realized the huge opportunity of refinancing gains.

At the very beginning, the private sector did expect the opportunities of refinancing after the service being delivered, which is based on the experience of traditional project financing procurement, such as BOT, BOOT. Under such traditional routes, there are still amount of risks after the ~~facilities~~ ^{Facilities} been delivered as the income of the project company based on the service charge, which is not certain even during the operation phase.

Therefore, there are refinancing opportunities in traditional routes but there is no practice for sharing refinancing gains.

Under PFI contracts, the income will be made by the public sector as certain performance requirements are met. Compared with the uncertain incomes of traditional routes, the PFI payment system are low risks, which generates huge opportunities for the private sector to refinance the project.

To some extent, the public sector also showed a willingness to develop the PFI market. Therefore, the refinancing gains were regarded by the public sector as rewards for the private sectors to bear the thought -to -be huge risks in the early stage.

6. 3. 2 Refinancing share is reasonable from the private sector's view

Both two interviewees from the private sector were asked the same question whether ^{they} think the refinancing sharing is reasonable or not? They all believed that, to certain extent, the refinancing sharing is reasonable, as the sharing refinancing gain reflects risks and return during the operation stage more properly. More importantly, as one interviewee emphasized, the importance of a long-term relationship between public sector and private sectors is the reason why private sectors chose compromise. In PFI contracts, the departments are purchasers of PFI service. Maintaining a good relationship may mean that it would be easier for them to get projects from the public sector. Furthermore, a typical PFI contract lasts for 25 to 30 years. A good relationship means the departments will work in a cooperative manner during the operational phase.

To some extent, the choice of sharing refinancing gains was a compromise of the private sectors to the public sector as private sectors hope that they could benefit from the long-term good relationship. In a certain way, also, one interviewee from the private sector said they have no other choices but compromise, as he fully realized that he was not in an equal bargaining position with the public counterpart.

6. 3. 3 From the private sector's view, they prefer a project-to-project negotiation with the departments, while the departments prefer a general guidance

All the three interviewees from the private sector (including the advisor) were asked the question whether they prefer a project-to-project negotiation or a general guidance from the public sector. Two out of three persons said they preferred the former and another person stated that it depended on situations. If the projects are simple and in a mature market, such as schools and prisons, where all parties have a good understanding on the risks, a general principle is more suitable due to the fact that it can save negotiation costs for both parties. If the project is innovative, involving a great amount of risks and uncertainties, a special negotiation will be more suitable.

The only one person involving in this research from the public sector was also asked the same question. From his point of view, he prefers a general principle from the public sector to all projects. He also admitted that special negotiations might be more suitable in limited situations. But, the difficult is how to identify the limited situations as the boundary between the should-do and should-not-do is really blur. The public sector, to some extent, is concerning that the private sector may try to explore these ambiguities, which are often at the cost of public sector.

6. 3. 4 The private contractors admitted that a higher sharing proportion has negative incentives to them

The 50-50 principle has been applied for three years; both contractors said they have already got used to this policy. They also admitted that this sharing proportion may give negative influences to the private sector. However, this negative influence may not be enough to remove the interest to perform well. Although the private sector denied that they tried to seek compensations from the public sector or to increase the bidding prices, the public sector's interviewee did mention that there were cases where refinancing share

contributed to the increase of contracting prices.

The public sector admitted there were increases in price in some cases after the refinancing share policy been introduced, but they had little knowledge whether this increases should be attributed to the new policy. Because of the inexperience of the public sector in refinancing, he admitted the great help from the PUK.

6. 3. 5 PUK and other advisors gave great assistances to the public sector in reaching refinancing agreements with private contractors and in applying the new policy.

Due the lack of refinancing knowledge, departments got a lot of support from PUK and other experienced advisors on refinancing. For example, a consortium can make many different types of change to its financing structure, many of which involve in a refinancing of the project. Under such conditions, the PUK assists the department to raise the awareness of all situations where there is a possibility of refinancing gains having arisen.

The main functions of PUK in PFI refinancing are identified below:

- Skills training on refinancing. Departments would be encouraged to take a more proactive approach to monitor the financing structure of PFI contractors.
- Undertaking research before introducing the policies
- Monitoring the application of refinancing policies both to early deals and current deals.
- PUK also take an initiative role in reform in the financing PFI, designing the new route and testing the feasibility of the new route.

