NATIONAL AUDIT OFFICE

Innovation in PFI Financing: The Treasury Building Project

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL
HC 328 Session 2001-2002: 9 November 2001

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John Bourn
Comptroller and Auditor General

National Audit Office
8 November 2001

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executive summary

1 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 Partnership[1] 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.

2 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.

3 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.

4 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 re-opened with Exchequer Partnership on the condition that the external project funding was obtained via a separate competition. This was to be the first time

1 *A consortium consisting of Bovis Lend Lease Holdings Ltd, Stanhope plc and Chesterton International plc*

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 Taskforce[2] 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.

5 This report is about the funding competition. It examines whether the Treasury achieved its objectives and how such competitions might be run effectively in the future. Our methodology is summarised at Appendix 1.

The Treasury achieved its objectives

6 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

7 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

8 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 compeition.

2 The projects and policy teams of the Taskforce were set up within Treasury to support Departments on PFI transactions and to develop PFI guidance. All future references to the Treasury or the Treasury project team, unless otherwise stated, can be assumed to include the Taskforce from whom close assistance and support was received.

The role of funding competitions in future PFI projects

9 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.

10 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.

11 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.

Recommendations

12 Running a funding competition is a complex undertaking that requires experienced and qualified project managers and advisers on the public and private sector sides of the deal. In many cases the complexity of the competition process and the risks involved will outweigh the potential benefits. In other cases, however, significant benefits may accrue if running a funding competition is a credible option. By reserving the right to require a preferred bidder to run a funding competition, departments can ensure that the financing package supporting the preferred bidder's solution is highly competitive.

13 In the light of the benefits obtained from the funding competition for the Treasury building, we make the following recommendations for future PFI deals:

Departments should always consider the option of using a funding competition

14 When deciding whether a funding competition will improve value for money, departments need to consider:

a the complexity of the project - it will be easier to run a funding competition for a simple well-understood project, but the financial rewards for a complex project may be greater;

b the capital funding requirement - projects with a significant capital expenditure element offer the potential for greater rewards. The size of the funding requirement will also impact on the number of potential funders interested in providing the project financing;

c whether the PFI procurement process was competitive, including a consideration of the elapsed time between the appointment of the preferred bidder and financial close;

d the experience and qualifications of the public sector project management team, the department's advisers and the preferred bidder who will be conducting the competition.

In the absence of competitive tension a funding competition may be essential

15 For a number of reasons a department may find itself in the position where the PFI procurement process does not produce a competitive environment. This may occur because there is only a single bidder or because of the time taken between selection of preferred bidder and financial close. In these circumstances, a funding competition is the best way of ensuring that the funding of the deal represents good value for money.

In deciding to hold a funding competition, departments must pay careful attention to the structure of the deal and how the competition is run

16 For a funding competition to be successful, departments must carefully consider the following aspects:

- **a** The project agreement must be commercially viable. Without a commercially viable agreement there is a risk that the subsequent due diligence by funders will result in changes being made to the project agreement during the competition and a probable delay to financial close. The use of standardised contract terms, which are known to be acceptable to financiers, should help departments to negotiate commercially viable contracts and to attract greater competition in sources of finance.
- **b** High quality advice is essential. When appointing advisers, departments need to consider whether an adviser has sufficient commercial experience, specifically in the PFI market, and suitable experience of raising finance.
- **c** The competition must be planned in advance. Early planning will help to avoid cost increases and any potential delays to the completion of the project. Departments will also need to judge carefully the number of potential funders asked to bid.
- **d** The evaluation criteria must be well thought through. In particular, departments and their advisers need to consider carefully the appropriate funding structure in relation to the risks transferred and recognise that the lowest cost does not always represent the best value.
- **e** The capability of the department's own project management to take on the additional responsibilities inherent in a funding competition.

Departments should take a close interest in bidders' funding arrangements even when there is not a separate funding competition

17 If a separate funding competition is not to be used departments should ensure that they understand and monitor bidders' funding arrangements. Departments and their advisers will need to consider ways in which bidders can be incentivised to obtain the best priced and most appropriate form of financing. This might include:

- **a** The traditional approach of relying on competitive tension in the overall procurement process to incentivise bidders to include the most attractive finance as part of their bids.
- **b** Allowing bidders to suggest running a funding competition and to ensure that the bid evaluation process takes account of this.
- **c** At an appropriate point during the procurement, benchmarking the expected funding costs.

18 We understand that, having considered the issues set out above, the Office of Government Commerce intends to issue guidance to departments on when, in future PFI projects, it may be appropriate for funding to be obtained through a separate competition.

Part 1

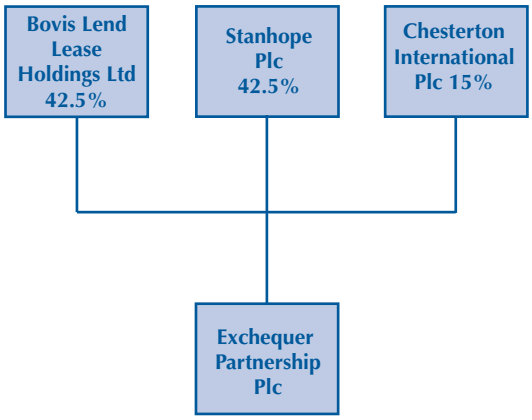
The Treasury competition was a success

1.1 The Government Offices Great George Street are an important part of the Government's freehold estate. These offices occupy a prominent location on the corner of Parliament Street and Parliament Square and overlook St. James's Park to the west. They were built between 1898 and 1917 and there has been little subsequent modification or modernisation.

1.2 The internal configuration of the Treasury building, which mainly comprises cellular offices located off long corridors with very little open plan space, added to the long term maintenance requirements of the 100 year old building, led to the conclusion that it needed to be refurbished. Refurbishment would address the long-term maintenance problems and, by improving the internal layout of the building, provide modern, flexible and efficient office space.

1.3 The Treasury undertook a competitive procurement process to select a private sector partner to refurbish the building and then service and maintain it. In September 1996, Exchequer Partnership **(Figure 1)** was selected as the preferred bidder for the project. Following the 1997 General Election, negotiations between the Treasury and Exchequer Partnership were terminated. The new Government decided it was inappropriate to go ahead with this major project at a time when all departments were undertaking comprehensive spending reviews.

1 Structure of the Project Company



Source: National Audit Office

1.4 Following the decision to terminate negotiations, the Treasury reviewed the project to assess the extent of work required and the priority of the project in relation to other demands on expenditure. The review confirmed that, after many years of only undertaking essential maintenance, the building was in need of a major refurbishment if it was to become a flexible and efficient office suitable for the future needs of the Treasury. Ministers agreed to go ahead with the project and negotiations between the Treasury and Exchequer Partnership were resumed in October 1998. A contract for the refurbishment and subsequent management of the building was signed by the Treasury and Exchequer Partnership in May 2000.

1.5 As Exchequer Partnership had made its previous bid in a competitive situation the Treasury decided that, on balance, it was appropriate to resume negotiations with Exchequer Partnership rather than hold a second competition. The Treasury and its advisers, however, wanted to introduce competition into the procurement. They considered that the funding of the project was one area where it would be beneficial to the project itself and to the development of the PFI generally, to hold a separate competition. The Treasury, therefore, re-opened negotiations with Exchequer Partnership on the condition that a competition would be held to obtain the financing for the project. It was thought appropriate that the risk of obtaining project funding should remain with Exchequer Partnership, which would also be responsible for running the funding competition.

1.6 This part of the report describes the objectives of the funding competition, how the process was managed and the financing that was put in place as a result of the competition. It shows that:

a The Treasury set clear objectives. There were good reasons for using a funding competition and potential benefits for the Treasury building project and the PFI in a wider context were identified.

b The funding competition was well managed. By agreeing early on to undertake a funding competition as part of a renegotiated deal, all parties had ample time to define their roles and structure the competition in a way that would optimise the likelihood of a successful outcome. Key to the good management of the competition was the strong Treasury project team, that included the Treasury Taskforce, and the appointment of experienced and appropriately qualified advisers.

c Funding was obtained on competitive terms and the financiers accepted the newly standardised contract terms.

The Treasury set clear objectives for the funding competition

1.7 In going ahead with the building refurbishment project, the Treasury decided not to hold a second competition for the entire project, but were keen to inject further competition into the process. After deciding that a funding competition would be a sensible way to obtain the project financing whilst adding a competitive element into the procurement, the Treasury set clear goals as to what it was hoping the competition would achieve.

Acceptance by financiers of new, standardised contract terms for PFI projects

1.8 At the same time as the Treasury was negotiating the project agreement with Exchequer Partnership, the Treasury Taskforce was developing a set of standard terms and conditions for PFI contracts. The aim of the standard contract terms was to streamline the PFI procurement process, thereby improving its efficiency and reducing costs for both the public and private sectors.

1.9 The Taskforce consulted banks and other project funding institutions during the development of the standard contract terms to identify any issues that project funders might find contentious. During this consultation some financial institutions raised concerns over several of the proposed clauses. However, the clauses were thought to be beneficial to the PFI process and to the public sector, and the Taskforce considered it was important that the standard contract was accepted as a whole. In agreement with the Treasury PFI project team, the Taskforce decided it would be appropriate to use the Treasury building project to test the standard terms and conditions, with a view to getting them accepted by the project funding community. The contract terms agreed between the Treasury and Exchequer Partnership therefore mirrored the Taskforce standardised contract terms. The project was viewed as an ideal opportunity to gather support for the standardised contract, as the Taskforce considered that the high profile of both the Treasury and its building would increase the likelihood of the standard contract being accepted.

Funding for the project at demonstrably the best price

1.10 Because of the long time period between the appointment of Exchequer Partnership as preferred bidder and the resumption of negotiations, there was a risk that changes in the PFI market might have made the bid less attractive. The Treasury therefore put in place evaluation procedures, such as benchmarking against relevant price indices, to assure themselves that the construction and maintenance elements of the bid remained in line with the market. As a separate competition could be held without delaying the project timetable, the Treasury also aimed to satisfy itself that the funding for the deal would be the best available in the market. A funding competition would therefore serve the dual function of both getting the best price for the project funding and demonstrating that this was the case.

The Funding Competition was well managed

1.11 In the absence of a funding competition, the normal means by which PFI projects are funded is for the private sector bidder to negotiate with external funders, such as banks. Having decided that the funding should be obtained after a competition, there were several options open to the Treasury as to how the competition should be run. One option would have been for the Treasury itself to run a funding competition. But there are compelling reasons why the private sector bidder should usually run a funding competition:

a It is the bidder who must convince its lenders and investors of the robustness of the project and therefore its credit worthiness. It is also the bidder who must develop a long term relationship with the lenders.

b Due diligence on the sub-contracts which a bidder proposes to enter into must, in the first instance, be a matter for the bidder and the bidder's financial advisers.

c The obligation to obtain funding remains with the private sector bidder.