6. 3. 6 If private sector contractors do not take initiative role in funding competition, it needs the public sector to take proactive role in running funding competition and refinancing competition

The public sector has been encouraged to run the funding competition and refinancing

competition since the publication of “OGC Guidance on Certain Financing Issues in PFI Contracts” in 2002. However, in reality, only a few cases so far have applied the funding competition. According to the interviewee from the public sector, he still attributed it to the less experience of the public sector in this area. The public sector is not sure that to what extent the benefits from the funding competition exceed the costs and the certainty of such benefits. Therefore, the public sector takes a conservative attitude towards funding competition.

6. 3. 7 New financial arrangements may need, but a lot of researches should be undertaken since that the public sector bears long-term financial risks needs to be justified.

I did not test the feasibility of the alternative organisational structure proposed by Rintala (2004), as it is still a framework needs to be justified in theory. I only asked the question to the public sector interviewee that whether the public sector would like to bear long-term financial risks. In this new arrangement, the PUK takes the responsibility of deciding the long-term interest margin. According to the interviewee from the public sector, there are cases in reality where the public sector provides guarantee for long-term financial risks. But he also admitted that this kind of bonding relationship had other considerations rather than trying to eliminate refinancing. This kind of involvement generates a lot of arguments even within the public sector as someone argues that the public sector provides such kind of guarantee is at the cost of tax payers. Therefore, the interviewee believes that this kind of involvement may have potential advantages, but a great research should be carried on before being widely applied in practice.

Chapter 7 Conclusions and Recommendations

This dissertation examines the financing aspect of PFI projects with emphasis on refinancing issues. The ultimate purpose of this dissertation is to try to draw conclusions from experience of refinancing PFI in the UK which could be absorbed by other countries' public sectors if they wish to introduce PFI. The dissertation starts by introducing the refinancing policies being applied at different stages to different projects in the British public sector. This history review raises several questions: firstly, are these policies, generally speaking, successful? Secondly, under what considerations were these policies introduced during different stages? Lastly, if the current policy is not perfect, how can the public sector improve it?

With theoretical reasoning, refinancing is discussed from different perspectives. In chapter 3, private finance is investigated in order to answer the fundamental question: why is refinancing possible? The mechanism of risk allocation and the risk pricing model in a competitive market are the key to understanding private finance. In chapter 4, refinancing is examined from the public sector's perspective aiming to find out the rationale of refinancing share. By applying game theory and agent theory, different ingredients influencing bargaining *ex ante* and bargaining *ex post* are identified. For early deals, where bargaining over refinancing share was undertaken *ex post*, the patience and the degree to which the private contractors care about their long-term relationship with the public sector determine the bargaining powers of the both sides. In bargaining *ex ante*, the public sector is in a much more favorable position as it can threaten to exclude those private contractors who do not agree with refinancing gains share out of future PFI deals. Therefore, compared with early deals, the public sector is entitled to a higher sharing proportion in new deals. However, it does not mean that the public sector could request any proportion as he like; incentive matters need to be taken into consideration when making refinancing policies. Therefore, we need to test the suitability of the current policy by taking incentive issues into consideration.

In the last part of the literature review I pose the question: are there methods that could fundamentally eliminate the refinancing? Two innovations in financing PFI are introduced in this chapter: one aiming to eliminate refinancing, the other to correct incentive scheme. The feasibilities need to be tested by empirical research.

The theoretical conclusion is examined by empirical research in the form of an interview survey. By combing the theoretical reasoning and findings in the interview survey, the conclusions we can draw from the UK's refinancing experience are:

- The refinancing issue was recognized too late by the UK government. There were a lot of cases which were quiet in refinancing share, eroding the VFM to tax payers.
- Different policies are applied to early projects and to new deals. Two reasons can be identified for this. Firstly, a higher sharing proportion in early deals rewards private contractors for bearing higher than normal risks in the early stage. Secondly, as stressed in Chapter 4, the public sector is in an unfavorable bargaining position ex post.
- For simplicity considerations, a general 50-50 principle has been utilized in the UK, but there were cases where the negative influences of this general principle were observed.
- The PUK, which assists the British public sector in refinancing issues, not only provided assistance in policy making and policy enforcement, but also did an excellent job in training personnel, raising the awareness of refinancing issues of departments.
- The funding competition has been encouraged by the British public sector and has been utilized successfully in some cases. However, the cost saving and the improvement of VFM from funding competition are limited, as new risks and new costs are involved.
- There are some new financial arrangements proposed by researchers. The feasibilities of these arrangements should be tested in practice.