Accordingly, Exchequer Partnership was required to run the competition, albeit with proactive involvement from the Treasury and its advisers as the financial consequences (in terms of price) of the competition would be borne by the Treasury.

2 Advisers used during the funding competition

Parties to the Competition	The Treasury	Exchequer Partnership	Funders
Advisers			
Legal	Berwin Leighton	Ashurst Morris Crisp	Allen & Overy
Financial	Dresdner Kleinwort Benson	Société Générale	N/A
Technical	Gardiner Theobald management services	N/A	WS Atkins
Insurance	Willis Corroon	CE Heath	Marsh Bankrisk services

Source: National Audit Office

1.12 A funding competition would not yield its full benefits unless the process was well managed. In this first use of such a competition it was also presentationally important for the Treasury that the competition should be perceived as successful. Before embarking on the competition, the Treasury and Exchequer Partnership agreed formally how the competition was to be run and managed. There was to be a three stage process: pre-qualification to identify suitable bidders, a long list, and then a short list.

Appropriately qualified advisers were appointed

1.13 **Figure 2** shows the advisers appointed by the various parties for the funding competition. The Treasury received financial advice from Dresdner Kleinwort Benson[3] and legal advice from Berwin Leighton[4].

1.14 Exchequer Partnership appointed Société Générale, their existing financial adviser for the project, to run the funding competition, with the active participation of the Treasury and Dresdner Kleinwort Benson. In their roles as financial advisers to the Treasury and Exchequer Partnership both Dresdner Kleinwort Benson and Société Générale were excluded from bidding to provide the senior debt funding[5]. The Treasury and Exchequer Partnership decided that Société Générale should be allowed to provide mezzanine debt funding at an agreed rate of interest, but only if the agreed rate of interest was market tested during the funding competition. In the event that a third party offered to provide the mezzanine funding at a better rate, Société Générale would be paid £100,000 for having committed to provide such funding.

1.15 Funders undertake what is known as due diligence work[6] to satisfy themselves that a project is commercially viable before agreeing to lend money. However, for a funding competition with a large number of potential financiers, allowing each of them to undertake due diligence would have increased costs to the preferred bidder, which are ultimately passed onto the contractor and the department, either in the project under negotiation or in future projects. Such a process would also have been unwieldy to manage, probably increasing the length of the competition and the final cost of finance for the Treasury.

1.16 To counter this situation Exchequer Partnership, in consultation with the Treasury, appointed one set of due diligence advisers to act on behalf of all of the potential funders. The cost of these advisers was no greater than the costs already included in the Exchequer Partnership bid for financier due diligence advisers. Due diligence costs are always included in budgets when third party finance is to be arranged, whether through a separate funding competition or otherwise (and so are ultimately reflected in the unitary payment). These technical, legal and insurance advisers were appointed after a competitive process. All of the funding institutions involved in the competition agreed to use this one set of advisers. Their appointment streamlined the due diligence process and was regarded as a success by the Treasury, Exchequer Partnership and the funders themselves.

3 *now Dresdner Kleinwort Wasserstein*
4 *now Berwin Leighton Paisner*
5 *Different types of funding are identified by their ranking in terms of repayment rights. Senior debt is ranked highest and therefore is paid first. Mezzanine (often called subordinated) debt ranks below senior debt and therefore is only paid after senior debt has been paid. It should be noted that there can be several levels of subordinated debt, e.g. shareholders' subordinated debt will probably rank below subordinated debt provided by a third party. The lowest financing, in rank, is equity. Equity providers make returns in the form of dividends which will only be paid once all other forms of financing have received their payments. As such it is the riskiest form of funding and receives the highest returns if a project is successful.*
6 *The analysis and appraisal of a project, especially any risks, undertaken prior to making an investment decision.*

Prospective funders were provided with clear information

1.17 The bidders were provided with clear information on the nature of the project, how the competition would be run and on the criteria against which bids were to be judged. Although it was Exchequer Partnership's competition, run by Société Générale, all key decisions were taken in close consultation with the Treasury and Dresdner Kleinwort Benson.

1.18 The bidders were aware of exactly what they were competing for. Exchequer Partnership would provide a minimum of 3% and a maximum of 7% of the total funding requirement in the form of equity. The 3%-7% band was negotiated between the Treasury and Exchequer Partnership to ensure that funding was not constrained by a fixed level of equity investment[7] whilst ensuring a minimum level of sponsors capital would be at risk. Therefore up to 97% of the total financing was open to competitive bidding, and the potential funders would determine exactly how much equity the shareholders of Exchequer Partnership put into the project company. The bidders were made aware of the fact that Société Générale was prepared to provide 5% of the financing in the form of mezzanine debt, but that this element of the financing would also be open to competition.

1.19 The evaluation criteria reflected the objectives set by the Treasury. Bidders were to be evaluated on three criteria: price, the acceptance of the standard terms and conditions and deliverability. As well as information on what they were bidding to provide, the funders were also given a detailed competition timetable **(Figure 3)**. All parties stuck to this timetable.

1.20 Potential bidders wishing to pre-qualify were provided with outline details of the project and an estimate of the amount of funding required. The bidders were asked to indicate the terms on which they were prepared to finance the project but were not required to go so far as to obtain approval from their own internal credit committees at this stage.

3 Competition timetable from signing of the project agreement to financial close

Date	Event
4th August 1999	Invitation to pre-qualify (ITPQ) sent to initial longlist of 28 institutions
5th August 1999	Project agreement signed between the Treasury and Exchequer Partnership. Only outstanding issues related to planning consent and funding
27th August 1999	Invitation to pre-qualify responses analysed and long list of 6 funders selected to go forward in the competition
15th October 1999	Information memorandum provided for the remaining bidders
12th November 1999	Supplementary technical review issued covering latent defects and Jubilee Line extension issues
10th December 1999	Closing date to receive bids
16th December 1999	Planning consent received
5th January 2000	All bids analysed. Warburg Dillon Read recommended as bond lead arranger. Sóciété Générale recommend that the monoline insurers are given a further chance to refine their bids
6th January 2000	Warburg Dillon Read appointed
7th January 2000	Revised bids received from monoline insurers
17th January 2000	Monolines confirm acceptance of project documents
20th January 2000	Listed building consent received (beginning of 90 day judicial review process)
26th January 2000	Ambac selected as monoline insurance provider
20th April 2000	Earliest date for bond launch
26th April 2000	Bond priced at 163 basis points over the reference gilt
28th April 2000	Bond issue launched
5th May 2000	Financial close

Source: National Audit Office

7 To ensure the Treasury's annual payments were as low as possible, Exchequer Partnership agreed to optimise the financial model based on the outcome of the funding competition. The aim of this exercise was to produce the lowest possible annual payment while maintaining the minimum financial ratios and equity returns required by the financiers. As the level of the financial ratios was an element of the funding competition, Treasury and its advisers negotiated a band of minimum and maximum equity contributions. This enabled Société Générale to flex the amount of equity in seeking the optimal financial solution.

1.21 From the responses to the invitation to pre-qualify, Société Générale, in consultation with Dresdner Kleinwort Benson and the Treasury, produced a long list of potential funders. The long-listed bidders represented the best responses to the invitation to pre-qualify when evaluated on price (i.e. impact on unitary payment) and their ability to provide the required amount of funding. The long-listed bidders were provided with a more detailed Funding Competition Memorandum and a due diligence report produced by the technical, legal and insurance advisers, appointed by Exchequer Partnership, to act on behalf of the bidders.

1.22 In addition to the Funding Competition Memorandum and the due diligence report, the long-listed bidders were invited to visit the Treasury building for a presentation given jointly by Exchequer Partnership and the Treasury. Bidders were also given opportunities to meet Exchequer Partnership, the Treasury and the due diligence advisers.

1.23 Finally, Société Générale requested the credit reference agency, Standard & Poor's, to provide the bidders with an indicative project credit rating. Standard & Poor's assess the credit worthiness of countries, corporate bodies, financial instruments and projects, allowing investors to make an informed decision on the risks involved in any financial investment. Standard & Poor's rated the project as "low investment grade". Such a rating was satisfactory because any class of investment grade rating indicates that the probability of financial obligations being met is high and that the project is not considered speculative.

A competitive environment was created

1.24 As this was the first PFI funding competition of its kind, Exchequer Partnership and the Treasury wanted to ensure that as wide a range as possible of financial institutions were invited to take part. By including a large number of financial institutions in the funding competition the Treasury also aimed to get wide acceptance of the standard contract terms. Exchequer Partnership and the Treasury identified all the institutions with PFI experience which were also large enough to underwrite project financing of around £125 million. This exercise resulted in 28 banks, bond underwriters and monoline insurers[8] being invited to pre-qualify (Appendix 2).

1.25 Of the 28 institutions invited to pre-qualify, 9 declined to do so, mainly because they did not feel that they would be able to offer a competitive bid and did not want to commit resources to the competition. From the term sheets supplied by the remaining 19 bidders, Exchequer Partnership selected a long list of the six best bids to provide the project funding while ensuring that the long list included all the different forms of financing appropriate for the project. The long list also included two bond arrangers, making a total of eight institutions who were invited to the next stage of the competition **(Figure 4)**. The long-listed bidders were provided with more detailed project information and requested to submit bids which had received internal credit committee approval.

4 Selected long list of potential funders

Banks	HypoVereinsbank
	Dexia
	Halifax
	Abbey National
Monoline Insurers	Ambac
	Financial Security Assurance
Bond arrangers	Warburg Dillon Read
	Deutsche Bank

Source: Treasury Taskforce

1.26 All six of the long-listed project funding bidders submitted bids, as did the two bond arrangers. Therefore during the funding procurement process, competitive tension was maintained between the different forms of potential financing (bank versus bond solutions) and between providers of the same type of financing. After evaluating the bids it was clear that there was strong competition between the two monoline insurers and that they were likely to provide the best financing option. After consultation, Société Générale therefore decided to omit the planned short list stage of the competition and requested best and final offers from the monoline insurers.

1.27 To further enhance the competitiveness of the best and final offers, without any detrimental impact on the project timetable, Société Générale and Exchequer Partnership introduced a further round of bidding between the monoline insurers. **Box 1** explains the different characteristics of bank and bond financing.

8 *Monoline insurers are institutions that specialise in insuring bonds. By insuring a bond, a process sometimes called "wrapping" in financial circles, the bond investors are guaranteed to receive all payments of interest and principal in a timely manner. Therefore the credit rating of the bond is increased making it cheaper to issue the bond in the first place.*

BOX 1: The different characteristics of bank and bond financing

Financing characteristic	Bank Financing	Bond Financing
Source of funds	Directly provided by a bank or possibly a group of banks that form a syndicate	Funds provided by bond investors. A potentially disparate group that can include anyone from large financial institutions to individual investors
Arrangement of funds	Direct negotiations between the project company and the bank	Arranged via an intermediary known as the bond arranger
Certainty of funds	Once the project company and bank reach an agreement there is certainty over receiving the funding	There is less certainty with a bond. The project company will only know if funding is forthcoming once the bond arranger has started to try and sell the bond. The certainty is increased by appointing a bond underwriter to purchase any part of the bond not sold to other investors
Maturity	Currently up to around 30 years	Currently up to 38 years
Re-payments	Flexible. Repayments can be matched to project cashflows	Fixed (unless index-linked) Repayments on fixed dates, generally at maturity of the bond. Repayments follow an annuity profile on fixed contract dates.
Flexibility	High. As the project company is contracting with a single bank, or group of banks, the financing can be flexible. It is possible to negotiate changes to the project, possible early repayment of the loan or refinancing of the project. Also, if the project runs into difficulties the project company can negotiate with the funders to try and avoid the project collapsing	Very little flexibility. Due to the arms length, and potentially disparate nature of the bond holders in relation to the project company it is very difficult to make alterations to the project. It is very expensive to make early repayments or refinance a project There is also no room for negotiation with regards to the payment of interest and capital.
Receipt of funds	Staged. Banks will allow the project company to drawdown the required funds as and when they are needed during the project. This means that the project company will only pay interest on the amount actually borrowed at a particular time.	Generally funds are received in one go at the time that the bond is sold to investors. The consequence of this is that interest will be paid on the total value of the funds from the beginning of the project. The project company needs to manage this and seek to minimise the costs by depositing the funds in an interest bearing account
Assessment of project risk	The banks will undertake this risk assessment themselves during their due diligence work. The banks will therefore be in the best position to assess the risk and to price the funds accordingly	Bond investors are in a weaker position to assess the project themselves and rely on the bond arranger to make an assessment of the project risk for them. As the bond investors are not always in a good position to assess risk the bond issuer may insure the bond to make the project more attractive to investors
Costs	Front end fees, interest on the funds borrowed and a commitment fee for the available funds not yet drawndown	Interest to the bond investors. An arrangement fee to the bond arranger. An insurance fee if the bond is insured
Ongoing project scrutiny	Significant. The bank will monitor the project carefully to ensure that it is operating viably. If the project runs into difficulty the bank may have step-in-rights to actually run the project	Very little. The bond investors have little influence on the project once it is funded

The evaluation process selected the best bid

1.28 The process of comparing the different bids was relatively straightforward. Funders had been told that acceptance of the project document, which complied with the Treasury Taskforce standardisation, was one of the evaluation criteria. Bids that proposed amendments to the project document were evaluated adversely. The majority of funders suggested no changes to the project document, thus explicitly accepting the contract terms and conditions. As there were no significant differences in the contract terms, terms of finance and deliverability became the only evaluation criteria. Moreover, as the ability to deliver sufficient funding had been a condition of getting onto the long list, the final evaluation became a straight comparison of impacts on the unitary payments.

1.29 Société Générale and Dresdner Kleinwort Benson evaluated the bids, using a single financial model developed by Société Générale during the negotiations between the Treasury and Exchequer Partnership. The original function of the financial model was to estimate how changes to the bid from Exchequer Partnership would impact on the unitary payment. This meant that it could also be used to calculate the effect on the unitary payment of different funding options. The model could be adapted to analyse both bank and bond financing proposals and ensured that all of the bids were evaluated consistently.

1.30 At an early stage in the competition process it became clear that what is known as a monoline wrapped index-linked bond[9] would be likely to provide the cheapest financing solution. This was for three main reasons:

a the project length, at 37 years, some 4 years longer than the longest period for which banks would have been willing to lend, favours bonds. Bonds can be issued for periods of 37 years and would thus reduce the annual debt payment compared to the shorter length bank financing. The lower annual cost meant that the project cover ratios[10] could be met with a lower annual unitary payment;

b index-linked finance, in combination with an indexed unitary payment, means that inflation will have a similar impact on both a project's cost of finance and its revenue, out of which these costs will be met. Index-linked finance can be cheaper in real terms than fixed rate finance, as fixed rate finance is considered to include a premium for the risk of uncertain future inflation, which is a real cost; this enabled Exchequer Partnership to offer the Treasury a lower unitary charge (in real terms) than might otherwise have been possible;

c monoline insurance of a bond reduces the interest rate bond investors will require and increases the attraction of wrapped bond finance relative to bank borrowing. If the reduction is large enough and other factors are favourable, as was the case for the Treasury project, it outweighs the cost of the insurance. The financial markets are, however, dynamic. Although bond financing was more competitive than bank financing at the time of the Treasury funding competition this may not always be the case.

1.31 The fact that the unitary payment was index-linked had a direct impact on the competition. Using Exchequer Partnership's financial model, we examined the potential impact on the cost of the project of allowing bidders to offer a partly index-linked and partly fixed payment stream. The result of this work showed that the cost of the unitary payment increased by about 2%. We do not consider that index-linking the whole unitary payment was detrimental to the competition or that financing could have been obtained on better terms if the potential funders had been allowed the opportunity to suggest variant unitary payment options. However, it is clear that the index-linked payment stream effectively meant that it was difficult in this case for banks to offer competitive bids, compared with bond financed solutions available at the time. In future funding competitions, while necessarily fixing the unitary payment for reference purposes, it might be desirable to allow bidders to offer variant payment streams if they were still consistent with the overall risk allocation desired by the public sector. This would avoid the risk of imposing a systematic bias, at the outset of a funding competition, for or against particular forms of finance.

1.32 The bids from the two monoline insurers were very competitive compared to other bids and close to each other. In the final evaluation, Ambac's bid offered the slightly cheaper solution and it was chosen as the monoline insurer. Warburg Dillon Read[11] was chosen to act as the bond underwriter. Both of the monoline wrapped bond bids offered much better value for money than the lowest priced bank financed bid **(Figure 5)**.

The Treasury achieved its objectives

1.33 Although the funding competition was well managed, there had been a real risk that the competition might not succeed. The standardised contract might not have been accepted by funders in full or the price demanded for full acceptance might have been too high. In the event the original objectives were achieved.

9 *A bond that is insured by a monoline insurer. The fact that the bond is index-linked means that future payments of both interest and the principal will vary according to an agreed price index, in this particular case the retail price index.*

10 *Cover ratios are used by funders to try and ensure that a project is financially robust and to identify if a project is encountering difficulties. There are many different cover ratios, but at their simplest they are a measure of how much surplus revenue a project will generate over the debt service requirements. A project's cover ratios will be incorporated into the project agreement giving them great importance.*

11 *Now called UBS Warburg*

5 Comparison of the bond and bank financed bids

Institution	Ambac £000	2nd Monoline Insurer £000	Best Bank Bid £000
1st year unitary payment payable by the Treasury (March 1999 prices)	13,007	£13,060	£14,095

Source: Treasury Taskforce

The standard contract terms were seen to be acceptable to financiers

1.34 The market consultation exercise carried out by the Taskforce had identified several areas where the finance markets had concerns about the proposed standard contract terms. These concerns and the fact that such a competition had not been held before for a public sector project resulted in Exchequer Partnership having serious reservations about undertaking a funding competition. To provide Exchequer Partnership with some degree of comfort the Treasury agreed to go ahead with the project if the final unitary payment did not exceed an agreed upper limit.

1.35 The competition generated a significant amount of interest to provide the project funding. All 19 of the potential funders that responded to the invitation to pre-qualify were implicitly agreeing to accept the standard contract in a wholly or largely unaltered state. The competition, therefore, gained wide acceptance of the standard terms and conditions, which were published in July 1999 following extensive consultations with the public and private sectors during the preceding year.

The financing was obtained at a good price in terms of risk and cost

1.36 One of the main benefits of the competition was that the project agreement signed in August 1999 between Exchequer Partnership and the Treasury was unaltered by the funders. This meant that the risk allocation between the Treasury and Exchequer Partnership remained unchanged during the funding competition. Draft agreements between a department and a contractor are often amended once a funder undertakes due diligence work, usually because the funder raises concerns over the allocation of project risks. The project agreement between the Treasury and Exchequer Partnership was altered only by technical changes to reflect the specific needs of bond funding and agreed variations to the project specification.

1.37 The final capital structure of the deal was also within the range of possible structures envisaged at the start of the competition. Senior debt provided 90.6% of the funding, mezzanine debt provided 4.4% with the remaining 5% being supplied by Exchequer Partnership's shareholders in the form of subordinated debt and equity.

1.38 **Box 2** explains the different elements of financing that were being competed for. The price obtained for each of these elements and whether this was good value is set out below.

Pricing of the bond was competitive

1.39 As explained in **Box 2** the rate of interest earned by an investor in a bond may be considered to be made up of two elements:

- the interest rate which would be payable on what is known as "the comparable gilt", namely the Government bond which is comparable in tenor to the bond in question. That interest rate is determined by conditions within the gilt market and therefore the funding competition could not have had an impact on this cost.
- what is known as the bond spread or margin. For the most part it reflects the additional compensation by way of interest which investors in the bond require for taking on the credit risk of the project as compared with a "risk free" gilt. The bond spread is largely determined therefore by the credit rating of the project but can be influenced by technical factors such as the ease of selling the bond in the secondary market and by competitive pressures arising from effective marketing of the bond to potential investors.

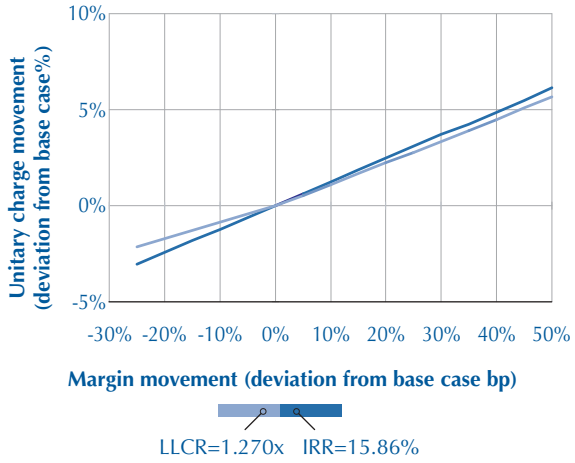
1.40 The importance of the bond spread to the Treasury can be measured. We modelled how changes in the spread altered the unitary payment **(Figure 6 on page 16)**. Every change of 1 basis point (that is, a change of one hundredth of a percentage point) in the bond spread changed the unitary payment by about 0.1%. In practice, bonds of comparable risk may be issued at different spreads. In the case of the Treasury building, if the bond spread increased by 10 basis points the unitary payment would increase by 1% (approximately £140,000 a year in March 1999 prices). It was therefore important that the bond was marketed well. Appendix 3 gives a more detailed explanation of our methodology for calculating the impact of the bond spread on the unitary payment.

BOX 2: Different components of the finance competition and how they could impact on the final cost of the project.