Based on the UK's experience, the recommendations to other countries' public sectors are presented as follows:

- Refinancing policy should be taken into consideration even at the early stage. The public sector could choose different sharing proportions to reflect the general risk of the PFI market, for example, a lower sharing proportion in the first three to five years and then an improved sharing proportion thereafter.
- The public sector needs to observe the influence of refinancing policies on the incentive scheme of private contractors.
- An independent advisor in refinancing for the public sector is essential. In addition, a training system should be set up to equip the involved personnel from the public sector with knowledge and skills in enforcement of refinancing policies.
- Funding competition should be encouraged and the public sector should take a proactive role in running funding competition, especially in the case of the absence of competition, generating a better VFM to taxpayers.
- Research on innovations in financing PFI needs to be undertaken, with the consideration of situations specific to that particular country.

With the above five recommendations, the process of becoming familiar with refinancing PFI will be greatly speeded. These recommendations are based on the UK's experience and therefore, before 'borrowing' from these experiences, other countries need to consider the applicability of these experiences to their own countries. For example, private financing works closely with the legal system (especially contract law). Only a well-established legal system could boost private finance in public service provision, and improve the efficiency of public service delivery. In addition, since some countries may have a totally different legal system to the UK's, they need to fit the UK's experiences to their own legal systems. Hence, a lot of researches need to be undertaken on the justification of private financing public services before introducing PFI and applying private finance in the provision of public services. If the financial involvement of the private sector

is justified, the lessons learned from the UK's experience and the above recommendations will give great assistance in policy making and policy implementation in the PFI refinancing area.

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Appendix 1 Case Study on Refinancing Fazakerley Prison

The Fazakerley Prison is the first case in refinancing PFI projects. This could be seen as a milestone in the UK's refinancing history.

The Prison Service awarded contracts in December 1995 and January 1996 to commercial businesses to run on its behalf two prisons -Fazakerley in Liverpool and Bridgend in South Wales. The contract for Fazakerley (now called Altcourse) was given to Group 4 and Tarmac. It was not the cheapest bidder, but the Prison Service decided that it was unwise to give the two contracts to the same bidder. (Securicor and Costain were cheapest on both.) After completion of the prison building, Tarmac sold its stake in the business to Carillion.

The National Audit Office calculated that the Prison Service saved £1m over the 25 year life of the contract, compared with traditional procurement and in-house service provision. This contrasted badly with projected savings of £53m from the similarly sized Bridgend prison contract.

The NAO criticised several aspects of the contracting. Failing to award the two contracts to the Securicor/Costain bid cost £19m, according to the terms of the actual tenders, but the consortium was willing to cut costs further to secure both prison contracts for itself.

Advice to the Prison Service for the contracting process cost the massive amount of £1.6m - compared with an estimate of £0.6m. The contract for financial advice, awarded to Lazards, was made without competition.

The PFI contract was in two parts: the prison construction and the service charges for its continued use. Those service charges are levied by the winning bidder, but are not subject to ongoing market testing. The NAO says that in future contracts they should be.

But the most serious failing of the Prison Service was its failure to anticipate that the bidders might refinance the contract. Accordingly there was no provision in the contract that should refinancing take place the financial benefits should be shared between contractor and client.

This failing was amplified when the Group 4/Carillion consortium requested approval to refinance - although it had no clear legal need to obtain approval - and the Prison Service endorsed this, with the very modest rebate of £1m to compensate for additional end of contract liabilities. Rothschild, the Prison Service's financial advisors, calculated that the refinancing arrangement increased the Prison Service's risk exposure to the tune of £47m in cash terms (£13.5m at today's values) by the year 2013.