Component of financing	Description and impact on price
Senior Debt	Usually the largest proportion of the total funding, typically in PFI deals between 80-90% but sometimes even higher. There are two sources of senior debt: bank financing and bond financing. Bank financing. The bank will lend money directly to the project company. The cost of this funding is usually measured as a margin over LIBOR. The bank will also determine the cover ratios (see below) required for the project which have a direct impact on the unitary payment. Bond financing. Funding is raised via selling a bond to one or more investors. Interest will normally be paid throughout the life of the bond with the principal capital sum being paid on maturity. The interest rate or coupon rate payable is made up of two elements: 1) the reference gilt rate, and 2) The bond spread or margin. Both are determined by the market but the bond spread can also be influenced by efficient selling of the bond.
Mezzanine debt	Financing ranked below senior debt in terms of repayment. It is, therefore, more expensive and will usually account for a smaller proportion of total funding, 5-10%. Mezzanine financing is often used when senior debt providers will not provide all of the funding required as they wish other parties to take on some of the risks of the project. Potential providers of mezzanine debt will compete on the interest rate amongst other things.
Monoline insurance fees	Monoline insurance refers to insuring, or wrapping, a bond so that it attains the highest investment grade credit rating (AAA). The impact of "wrapping" the bond is that the risk to the bond investors is reduced and therefore the risk premium element of the bond spread will be smaller. Two parts of the monoline fee impact on price: 1 The actual fee, measured as a percentage of the bond value. 2 Payment structure, i.e. if the fee is payable up-front or paid over the lifetime of the bond.
Cover ratios	Cover ratios measure the financial robustness of a project, i.e. whether the project can pay the interest and principal on it's debt and whether sufficient reserves have been accumulated to cushion any reductions in revenues. The debt providers insist that the project company maintains certain cover ratios and usually have the right to step in and manage the contract if these ratios are broken. Cover ratios have a direct impact on price. For example, there might be a cover ratio that measures the ability of the project to meet it's annual debt service repayments. If this ratio is set to 1.3 the project, annually, must generate revenue that is 1.3 times greater than the debt repayments. Setting this ratio to, for instance 1.2, will allow the project company to charge a lower unitary payment as the required revenue to meet the cover ratio is lower.
Bond arrangement fee	Charged by the bond arranger to place the bond with investors. If the bond is underwritten the bond arranger will also buy any of the bond that has not been sold to investors at the end of the placement period at a previously agreed price. The arrangement fee is quoted in terms of basis points of the total bond size.
Redeposit rate	Once the bond has been sold to investors the project company has a large sum of cash before it is actually required in the project. These proceeds will be put on deposit and the interest rate paid is called the redeposit rate. Banks will compete with each other to hold the bond proceeds and may offer different interest rates. It is in the interests of the project company, and therefore the department, to receive a high rate of interest as this income will, to some extent, offset the interest payments falling due on the bond and thus lead to a reduction in the unitary payment.

6 Impact of the bond spread on the unitary payment

The diagram shows how the unitary payment changes as the bond margin moves. The two lines in the graph represent two key project indicators (loan life cover ratio and internal rate of return) that were held constant while the bond margin was flexed. The base case scenario (where the two lines meet) is the actual negotiated deal. A more detailed explanation of the methodology for deriving this graph is at appendix 3.



Source: Operis

1.41 It is difficult to compare the prices of similar PFI project bonds issued at different times as they are not widely traded in the financial markets after they have been issued and their issue price reflects supply and demand on the day that they are brought to the capital market. However, one method for estimating the risk premium that investors attached to purchasing the Treasury building bond is to use the fixed interest swap market[12] as a proxy for risk pricing. This method is not a perfect proxy and there are several caveats to using it to price bonds but it is one of a number of methods used by bond professionals to estimate the issue spread. Appendix 4 explains our methodology for comparing bond prices.

1.42 The Exchequer Partnership bond was launched on 28 April with a spread of 163 basis points. Independent pricing sources indicate that the swap spread on that day was 133 basis points. Subject to the limitations of this method described in Appendix 4, it is therefore possible to suggest that the Treasury building bond was priced at LIBOR[13] + 30 basis points. The closest comparable bond was launched on 13 April for the A13 PFI deal. On this day and on the same basis as above, the relevant swap spread was 126 basis points and the bond spread was 170 basis points. Using the same assumptions as for the Treasury building bond, this gives a higher implied cost of LIBOR + 44 basis points.

1.43 Our analysis indicates that the issue spread for the Exchequer Partnership bond represented a fair price and that the lead bond arranger, Warburg Dillon Read, performed well in marketing and placing the bond. The initial bond coupon, adding the bond spread to the underlying gilt rate, was 3.58%.

Ambac offered the best overall package

1.44 The terms of the funding competition allowed bidders to provide any combination of funding solutions with the exception of the minimum 3% equity from Exchequer Partnership. When evaluating the bids, it was therefore important to consider the overall bid cost rather than the individual elements of the bid. Ambac's bid can be broken down into four elements **(Figure 7)**. Although it did not offer the cheapest solution for all elements, the combined bid provided the most cost effective financing solution.

1.45 As Figure 7 shows, Ambac's monoline insurance fee was higher than that offered by the second monoline insurer. However, the financing was made cheaper by structuring the fee so that only one third was payable immediately, the remainder being payable over the lifetime of the bond. The final part of the bid was the provision of mezzanine financing. Three factors made this part of the bid attractive to Exchequer Partnership

7 Components of the Ambac bid

Element of the bid	Ambac's Bid	Competitior's bid
Monoline insurance fee rate	31.4 basis points	27.5 basis points
Fee structure	⅓ up front ⅔ over life of the bond	½ up front ½ over life of the bond
Mezzanine debt margin	400 basis points	450 basis points
Concession life cover ratio	1.22	1.25

Source: Treasury Taskforce

12 The interest rate swap market is, among other things, used to change the basis on which interest is paid on an asset or liability. Most commonly a floating rate is turned into a fixed rate or vice versa. The fixed rate part of the swap will be related to the Gilt rate. The swap market developed to allow borrowers who were not considered credit worthy enough to access fixed rate bonds to fix their rates of interest.

13 London Interbank Offered Rate - the interest rate at which banks will lend to each other.

and the Treasury. First, Ambac offered to provide the funding at a margin 50 basis points lower than that offered by Société Générale. The second was that, as the mezzanine funders, Ambac agreed to lower the concession life cover ratio from 1.25 to 1.22. The impact of this was that through achieving a lower overall cost of finance Exchequer Partnership could reduce the unitary charge to the Treasury as the concession life cover ratio would be satisfied by lower revenue. The third factor was that a single provider of the senior and mezzanine debt was viewed as being advantageous in terms of management and communication.

The bond arrangement fee was in line with market rates

1.46 Three banks, all of whom were considered capable of underwriting the bond, offered to arrange the bond for a fee of 62.5 basis points. The fact that the three best bidders offered the same arrangement fee suggests that there is a standard fee for this work and that the competition did not provide any savings in this area.

1.47 Warburg Dillon Read and Deutsche Bank were short-listed as the bond underwriters. They were considered equally capable of selling the bond and delivering a competitive bond margin. The decision to select Warburg Dillon Read was therefore based on its offer not to charge bond marketing costs, which had been estimated at £30,000.

The risks involved in managing the bond proceeds were transferred

1.48 When a project is financed by bank debt the contractor will usually draw down the funds as and when it becomes necessary to do so. Excluding any commitment fee paid to the bank for making funds available in tranches, a contractor will only pay interest on the total amount drawn down at any one time. The situation is different with a bond financed project. The bond proceeds are received as a lump sum as soon as the bond has been sold to investors. As a result the contractor can expect to receive a large sum of money which is not immediately required but on which interest has to be paid. To help meet the cost of such interest payments, the bond proceeds will therefore be placed on deposit where they will earn interest until they are used. The difference between the interest earned (on deposit) and paid (on the bond) will affect the contractor's forecast cash flow and hence the unitary payment it is able to offer.

1.49 The Treasury agreed to bear the interest rate risk of the deposit rate changing up to financial close on the basis that it was also competed for. A number of banks were asked to bid on the basis of a Guaranteed Investment Contract[14] to provide banking facilities for the bond proceeds using a pre-determined profile of when the funds were likely to be needed during the construction period. Three banks were invited to bid to act as the bond proceeds holding bank and the difference between the highest and lowest rates bid was 49 basis points. This wide margin between bids suggests that the competition for the redeposit helped reduce the overall cost of the project.

The competition produced a saving in the unitary payment

1.50 The funding competition reduced the first year unitary payment by £974,000 or 7% (some £13 million in net present value terms). This saving includes the benefits of the capital markets identifying a cheaper form of funding (an index-linked insured bond) than had been previously offered by Exchequer Partnership (a fixed rate insured bond) as well as improving the terms on which the index-linked bond financing package was arranged. It is uncertain, in the absence of the competition, whether or not Exchequer Partnership would have funded the project with a fixed rate or index-linked bond. It is certain, however, that the benefits of the competition to provide the index-linked bond resulted in significant savings for the Treasury. The figure used to calculate the 7% saving are at the top of **Appendix 5**.

1.51 The unitary payment at financial close of £14.037m is higher than the £13.981m in Exchequer Partnership's Best and Final Offer bid of May 1999 (in March 1999 prices). The increase in the final unitary payment reflected adverse movements in the gilt rate and the bond margin (or spread), and the additional cost of agreed variations to the project specification. The difference between the final Ambac bid of £13.007m and the financial close unitary payment of £14.037m is detailed in the reconciliation at **Appendix 5**.

14 A Guaranteed Investment Contract usually sets out the amount to be deposited and the depletion profile of this deposit (i.e. when it is planned to be used, usually during the construction phase of a project) during the contract's lifetime.

The process was transparent

1.52 One of the Treasury's objectives was to show transparently that the financing obtained represented best value. This was achieved because of the open and clear way in which Exchequer Partnership and Société Générale ran the competition. Three features of the competition were particularly important:

a There were very good communications between Exchequer Partnership, the Treasury and all of their advisers.

b It was clear that Exchequer Partnership was responsible for all of the decisions made but Exchequer Partnership openly consulted with the Treasury and its advisers.

c The basis on which Exchequer Partnership made its decisions was clear.

Part 2

The option of running a funding competition should be considered for all PFI projects

2.1 Part one of this report looked at the positive impact the funding competition had on the Treasury building project in terms of price and the wider benefits for the PFI of acceptance by the banks and other project funders of contract standardisation. This part of the report examines whether future PFI projects would benefit from holding funding competitions and identifies the issues that need to be considered before doing so.

The risks and rewards of running a funding competition need to be carefully considered

2.2 To ensure that the necessary finance will be available when a contract is signed, current practice in PFI procurement is to require contractors to demonstrate that they have committed funding for a project at a relatively early stage. This may be considered particularly important if capital costs form a large proportion of the total value of a deal. The funding package used by a bidding contractor as the basis for their bid has to be competitively priced if the bidder is to maximise its chances of winning the procurement competition. For this reason, a contractor may have chosen financiers to support its bid through a competitive process, albeit at an early stage in the procurement. If selected as the preferred bidder, however, a contractor will usually be tied into a particular funder or group of funders until financial close of the deal. This approach may not always result in the best value for departments.

2.3 Funders are more likely to offer better terms if they are invited to bid against one another for the financing after a preferred bidder has been chosen and the project risk profile is defined. Departments and their financial advisers should therefore consider whether the introduction of a funding competition after the appointment of preferred bidder could offer better value.

2.4 Deciding to obtain financing after a competition is not without significant risks. The greatest risks are that the project will not attract competitively priced funding and that the funding competition will increase the time and cost of the procurement process. A well managed competition should avoid these risks. However, running a funding competition is a complex undertaking requiring experienced and qualified people acting for both the public and private sectors. If, in the judgement of a department and its advisers the risks of the competition and the complexity of the process outweigh the potential benefits it would be sensible for the PFI procurement to proceed without a separate funding competition.

2.5 If a department decides that project financing should be obtained via a funding competition, legal advice will need to be sought regarding the roles of the various parties and the best way to structure the competition. The funding competition to obtain financing for the Treasury building project was run by Exchequer Partnership which had the responsibility for the procurement of the finance. The reasons for this approach are described at paragraph 1.11. Where a department wants to organise a competition with different allocations of responsibility it should take appropriate advice to ensure value for money is optimised and any relevant legal requirements are met.

A funding competition is more likely to be successful if departments ensure that certain conditions are met

All types of project should be considered for a funding competition

2.6 A competition is more likely to be successful, in terms of attracting funding at a competitive price, if the project is well understood by all the parties involved, especially the potential funders.

2.7 Relatively simple projects in mature PFI sectors, such as prisons, roads and accommodation deals, should be easier to finance via a competition than more complex and novel projects. If a project is relatively simple, funders will be able to assess the project's risks and credit worthiness quickly. Funders will have a greater understanding of what the terms and conditions of such contracts are, will know what has previously been considered commercially acceptable and there is a track record showing that these projects are deliverable. The investment risks of these deals will be easier to assess given that they have already gained a high degree of acceptance within the financial markets. Such deals are likely to have very closely followed the standard contract terms recommended by the Office of Government Commerce guidance.

2.8 More complex projects, with which funders have little or no previous experience, may not be so suitable if potential funders need to undertake considerable due diligence and competition cannot be focussed on price or an assessment of key risks, leading to a protracted period of contract re-negotiation. Such projects may include areas that have not previously been subjected to the PFI/PPP process. The risk allocation and terms and conditions of a novel project will not have been tested in the market. It is less likely therefore, that a competition could be run on the basis of a price comparison alone, as was the case with the Treasury building project, as potential funders may have a different interpretation of the risk profile agreed by the department and the contractor. Any differences in the interpretation of risk would need to be priced and taken into account when making a judgement about the value for money of different bids.

2.9 This does not mean that it is not possible to run funding competitions for more complex or novel projects, that intuitively may be harder to understand or have not been the subject of a previous PFI deal. Indeed the potential rewards from running a funding competition may be greater for these projects than for simpler ones. However, there is a greater risk that complex projects will not attract competitive funding and departments will need to ensure that a funding competition run for such projects is well structured.

2.10 In running a funding competition for a more complex project, a department and its advisers will have to work to overcome the potential problems by carefully presenting and explaining the details of the project to the finance market. This is the process that the Treasury, Exchequer Partnership and their advisers undertook to ensure that the finance competition for the Treasury building project was a success. Although the Treasury building project was not overly complex, the idea of obtaining funding via a competition and the previously untested terms and conditions had to be clearly presented to the market.

The standard terms and conditions should be used

2.11 Departments should also ensure that the contract terms and conditions agreed with the contractor follow standard contract terms. Many sectors of the PFI market now have some form of standard contract and project agreements should only vary from these when it is unavoidable. The advantage of using a standard contract is that, as the terms have already proved to be acceptable, it should be straight forward to run a funding competition based on such terms. A further advantage of using standard contracts is that they should lead to a reduction in advisers' fees whilst the project agreement is being negotiated and a faster time to financial close. Public sector project managers who find themselves negotiating in a sector that does not have a specific standard contract should always use the Office of Government Commerce's guidance on standard PFI contract terms as a starting point.

The amount of funding required will influence the type of competition

2.12 Departments need to consider the size of project funding required. The deal size will influence whether a funding competition is likely to generate interest from a significant number of credible bidders and whether the funding may be provided by a single provider or whether several providers will be necessary to raise all of the required funds. If the deal is considered too small it may not interest a wide range of funders. On the other hand, as the required funding increases, authorities may find that fewer institutions will be able to bid to provide all the funding and eventually there will be a limit above which it will only be possible to raise the funding under competitive conditions via a different approach. The aim here would not be to seek competing commitments for the entire funding requirement, but to obtain commitments to provide the funding within a group of banks.

2.13 As well as the size of the funding required, the split between capital expenditure and ongoing service payments will influence the decision whether to hold a funding competition. The potential that a funding competition may have to reduce a project's costs will increase as the proportion of capital expenditure to total expenditure increases. The reason for this is that significant capital expenditure in the early years of a project will tend to be funded by committed funders, whereas projects with lower or no early capital payments will largely be funded from ongoing revenue generated by the project itself which will support future commitments of finance.

All parties need high quality advice

2.14 One of the successes of the Treasury building deal was the appointment of suitably qualified and experienced advisers to complement the strong project teams of the Treasury and Exchequer Partnership. A survey of the finance markets, conducted as part of our study, suggested that one of the reasons why the competition was seen as a success was because of the high quality advice, financial, legal, technical and insurance, that all the parties received. This level of support, combined with the proactive and strong management of the project teams, resulted in the Treasury and Exchequer Partnership signing a project agreement that was considered, and was proven, to be commercially acceptable. The advisers also evaluated the bids accurately and quickly.

2.15 One of the factors that enabled the financial advisers (Société Générale and Dresdner Kleinwort Benson) to provide good advice was that both have considerable experience in the finance markets and in raising finance. This direct experience meant they understood what the markets would find acceptable and would therefore finance. When appointing financial advisers, a department will have to consider whether an adviser that did not have this experience would perform the role as well as an adviser that does.

Decisions need to be taken in a timely manner

2.16 One of the roles of the advisers was to structure and manage the competition to ensure that the process was efficient and generated maximum interest. It is clear that the funding competition for the Treasury project was well managed, with decisions being taken in a timely manner and pertinent information provided to all relevant parties. The management of the competition was assisted by the fact that a decision to proceed was taken at the same time as the decision to re-open negotiations with Exchequer Partnership.

2.17 In future, a department should keep its options open as to whether the financing should be derived from a committed funder or from a competition. However, all parties and their advisers should take the necessary steps to ensure that, if a decision is made to run a funding competition, it can take place in an efficient and timely manner. The prospect of a funding competition will influence a bidder's choice of advisers and the terms under which financiers may be invited into a consortium.

The number of funders invited to bid needs to be carefully judged

2.18 The Treasury and Exchequer Partnership invited a large number of funders to compete for the financing. There were two reasons for this; (i) by inviting a large number of institutions to apply they aimed to get the widest possible acceptance of the standard terms and conditions, and, (ii) as the first funding competition of this kind for a public sector project, it was thought that inviting a large number of institutions would increase the chances of success. The burden placed on the institutions was reduced by initially asking only for indicative pricing, without internal credit committee approval.

2.19 In future competitions, equally careful thought will need to be given to the number of institutions invited to enter. There is a danger that, if too many institutions are invited, they will be reluctant to bid, on the basis that they have only a small chance of winning. At the same time, there is the need to invite a sufficient number of institutions to ensure that competitive tension will be maintained during the process. It is judgements such as this, that will have an impact on the success of the competition, that highlight the additional responsibilities of running a funding competition and the need for an experienced public sector project management team and good advisers.

The risks inherent in holding a funding competition need to be managed

2.20 In making a decision on whether to hold a funding competition, a department also needs to consider the risks for the entire project and consider how best to manage these risks.

The risk of delay to the project can be minimised

2.21 One of the risks in running a funding competition is that the procurement process will be lengthened, delaying the realisation of project benefits. This is because the funding competition represents a separate procurement at the end of the main contractual negotiations where a third party, that has not previously been involved in the negotiations, is required to sign up to the project agreement. However, the Treasury building competition showed that this risk can be negated if the competition is planned in advance and the process is well managed. By running the funding competition at the same time that the project was receiving planning and listed building permission, financial close was reached only two weeks later than if there had been no competition.

2.22 If commercial contracts are fully developed in anticipation of a funding competition, the time taken to move from appointment of preferred bidder to financial close may ultimately be reduced. The reason is that extended triangular negotiations between the department, pre-appointed financiers and the contractor will be cut out. This puts a greater responsibility on a department and the preferred bidder to negotiate commercially acceptable contracts. The more standard contract terms are used the less due diligence is required.

Costs need to be monitored carefully

2.23 Related to the potential for delay is the risk that the cost of procurement may increase, as advisers are employed for longer than they would be normally. But a well managed competition should result in bid costs falling if the procurement process is shorter and there are less rounds of due diligence work for the funders to undertake.

At preferred bidder stage, the project agreement must be commercially viable

2.24 In the Treasury building deal a committed funder was not in place until after the Treasury and Exchequer Partnership had finalised the project agreement. This had the benefit of limiting the scope for triangular negotiations between departments, preferred bidder and financiers which can arise if the project agreement is not finalised at the time financiers undertake due diligence.

2.25 Ultimately financiers will expect the same level of comfort on due diligence points regardless of when they join the transaction. It is the responsibility of the department, contractor and their advisers to negotiate a contract that is commercially viable and bankable. This will reduce the risk that funders will either not fund the project or insist on significant changes to the project agreement which will then have to be negotiated with a single, preferred bidder.

In the absence of competitive tension, a funding competition may be essential

2.26 A funding competition should be presumed necessary in deals when there is only a single bidder. The benefits obtained from the Treasury building funding competition were that the project was funded with the most appropriate and best priced financing in a manner that was highly transparent. When there is only a single bidder it is difficult to demonstrate that a deal offers the best value. In this situation a department will have to take extra steps to gain sufficient assurance that the deal on offer is value for money, as there has been no opportunity for costs to be driven down by the competitive process.

2.27 There are several ways in which departments can gain extra assurance when faced with a single supplier bid, such as the use of benchmarking or a "shadow cost" model. In addition preserving the right to run a funding competition, after the selection of the preferred bidder, will give a department assurance that the financing for the project has been obtained at a competitive price.

2.28 A second situation that departments may face is where there is a prolonged preferred bidder stage. This too would usually justify a separate funding competition. Although the original bid for the Treasury project had been made in a competitive environment, the PFI market had matured considerably in the fifteen months that elapsed between the termination of negotiations and their subsequent resumption. It was therefore reasonable to assume that the type and cost of funding available had changed and it was appropriate for the Treasury to ask Exchequer Partnership to hold a competition. It would also make sense for other departments in the same position to do so.