The windfall to Group 4/Carillion of the refinancing were enormous- £10.7m. The rate of return for the shareholders increased from the projected 13%, to an actual 39%. The refinancing instantly made the contract one of the most profitable PFI deals ever. Instead of recovering its costs over the 25 year life of the contract, the consortium has recovered them over the first two years - leaving the next 23 years payments as pure profit.

MPs on the House of Commons' Public Accounts Committee strongly criticised the refinancing arrangements and said that the benefits of refinancing should be split between contractor and client. The committee, under the chairmanship of Conservative MP David Davis, said: "It is unacceptable that a department should accept without full compensation any risk of having to meet higher termination liabilities as a result of a refinancing which would greatly benefit the private sector shareholders."

Committee member Labour MP Alan Williams described the refinancing as "like coming up with the lottery several times a year."

The consortium awarded the contract for the other initial PFI prison at Bridgend

subsequently obtained a profits windfall of £5m by refinancing its £77.5m loan at a 4% discount.

(Source: NAO 2000a)

Appendix 2 Case Study on Refinancing Norfolk & Norwich University Hospital

The Norfolk & Norwich University Hospital is an early deal where a 30 per cent share is entitled to the public sector.

The Norfolk & Norwich University Hospital NHS Trust (the Trust) currently pays £37.8 million a year to a private sector consortium Octagon under the terms of one of the first PFI hospital contracts let in January 1998 (**Figure 1**). The contract was a pathfinder deal which helped the Department of Health (the Department) to establish a new market in PFI hospital procurement.

The Trust's 1998 contract required Octagon to build the new hospital, to then maintain it and provide facilities management service for a minimum period of 30 years. The current contract also reflects additional building work that the Trust commissioned from Octagon in 2001, the cost of which was fully offset by a subsequent price reduction following a refinancing completed by Octagon in 2003. The minimum period over which facilities management services will be provided by Octagon was extended to 35 years at the time of the refinancing. The total minimum contract period, including the construction phase, which had initially been for 34 years, then became 39 years to 2037.

Octagon's refinancing in December 2003, nearly six years after the letting of the contract and two years after the opening of the new hospital, generated large gains for Octagon, part of which were shared with the Trust (**Figure 2**). The large refinancing gains arose because, having successfully delivered the new hospital, Octagon was able to obtain

better financing terms, not available when the 1998 contract was entered into, as a result of the maturing PFI market and also the reduction in general interest rates which had arisen since 1998.

In common with other early PFI deals, this early PFI hospital contract had placed no obligation on Octagon to share any refinancing gains. A subsequent agreement by Octagon to share with the Trust refinancing gains, on additional borrowings funding the further work which the Trust commissioned in 2001, had been limited to allocating the Trust 10 per cent of these refinancing gains. On refinancing in 2003, Octagon shared, however, approximately 30 per cent of its total refinancing gain with the Trust (**Figure 3**). This was in accordance with the voluntary code for sharing refinancing gains on early PFI deals which the Treasury had negotiated with the private sector in 2002.

1 Payments under the PFI contract in relation to the Trust's budget: 2004-05

	£m	%
Revenue	<u>269.0</u>	
Outgoings:		
PFI contract	37.8	14
Other expenditure	<u>231.2</u>	86
	<u>269.0</u>	100
Surplus ¹	-	

Source: The Trust

NOTE

1 The Trust's revenue and expenditure for 2004-05 are based on unaudited information at 4 May 2005. In 2003-04 the Trust achieved a surplus of £0.9 million due to the receipt of non-recurring income of £3.4 million.

2 Gains to Octagon shareholders arising from the refinancing

Expected net present value of returns to Octagon shareholders over contract period	£m ¹	Internal rate of return (IRR) to Octagon shareholders ²
At contract letting	47.3	18.9%
Decrease up to time of refinancing	(11.9)	
Prior to the refinancing	35.4	15.9%
Increase from refinancing ³	<u>115.5</u>	
	150.9	
Refinancing gains shared with Trust (Figure 3)	(33.9)	
Following the refinancing	117.0	60.4%

Source: Royal Bank of Canada, the Trust's financial advisers on the refinancing (from Octagon records)

NOTES

1 Figures expressed as net present values based on cashflows discounted at 18.94 per cent in nominal terms, the anticipated base case internal rate of return (IRR) to Octagon's shareholders as reported by Octagon when the contract was let. The base case IRR is used as the discount rate for the evaluation of refinancing gains in accordance with the voluntary code and related Treasury guidance. The base case IRR is not necessarily the discount rate that Octagon's shareholders would use to evaluate their expected returns.