Departments should take a close interest in bidders' funding arrangements

2.29 Departments and their advisers will need to make informed judgements on whether the benefits of holding a competition outweigh the risks. However, even when a department decides against insisting on a funding competition, it should seek to understand and monitor a preferred bidder's financing structure, to ensure that the unitary charge is minimised within the agreed risk allocation. Departments, with the help of their financial advisers, should also measure the finance costs of their projects against a set of benchmarks. These benchmarks should include all forms of financing to ensure that the best type of funding is being considered by contractors and their financiers.

2.30 Departments and their advisers should consider a range of approaches to incentivise bidders to achieve the best finance terms. Such approaches could include:

a The traditional method of relying on competitive tension in the procurement process to incentivise bidders to include the most attractive finance as part of their offer.

b As part of the bidding process, contractors could be allowed to propose that they will secure project funding via a competition, if appointed as preferred bidder. To do this the contractor and department would need to be confident that the project agreement was of sufficient quality to attract funding. In addition a department would have to assure bidders that such proposals would gain credit, as appropriate, during the evaluation process.

c Where a department requires a funding competition to take place after appointment of preferred bidder, it must agree the basis on which variations in terms of finance prior to financial close are either borne by it or the contractor. If the contractor takes some of the pricing risk a department will need to agree a suitable benefit sharing arrangement.

Glossary

Basis point	1/100th of 1%. A measure normally used in the statement of interest rates; 100 basis points equals 1%.
Bond	A form of interest bearing security issued by governments, companies and other institutions - usually a form of long-term financing.
Bond margin/spread	The price, usually expressed in basis points, of the bond above the reference gilt rate. The margin/spread represents the risk cost.
Bond underwriter	Financial institution that guarantees to buy the whole bond issue for a fee. Usually the same institution will also act as the bond lead arranger, the institution that finds buyers for the bond. In this project Warburg Dillon Read acted as both the lead arranger and the underwriter.
Capital structure	The make up of the funding employed in a business/project. It usually refers to the proportions of debt to equity or senior debt, subordinated debt and equity.
Concession life cover ratio	A measure of how well project revenues will cover debt servicing requirement over the lifetime of the project.
Coupon rate	The rate of interest payable on a bond and other financial securities.
Credit committee	The internal committee of a financial institution that gives the approval for an investment to be made
Credit rating	An appraisal by a recognised rating service (e.g. Standard & Poor's) of the soundness of an investment.
Due diligence	The analysis and appraisal of a project prior to making an investment decision
Equity	The value of a company or project after all liabilities have been allowed for. The equity is owned by the shareholders.
Funding competition	A process whereby the financing for a project is obtained after a competition involving several potential funders rather than being provided by an incumbent funder retained by the project consortium appointed as preferred bidder.
Gilts	Government securities traded on the London stock exchange. They are called gilt edged as it is certain that the interest will be paid and they will be redeemed on the due date.
Gilt rate	The rate of interest paid on a government security. The gilt rate is often considered to be the risk free rate of interest because of the certainty that the interest will be paid.
GOGGS	Government Offices Great George Street. The offices currently occupied by HM Treasury.
Hedging	An action to reduce exposure to risk. In this case the linking of index-linked funding to an index-linked unitary payment was an act of hedging. The contractors exposure to inflation risk was reduced as changes in the cost of funding will be matched by changes in revenue received.
Index-linked bond	A bond where the value of the interest payments and principal are linked to an index of inflation.
LIBOR	London interbank offered rate. The interest rate at which banks will lend to each other.
Mezzanine debt	A term signifying an intermediate form of debt. It will usually be unsecured and comes below senior debt, but above equity, in ranking for payment in the event of default. Also often called subordinated debt (i.e. subordinate to the senior debt).

Mono-line insurer	An institution that insures investors in the bonds guaranteeing that they will be paid. The effect of this is to enhance the credit rating of the bond to that of the Mono-line Insurer, typically AAA, the highest rating, which reduces the cost of the bond to the bond issuer.
Monoline wrapped bond	The name given to a bond that has been insured by a monoline insurer.
Private Finance Initiative	A Government initiative introduced in 1992 to harness private sector management, expertise and finance in the delivery of public sector services.
Re-deposit rate	The interest rate paid on the bond proceeds after the funds have been collected from the bond investors and the proceeds have been deposited into a bank account.
Senior debt	The debt that is ranked highest in terms of claims on project cashflows and therefore carries the lowest risk that it will not be repaid.
Standard & Poor's	A credit rating agency that assesses the credit risk of governments, corporate entities, financial securities and projects.
Subordinated debt	See mezzanine debt.
Swap	The interest rate swap market is, among other things, used to change the basis on which interest is paid on an asset or liability. Most commonly a floating rate is turned into a fixed rate or vice versa. The fixed interest part of the swap will be related to the Gilt market. Thus a swap is an agreement between two parties periodically to swap interest rate payments, such that one is paying a fixed interest rate and the other a floating rate. The swap market developed to allow borrowers who were not considered sufficiently creditworthy to access the fixed rate bond market to lock into fixed rates of interest. This allows the borrower to mitigate against floating interest rate risk by swapping its floating rate debt for fixed rate debt. The borrower will receive floating rate payments from the swap counterparty (usually a bank) and will make fixed rate payments to the counterparty. When quoting a swap price the convention is to quote a price at which the bank will pay or receive a fixed or floating rate payment. This is the swap rate. The swap spread is the swap rate less the yield on the reference Gilt.
Syndication	The process by which the number of banks or institutions which are party to a credit facility is increased.
Tenor	The duration to maturity of a security, e.g. a bond.
Unitary payment	The periodic payment that the public sector agrees to pay for the provision of services by the PFI contractor.

Appendix 1

National Audit Office Methodology

1 The National Audit Office examined the funding competition held to finance the Treasury PFI deal to refurbish its office space, the Government Offices Great George Street, known as GOGGS.

2 We used an issue analysis approach to design the scope and nature of the evidence required to complete this examination. That is, we set a series of high level audit questions that we considered it would be necessary to answer in order to assess the success or otherwise of the finance competition, and collected evidence accordingly. For each of the top level questions, we identified a subsidiary group of questions, linked logically to the main questions, in order to direct our detailed work and analysis. Our general report Examining the value for money of deals under the Private Finance Initiative (HC 739, 1998-99) provides an outline of this general methodology which acts as a starting point for all of our PFI examinations.

3 The top level questions we set were:

- Was the finance competition well managed?
- Was the finance competition a success in financial terms?
- Was the competition a success in a wider PFI sense?

4 Our main evidence has been derived from examining documents provided for us by the Treasury, interviews with relevant staff within the Treasury and their advisers and discussions with Exchequer Partnership and their advisers.

5 We also commissioned expert consultants to undertake detailed work on our behalf. Deutsche Bank was employed to provide a market view of how the competition was managed and to assess the value for money impact of the different components that make up the financing. We also requested that Deutsche Bank survey the financial community for us to gather information regarding the impact, acceptance and potential replicability of the funding competition.

6 We also engaged Operis, a firm of financial modelling experts, to examine parts of Exchequer Partnership's financial model. Operis undertook sensitivity analysis to quantify the impact on the contracted Unitary Payment of the bond spread being different to that achieved at the time of the bond launch.

7 Finally, we discussed our findings with key interested parties, including Partnerships UK and the Office of Government Commerce.

Appendix 2

Institutions invited to pre-qualify

Abbey National	Halifax
ABN AMRO	HypoVereinsbank
Bank of America	Industrial Bank of Japan
Bank of Scotland	MBIA-AMBAC (now AMBAC)
Bank of Toyoto-Mitsubishi	Morgan Stanley Dean Witter
Barclays Capital	Nationwide
Bankgesellschaft Berlin	Newcourt
CIBC	Paribas
Daichi Kangyo Bank	Rabobank International
Deutsche Bank	Royal Bank of Canada
Dexia	Royal Bank of Scotland
Financial Security Assurance	Sumitomo Bank
FGIC	Warburg Dillon Read
Greenwich Natwest	WestLB

Source. Treasury Taskforce

Appendix 3

The Impact of the Bond Spread on the Unitary Payment

Government offices in Great George Street: Financial Analysis

Operis offers this paper to the National Audit Office by way of fulfilment of its agreement to conduct an analysis of a past transaction now being studied by the NAO.

Version History

This paper has been prepared in the following versions.

Version	Date	Comment
1	3 May 2001 National Audit Office	For release to
2	10 May 2001 National Audit Office	For release to
3	26 October 2001 of SG	Revised to reflect comments
4	26 October 2001	Further refined by Operis
5	29 October 2001 National Audit Office	For release to

Definitions

For brevity, this letter uses short forms to identify the parties concerned:

- "the NAO " refers to the National Audit Office;
- "Operis" refers to Operis Business Engineering Limited;
- "the PFI" refers to the UK Government's Private Finance Initiative;
- "GOGGS" refers to the Government Offices in Great George Street, the principal occupant of which is HM Treasury;
- "the Bidder" refers to Exchequer Partnership;
- "SG" refers to Société Générale, financial adviser to the Bidder;
- "the Transaction" refers to the agreement under the PFI whereby responsibility for developing, monitoring and operating GOGGS was transferred to a consortium led by the Bidder; and
- "the Model" refers to a financial model of the transaction sent by email to Operis for evaluation, "GOGGS21.xls" date stamped. 28 March 2001, 10:47:08.

Background

As Operis understands it, the NAO is preparing a report on the Transaction, which took place some time ago and concerns GOGGS. It wishes to include in the report a brief analysis quantifying the effect on the quoted Unitary Charge that would have resulted from margins on the bond used to finance the project being different from those actually used in the Transaction.

Approach

A public sector organisation wishing to let a concession under the PFI advertise it in a way calculated to attract a number of bids from which it chooses the one it judges most advantageous. Each bid will quote a Unitary Charge, which is the payment that the bidder wishes to receive to provide the specified collection of services. Though price is not the only dimension along which bids are evaluated, it is a significant one. Bidders will compete with vigour to minimise the Unitary Charge they quote.

It is standard practice for bidders to set their Unitary Charge with the help of a financial model. This is a set of mathematical equations which is used to infer from various assumptions, the costs involved in the venture and the future financial results of the project company that the bidder will set up specially to execute the contract. In practice, in the great majority of projects, these equations are set out in a spreadsheet on a computer.

Operis has been provided with the financial model used by the Bidder to structure and price the Transaction. It has used it to work out how the Unitary Charge quoted by the Bidder might have been different from the one quoted had certain of the costs involved been different. The costs in question are the margins that applied to the bond used to finance the project.