2 The IRR to shareholders is the standard measure which the public sector has used to compare the returns expected by shareholders of consortia bidding for PFI contracts. It is not an indication of the future rate of annual returns which the investors in Octagon anticipate realising from the project but reflects the time value of when benefits are received including the benefits realised immediately following the refinancing. The increase in the IRR following the refinancing reflects the high value of receiving large returns early in the contract period.

3 The large refinancing gains arose because, having successfully delivered the new hospital, Octagon was able to obtain better financing terms, not available when the 1998 contract was entered into, as a result of the maturing PFI market and the reduction in general borrowing rates since 1998. The refinancing gains of £115 million arose on a project where the capital value of the hospital building was £229 million (equivalent to over £300 million in prices at the time of the refinancing).

4 The shares of Octagon at the time of the refinancing, and at 28 February 2005, were held:

3i Group plc	25%
Barclays Infrastructure Limited	25%
Innisfree Partners Limited	25%
John Laing plc	20%
Serco Investments Limited	5%
	100%

3 Analysis of the Trust's share of the refinancing gain

	Refinancing gain	Retained by Octagon	Gain shared with the Trust	% received by the Trust	Basis of sharing
	£m	£m	£m		
Extension of minimum contract period	5.0	2.5	2.5	50	Octagon agreed to allocate to the Trust 50 per cent of the refinancing gain which arose from extending the minimum contract period.
Balance of refinancing gain	<u>104.7</u>	<u>73.3</u>	<u>31.4</u>	30	Octagon agreed to allocate to the Trust 30 per cent of the remaining refinancing gain in accordance with the voluntary code for sharing refinancing gains on early PFI deals.
Allocation of refinancing gain for sharing with the Trust	109.7	75.8	33.9	31	
Part of refinancing gain excluded from gains to be shared with the Trust	5.8	5.8	-	-	Where the private sector project company has not been achieving its expected internal rate of return then the voluntary code allows the private sector to retain that part of the refinancing gains which will allow the rate of return (before taking account of any refinancing gains) to return to the level expected when bidding for the contract.
Allocation of total refinancing gain	<u>115.5</u>	<u>81.6</u>	<u>33.9</u>	29	

Source: Royal Bank of Canada (from Octagon records)

In response to issues raised with us by Norman Lamb, Member of Parliament for North Norfolk, we considered:

- whether the large benefits which have accrued to the private sector shareholders as a result of the refinancing indicate that the Trust could have improved the original PFI deal it negotiated with Octagon; and
- how the price the Trust is paying for this deal following the refinancing compares with current PFI hospital deals.

In summary we have found that:

i The terms of the original bank finance appear in line with other early PFI deals but subsequent improvements in PFI financing terms mean that, although the Trust has received a share of the refinancing gains, it continues to pay a premium on the financing costs compared to current deals.

ii There are other factors which may affect the overall comparison of the Trust's deal with current PFI deals including the fact that the benefits of a new hospital have been received earlier than in many other communities and the high rates of recent construction cost inflation have been avoided.

iii It might have been possible for the Trust to have improved the original deal with greater competition and better defined requirements in the closing stages but the Trust is not convinced this would have brought added benefits as it sought to close a pathfinder deal which had already been assessed as value for money.

Our detailed findings were:

i The terms of the original bank finance appear in line with other early PFI deals but subsequent improvements in PFI financing terms mean that, although the Trust has received a share of the refinancing gains, it continues to pay a premium on the financing

costs compared to current deals

ii There are other factors which may affect the overall comparison of the Trust's deal with current PFI deals including the fact that the benefits of a new hospital have been received earlier than in many other communities and the high rates of recent construction cost inflation have been avoided.

iii It might have been possible for the Trust to have improved the original deal with greater competition and better defined requirements in the closing stages but the Trust is not convinced that this would have brought added benefits as it sought to close a pathfinder deal which had already been assessed as value for money

(Source: NAO, 2005)

Appendix 3 Case Study on Funding Competition –The Treasury Building Project

The Treasury Building is the first case where a funding competition was being hold. Through funding competition, the public sector greatly improved the VFM.

The Government Offices, Great George Street is a grade II* listed building, constructed about a century ago. It forms an important part of the Government's freehold estate, occupying a prominent position in Whitehall close to the Houses of Parliament and overlooking Parliament Square and St. James's Park. By the early 1990s, after many years when only essential maintenance had been undertaken, the fabric of the building required extensive remedial work. In May 2000 the Treasury completed a deal with Exchequer Partnership¹ to refurbish and then maintain the building for a period of 35 years. Once the Treasury is able to occupy the refurbished building it will pay Exchequer

Partnership an annual unitary payment of £14 million (in March 1999 prices). The total net present cost of the unitary payments over the lifetime of the deal is £170 million.

Exchequer Partnership was selected as the preferred bidder for the project in September 1996, after a competitive procurement process. Subject to final negotiations, the key terms of the deal had been agreed and funding commitments from financial institutions had been agreed in principle by Exchequer Partnership, as is usual in PFI deals. Following the 1997 General Election, however, negotiations were terminated. The Government considered it inappropriate to go ahead with this major project at a time when all departments were undertaking comprehensive spending reviews.

The Treasury reviewed the project to re-assess the extent of the remedial work required and the priority of the project in relation to other expenditure demands. The review confirmed that the building was in need of substantial refurbishment if it was to become a flexible and efficient office, suitable for the future needs of the Treasury. On the basis of a revised specification, Ministers agreed that the project should go ahead.

The Treasury decided to retain Exchequer Partnership as its preferred bidder rather than hold a second competition for the entire project. However, when negotiations were resumed in October 1998 thinking had advanced and a fresh element of competition was introduced into the process. Negotiations were reopened with Exchequer Partnership on the condition that the external project funding was obtained via a separate competition. This was to be the first time that project funding had been secured this way in a public sector procurement. The Treasury had two objectives in requiring such a competition:

a) to persuade banks and other project funders to accept standard contract terms for future PFI projects

Whilst the Treasury was negotiating the project agreement, the Treasury Taskforce² was developing a set of standard terms and conditions for future PFI contracts. This was

intended to streamline the procurement process and reduce costs for both the public and private sectors. The Taskforce agreed with the Treasury PFI project team that the project should be used to test how the standard terms and conditions worked in practice. It was hoped that this would lead to their general acceptance by PFI project funders.

b) to obtain the best available price from a transparently competitive process

The Treasury recognised that the suspension of the project and the subsequent renegotiations with Exchequer Partnership after such a long delay would raise doubts whether the deal in its entirety reflected the best value the market had to offer. Holding a funding competition was seen as a way of getting the best price for the project funding and demonstrating that this was the case.

Although there were good reasons for holding a funding competition, the full benefits would not be achieved unless the process was well managed by all the parties and their advisers. Before embarking on the competition, the Treasury and Exchequer Partnership signed an agreement that detailed how the competition was to be run and set out the roles that all parties were to play during the competition process. Appropriately qualified advisers were appointed separately by the Treasury and Exchequer Partnership and prospective bidders in the funding competition were provided with clear information. These arrangements facilitated a strong competition in which 19 financial institutions submitted initial offers and six final bidders provided detailed credit terms. In the final outcome, the Treasury achieved its objectives. The standard terms and conditions were accepted by bidders

A large majority of the financial institutions that submitted initial offers also accepted the standard contract terms and conditions without amendment. The funding was obtained at a good price without any adverse effect on the agreed allocation of risk

The allocation of risks between Exchequer Partnership and the Treasury remained

unaltered during the competition. The final capital structure of the deal was also within the range of possibilities envisaged at the start of the competition. The funding was obtained at a fair price and savings of £13 million over the lifetime of the deal were achieved compared to the unitary payment offered prior to the funding competition.