Automatic or manual

Financial models used in the PFI are split roughly evenly between ones which calculate a Unitary Charge automatically and ones which do not. The automatic models are programmed to find the smallest Unitary Charge which meets certain criteria that the bidder and its financial backers find acceptable. The manual models simply calculate the consequences of a Unitary Charge specified by the bidder; it is for the analyst to inspect the results, determine whether the criteria are met, and to type in different Unitary Charges until they are.

When building such models itself, Operis favours manual models; they are simpler, and therefore quicker to build, more reliable and easier to understand, and they leave the final pricing to a human analyst who can be questioned by his colleagues rather than to a black box which only some members of the bidding team understand.

There is a slightly more subjective element to determining a Unitary Charge with a manual model than with an automatic one. Given unchanging assumptions, an automatic model will invariably suggest the same Unitary Charge regardless of who is operating it. Two individuals may get slightly different results from a manual model depending on how they interpret the output.

The Goggs Model

Operis has studied the Model and determined that it is a manual model. The Unitary Charge is not calculated by it. Rather, it is supplied as an input by the bidding consortium, which sets it in order to achieve the required returns for equity and comfort margins for debt. This is confirmed by the Data Book:

"The Unitary Payment is determined by means of a process of manual iteration, to minimise the Unitary Payment, subject to achieving the required banking ratios and the required equity return."

And later,

"This process of manual iteration entails adjusting the following variables:

- *the debt and equity funding required, in accordance with the proposed gearing ratios and coverage ratios;*
- *the sculpted repayment profile of the Senior Debt, to ensure that minimum proposed annual coverage ratios are achieved;*
- *the "Availability" element of the Unitary Payment to ensure that the minimum required equity return and proposed coverage ratios are achieved."*

The Ratios

As shown in the following extract, a number of coverage ratios and measures of return are reported by the Model on the page setting out a snapshot of results. It produces over twenty of them, but not all of them would be of equal importance in the mind of a rational bidder.

In fact, the Databook which accompanies and describes the model identifies eight ratios which the Bidder focussed on particularly, and these Operis has highlighted in grey in the extract below. Operis has further surrounded by heavy boxes four ratios which it considers particularly significant.

Debt Coverage Ratios	LLCR	CLCR	ADSCR
Senior - first year	1.277	1.299	1,213
Senior - minimum	1.277	1.299	1.201
Senior -average	1.544	1.761	1.237
Total - first year	1.206	1.226	1.134
Total - minimum	1.206	1.226	1.123
Total - average	1.508	1.723	1.183

Financial Ratios	Nominal		Real	
	post tax	pre tax	Post tax	Pre tax
IRRs	%	%	%	%
Equity and Loan stock	15.87%	17.32%	13.04%	14.46
Project	7.92%	8.78%	5.29%	6.13%

Debt cover ratios

All but one of the highlighted ratios are debt cover ratios. They measure the margin of comfort with which the project can perform its obligations to the providers of debt.

It is helpful when discussing some of these to remind ourselves of the principal milestones in the project.

- The financing of the Transaction is dominated by a bond of £127.79m which was issued in 8 May 2000. That amount is held in an escrow account, and drawn down to cover the costs of reconstructing and redeveloping the Great George Street site as they fall due.
- The bond holders are rewarded for their participation in the project by the receipt of semi-annual coupon payments which start immediately (semi-annual in arrears).
- Coupon payments continue for 35 years and 7 months until the bond is redeemed in 31 December 2035.

We recap this timetable to make two points.

- The Transaction has a finite life of 37 and a quarter years. The Bidder's right to exploit the Great George Street site ceases after 17 August 2037. The bond matures twenty months before this date. This difference is intentional. If the project cannot service the bond in 35 years and 7 months as planned, then there is a 20 month tail to which it has resort, which provides a margin of safety for the bond holders.

Ratios are quoted in which this cushion is and is not included are called respectively the Concession Life Cover Ratios (CLCR) and Loan Life Cover Ratios (LLCR). It would be usual to devote more attention to the LLCR, which will be lower than the CLCR ratios.

- The bond is the largest part of the financing, but not the only one. There is also £6.6m of mezzanine debt. Ratios are quoted for the bond alone, labelled "Senior", and for the bond and the mezzanine combined, labelled "Total". The latter will be lower because they involve the same cash flows covering more debt.

The LLCR and CLCR are good measures of the project's ability to repay its borrowings in the long run. It takes into account the cash flows over many years, and in effect captures an average in which the times that are good offset the times that are not so good. The detail that is hidden by this average can be seen by looking at the cover ratios in specific periods. This is the role of the Annual Debt Service Cover Ratio (ADSCR). The lowest of these ratios, the minimum ADSCR, measures the project's ability to service its debt in the year when things are tightest.

Shareholder's return

The return earned by the shareholders in the project is measured by examining the cash flows that pass between the project company and the shareholders themselves. The Model reports four versions of this ratio: pre- and post-tax, and in real and nominal terms. The one that the bidder has chosen to focus on

- is post-tax, because it gives a measure of the return to the shareholders alone, rather than to them and to the government combined, and therefore better measures the consequences for a bidder of any chosen bid price;
- is in nominal terms, as has been standard practice in recent years. (The real terms measures isolate the element of the return that is not due merely to the action of inflation. They were much focussed on a decade or more ago when inflation was higher and so accounted for most of the return. It is still standard practice to calculate them, even though inflation rates are now much lower; but there are theoretical reasons why the nominal versions are generally favoured.)

First steps

Operis has assumed that the Model operates correctly having been formally audited in the run up to the financial close and having been studied by the NAO and its advisors. Operis has not subjected it to an independent audit of its own. It is, however, prudent to verify one key issue, which is that altering the input that looks as though it controls the margin on the bond (the issue of interest in this paper) does actually affect the Model in the way one might expect.

To do this, Operis has performed the following analysis.

- It has observed that the margin on the bond in the Base Case is 1.63%.[15] That combines with the base rate of 1.952% to give a bond coupon of 3.582%.
- It has calculated the cash flows that flow between the SPV and the bond holders. These amount to the initial injection of the bond proceeds, less the bond coupon (interest payments) and instalments of principal repayment.[16]
- The IRR of these cash flows is 1.813% in nominal terms, but since the bond is index linked it is more useful to report its equivalent in real terms of 1.791%. Since the Model operates half yearly, these are semi-annual rather than annual rates. It can be demonstrated that the difference in rates is equivalent to an indexation factor of 2.5% compounding annually applied to the real terms rate.
- The 1.791% can be reconciled to the bond coupon assumption as exactly half of 3.582%, the difference, again, being between the semi-annual rate used in the model and the annual rate conventionally quoted.
- Operis has altered the bond margin by 10bp, shifting the overall bond coupon to 3.682%. The IRR of the lender cash flows becomes 1.841%; the semi-annual figure again, exactly half the annual rate.

Operis concludes that it can reconcile the linkage between the bond cash flows and the bond margin exactly.

First pass

The Unitary Charge in the Model as shipped is based on a figure of £14,037,123 pa, split between an availability fee of £10,603,346 pa and a service fee of £3,433,777 pa. This figure is subject to inflation, and revision under the Performance Measurement regime or through the result of periodic soft service market testing exercises.

Assuming that this figure is held constant, increasing the margin on the bond will cause all the ratios reported by the model to worsen. The project's revenues do not vary, nor do its operating and capital costs. But of its operating cash flows, a higher proportion is required to service the bond, making the ratio between the two narrower. This effect is mitigated, but not eliminated or reversed, by the reduction in tax payments that results from the higher interest charge.

15 *This is at cell 'Assump'!B35 in the Model.*

16 *Lending banks charge fees when they arrange and commit to advance loans. The equivalent cost in the context of a bond issue is a discount to face value. No fee or discount has been included in this calculation, because the yield on the resulting cash flows would not then coincide with the interest rate, and the mathematical property on which this test is relying would cease to hold.*

We have calculated how much the Unitary Charge needs to be increased in order to offset these effects, and to hold the four principal ratios we identified earlier constant:

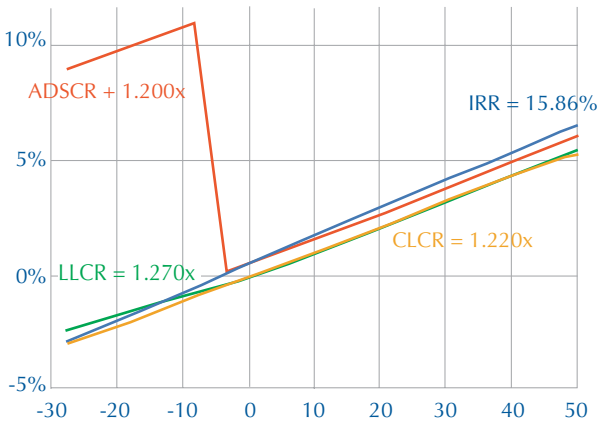
- The blue line in the graph below shows what change in the Unitary Charge is required to hold the equity IRR at its minimum required value of 15.86% as the bond margin is altered;
- The green line does the same for the senior LLCR, which is held at its minimum value of 1.270x;
- The red line does the same for the senior ADSCR, held at its minimum value of 1.200x; and
- The orange line does the same for the total debt CLCR. It is held at its base case value of 1.220x.

The contours on a land map connect points of equal height, and the isobars on a weather map connect points of equal atmospheric pressure. The lines on this graph are similar, because all the points along them have the same IRR, LLCR, ADSCR or CLCR.

The lines cross, indicating which of the four ratios is actually responsible for determining pricing varies depending on the bond margin. Whichever of the lines is uppermost, at any given bond margin, determines the change in Unitary Charge needed to preserve the ratios. This analysis considers four ratios, and as the graph shows, the iso-IRR, iso-LLCR and iso-CLCR traces move roughly linearly with the movements in bond margin. The equivalent for ADSCR does so too, with the exception of a dog leg occurring when the margin falls just lower than the base case.

The ADSCR trace shows the minimum of a series of numbers. Very small changes to the overall cash flows can cause the period that contributes the lowest ratio to jump from one period to another, taxation effects usually being the prime suspect for causing such jumps. The kink in the graph represents just such a jump from one period to another.

Unitary charge movement (deviation from base case %)



Margin movement (deviation from base case bp)

The impression that the pricing needs to be significantly changed to preserve a particular minimum ADSCR can be discounted. In practice a rational bidder would sculpt the debt repayments, as necessary, for a particular combination of financing plan and Unitary Charge to stop the minimum ADSCR from ever being unpalatable to the lenders. In essence the iso-ADSCR trace can be manipulated to give a shape similar to the iso-LLCR.

It can be seen that the iso-IRR trace is uppermost in most cases, the implication that the other three ratios shown here are subordinate to it. Very small changes in the assumptions or the structure of the Transaction could cause determination of the Unitary Charge to fall on any of the other ratios.

Refinement

The analysis just performed gives a good first idea of the effect on the Unitary Charge that would have resulted from bond margins differing from the ones shown in the base case when considering just the most significant four ratios.

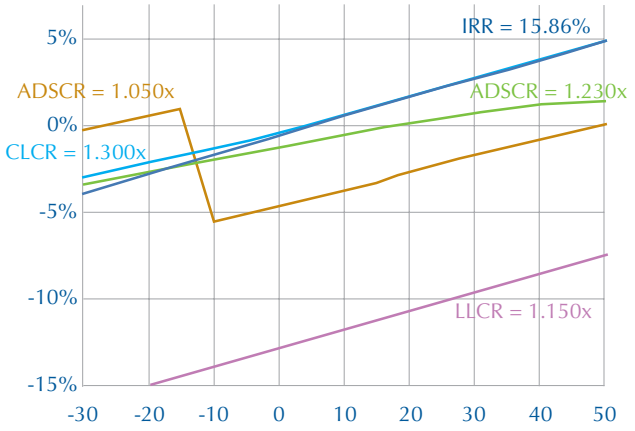
At most of the bond margins explored in the preceding graphs, what actually determined the pricing was the requirement that the equity IRR exceeded 15.86%. Neither the 1.270x LLCR nor the 1.220x CLCR requirement actually bit. What this means is that, given these constraints, the project could stand a little more debt and a little less equity, and the result would deliver a slightly lower Unitary Charge.

In reality the Bidder would have needed to satisfy all of the eight constraints set out by the Databook, not just a certain subset of them. We combine the IRR constraint with the others which we omitted from the previous piece of analysis in order to determine their effect on the pricing strategy of the Bidder. We have used the previous method to calculate the Unitary Charge increase required to hold the following ratios constant at the values required:

Ratio	Minimum value	Colour
Equity IRR	15.86%	
Senior CLCR	1.300x	
Average senior ADSCR	1.230x	
Total debt ADSCR	1.050x	
Total debt LLCR	1.150x	

As before, the Unitary Charge will be governed by whichever line is uppermost on the graph, and as before, it is for the most part the iso-IRR that dictates the price, with the iso-CLCR for senior debt eclipsing it slightly if the bond margin is reduced.

Unitary charge movement (deviation from base case %)



Margin movement (deviation from base case bp)

As noted in the introduction, of the eight measures identified in the Databook as being ones considered by the Bidder in setting the Unitary Charge, all but one measure in different ways the ability of the project to service its borrowings. Just one related to the return enjoyed by the shareholders' investment in the equity of the project company. The ideal state of affairs is that the Unitary Charge is dictated by both the debt and the equity measures. If at a given price the equity is amply rewarded, but the debt is inadequately covered, then the project may be said to be borrowing too much. If the debt is well covered, but the return earned by the equity is too low for the shareholders to find attractive, then the project should seek to borrow more.

The closeness of the iso-CLCR and iso-IRR traces in the graph above shows that measures relating to both debt and equity contribute about equally to the determination of the Unitary Charge. To this extent, the Bidder may be said to have chosen the mix of debt and equity perfectly for this project. Towards the left of the graph, the two lines diverge slightly. If the gap between them was large, it would argue for changing the mix of debt and equity in the financing. That would be understandable; the ideal mix between debt and equity may be expected to change if the cost of one of the two is altered. But even at the left extremity of the graph, the gap between the lines is not large enough to make any such change significant or worthwhile.

Summary

We can say by examining these graphs that each basis point of deviation from the base case in bond margin would result in a change in the Unitary Charge of approximately 0.1%. It would take quite a large shift in the margin for the cost of the bond to alter enough to make it worth changing the composition of the financing; but if such an alteration was made, it would tend to make the effect of the bond margin on the Unitary Charge even smaller.

Appendix 4

Methodology for comparing bond prices

Liquidity

The active buying and selling of securities in any market (i.e. trading) will allow the pricing level of a given risk profile and a given maturity profile to be established. Where this occurs there is said to be liquidity in the market. In general, a liquid secondary market for bonds lowers the funding costs for issuers by reducing the liquidity premium demanded by purchasers of those securities in the primary market. A liquid market is also believed to improve the price efficiency, and therefore the information content of observed prices, of a market.

The secondary market trading level and pattern of buying and selling will therefore be a guide to pricing a new issue, and will also be a guide to where demand exists in the maturity spectrum.

The sterling PFI bond market is relatively illiquid, and it sees relatively modest issue sizes. Over the past three years, the typical PFI bond issue has raised less than £150 million and in the last 4 years only 6 of a total of 16 PFI bond issues have been above £100 million. The smallest, Caledonian Environmental Services, raised £63 million, and was essentially a private placement, being bought by a sole investor. Most PFI bond issues are simply not large enough to be liquid. The exception is the £406.85 million issue for Integrated Accommodations Services plc (guaranteed by FSA, led by Deutsche Bank), which closed in June 2000. This deal has seen fairly active trading.

There will tend to be a trade-off between size and price. Small, illiquid transactions are at risk of attracting an investor price premium to compensate for the 'take and hold' nature of the deal. On the other hand, very large transactions can suffer from the effect of the 'marginal investor'. In other words, there may be a requirement to pay a higher spread in order to sell the last £50 to £100 million of bonds, whereas a slightly smaller transaction could have been sold at a cheaper spread. This is simply illustrated by the build up of the 'book' for a transaction of size which would normally illustrate the total level of demand from investors at differing levels of issue spread for differing order sizes. There is therefore the outline of a 'pricing dumbbell', with spreads being wider for both very small and very large transactions, whilst those in between, of sufficient but not excessive size, achieve more favourable pricing.

At £127.8 million, the Exchequer Partnership bond issue was a good size for the market. It was not so small that investors could seek a large illiquidity premium, nor was it so large that it would have experienced the difficulty of attracting the marginal investor.

Pricing

In addition to the restricted liquidity caused by issue size, the background to demand in the long-term sterling market means that many investors will tend to buy and hold these assets, and there is no great incentive to trade. As noted above, in the absence of a liquid market, it may be difficult to determine an efficient price for a new issue.

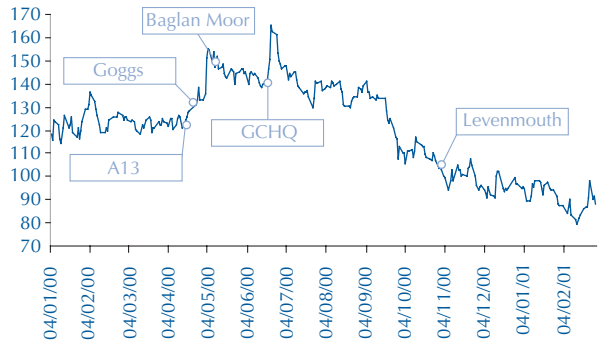
Both investors and bond professionals tend to use the swap market as a proxy for corporate risk pricing generally, as the swap market will see a large volume of transactions on a daily basis. This is not a perfect proxy as the long end of the swap market will itself tend to be less liquid than shorter dated swaps, and there may be a time lag between movement in swap spreads being reflected in a movement in bond spreads. Nevertheless there is probably sufficient correlation between the two to conclude that widening in one sector will tend to mean widening in the other, and volatility in the swap market will tend to mean volatility in corporate/project bond spreads. This also tends to be the case when one considers the index-linked bond market (noting that there is no equivalent RPI-swap curve and in theory there is no reason why a fixed rate swap curve should be correlated with the price of an index-linked bond).

For the purpose of our analysis we can argue that fixed rate investors may look at their return from a potential new investment on a 'swapped Libor plus' basis. We can therefore take the margin over gilt for a new issue and break it down into two component parts, namely the 'implied' swap spread and the margin over swapped Libor. In addition to this volatility in swap spreads there is also potential volatility in gilt rates which will similarly feed directly into the cost of debt.

If there is volatility in swap spreads on the day of pricing/launch, then the pricing of the swap for any competing bank deal will almost certainly move, and the margin over gilt for a bond issue could move.

The graph below plots the 20 year swap rate as a spread over the 20 year Gilt over the course of the year 2000 (Source: Bloomberg), as well as the launch dates of the project bonds in the same period. Please note that the swap spread is derived from screen based rates and will thus present only an approximation of where actual swap spreads would have been on the day, and at the precise time, of bond launch. Nevertheless the graph is reliably illustrative of the volatility in swap spreads (and hence rates) in that 12 month period.

20 year swap spreads (bp) - calendar year 2000



The bond for Exchequer Partnership was launched on 28th April at 163bp over the Treasury 2½% 2020. The 20 year swap spread on that day from the above graph was 132.99. Anecdotally, and subject to our caveats above, one could therefore put the pricing of GOGGS in the region of swapped Libor + 30bp.

The bond issue for Baglan Moor hospital was the closest in line to that for Exchequer Partnership. However, this is not comparable as it was a shorter deal, priced over a shorter (more expensive) Gilt and with a hospital trust as a counterparty, rather than the Government itself (DETR). This deal issued at 185bp over the 21/2% 2016 Gilt. Swap spreads were higher at 150.62 and anecdotally, the market perception is that this increase in swap spreads was caused by a swap competition on another PFI transaction, the MoD main building.

The closest comparable issue was that for Road Management Services (A13) plc, which launched on 13th April 2000 at 170 basis points over the same Gilt, the Treasury 2½% 2020. This deal also had a central government (DETR) covenant, although it was slightly shorter in final maturity (28 years). Using the same historical data from Bloomberg, 20 year swap spreads on that day were 125.82. Anecdotally, one could therefore put the pricing of A13 in the region of swapped Libor + 44bp.

The next PFI bond over £100 million to issue was that for Integrated Accommodation Services plc, which launched on 15th June 2000. Using our own information from the book-building of this deal, and the swap spread from the day, a deal of similar size to GOGGS could have been issued on the same day at swapped Libor + 24bp.

From our own views, and those of the market both now and at the time, the 163bp issue spread for Exchequer Partnership represented a fair price, and indicated a good performance by the lead manager.

Appendix 5

Reconciliation of the Exchequer Partnership Best and Final Offer to the unadjusted Ambac bid and the Unitary Payment at financial close

	Unitary Payment 31.3.1999 Prices £000
EP BAFO May 1999 (based on a fixed rate bond)	13,981
Improved debt service cover ratios and benefit of switching to an index-linked bond	(746)
Information Memorandum Index-Linked model	13,235
Further benefits of the funding competition	(228)
Unitary Payment for Ambac Final Bid assuming historical Interest rates and project timing	13,007
Ambac Final Bid	13,007
Reduction in paying agency and trustee fees	(7)
Agreed construction cost variations	488
Reductions in lifecycle costs	(20)
Unitary Payment assuming historic interest rates	13,468
Interest rate assumptions updated at financial close	
Index-linked gilt reference rate 1.6% to 1.952%	
Index-linked bond spread from 1.3% to 1.63%	
Bond deposit account from 4.2% to 6.47%	
LIBOR increase to 6.5%	569
Unitary Payment at financial close	**14,037**

Source: Treasury Taskforce