One of the key advantages of the PFI is that the potential for private sector innovation can be maximised through a single competitive process in which bidders submit proposals covering all of the elements that make up a typical bid, often described as design, build, finance and operate. The success of the Treasury funding competition, where the financing was arranged through a separate competition after the other elements of the deal had been agreed, has shown that additional value can be generated by procuring the project funding in this way. This suggests that funding competitions may have a role to play in future PFI deals.

While the synergies between the design, build and operate parts of a deal are clear, the advantages of arranging the financing at the same time may not be always so obvious. When a contractor is selected as the preferred bidder the commercial elements of a deal should have been agreed. The complete cost of financing, however, is usually only finalised at financial close for a project financed transaction. Financial institutions are likely to be more competitive if they are asked to bid for the financing after a contractor has become the preferred bidder and a commercially viable project agreement has been negotiated, allowing credit risks to be properly assessed and priced. The potential benefits of a funding competition are the likelihood that the most appropriate form of financing will be arranged at a competitive price.

There are, however, significant risks in running a funding competition. These risks include the project not attracting competitively priced funding and the deal taking longer than expected, leading to increased procurement costs and a delay in realising the project benefits.

(Source: NAO, 2001)

Appendix 4 Interview Survey in refinancing PFI among public and private sectors

A cover letter and question lists for public sector and private sector are shown in this part.

1 Cover letter for inviting participation in research

Dear Sir/ Madam:

I am inviting you participate in a research project to study refinancing issues in PFI. Along with this letter is a short list of questions that asks a variety of questions about refinancing. I am hoping that you could look over the list and, if you would like to answer these, please email me your phone number and the suitable time you would like to have the telephone interview. It should take you about 10-20 minutes for the interview.

The results of this interview would be very important for the success of my dissertation. Through your participation I hope to understand the different refinancing policies applied by the British authorities and its influences.

I do not know of any risks to you if you decide to participate in this interview and I guarantee that your responses will not be identified with you personally. I promise not to share any information that identifies you with anyone outside me.

The interview should take you about 10 minutes to complete. I hope you will take the time to look over the questions and you do not have to answer them all. You could just choose the questions you would like to answer.

If you have any questions or concerns about completing the interview or about being in

this study, you may email me. Your help is greatly appreciated and your prompt response will be one of the keys to the successful and timely completion of my research.

Sincerely.

Fang Feng

Department of Construction Economics and Management, UCL

2. Question list for public sector and its advisors

● **Early Stage**

1. Whether and to what extent was the public sector aware of refinancing issues at the very early stage?
2. What considerations didn't encourage refinancing sharing at the early stage?
3. When did the public sector realize that the non-sharing policy eroded VFM?

● **New policy**

1. Generally speaking, whether the current policy is suitable or not?
2. What help is PUK or other advisors providing to assist with reaching refinancing agreements?
3. Have the public sector noticed any increase in contract pricing caused by the new sharing policy?
4. Is the authority aware of its consortia's current financial structures and of any changes since contract letting?
5. Have you observed any either changes in the behaviors of PFI Cos that you attributes to the introduction of the new refinancing sharing agreements?

● **Future**

1. Whether the refinancing opportunities could disappear or greatly reduce as the PFI market is getting mature?
2. Whether it is possible to eliminate refinancing opportunities by enhancing competition ex ante?
3. Whether a new kind of refinancing arrangement, i.e. DBO+F is superior to current arrangement?
4. Whether the public sector would like to bear long-term financing risks?

2. Question list for private contractors

● **Early Stage**

1. To what extent did you anticipated the refinancing opportunities after successful delivery of a service?
2. Was there any mechanism for sharing refinancing gains? What percentage the public sector was entitled to receive?
3. Whether a refinancing needed approval by the public sector in early stage?

● **New policy**

1. Generally speaking, is the 50-50 sharing policy suitable to your particular case or not?
2. If you believe it is too high, what do you think is the acceptable percentage and why?
3. Whether the high sharing percentage gives you insufficient incentives to perform well or encourages you to seek compensations from the public sector?
4. Besides that, what other negative influences a higher sharing percentage could cause?

● **Future**

1. Whether the refinancing opportunities could disappear or greatly reduce as the PFI market id getting mature?
2. Is it likely that enhanced competition will eliminate refinancing opportunities?

3. Whether a new kind of financing arrangement i.e. DBO+F is superior to current arrangement?