



National Audit Office

**REPORT BY THE  
COMPTROLLER AND  
AUDITOR GENERAL**

**HC 1792  
SESSION 2010–2012  
10 FEBRUARY 2012**

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**HM Treasury**

Equity investment in privately  
financed projects

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National Audit Office

**HM Treasury**

# Equity investment in privately financed projects

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**Report by the Comptroller and Auditor General**

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Amyas Morse  
Comptroller and  
Auditor General

National Audit Office

7 February 2012

This report gathers together the available information on PFI equity and combines it with further information we have collected from projects and investors. We use the information to set out a more extensive analysis of the risks and rewards that PFI investors have experienced.

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Appendices Two, Three and Four can be found online at [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012)

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This report can be found on the National Audit Office website at [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012)

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# Summary

## The role of equity investment in privately financed projects

**1** The Private Finance Initiative (PFI) model has been used since the early 1990s. Projects have typically been funded using 90 per cent debt finance from banks and 10 per cent equity finance. Equity investors (investors) have been exposed to the risk that their returns might vary, compared with initial expectations. These investors were also first in line to bear losses if projects encountered serious difficulties.

**2** Investors have typically been either contractors, who also provide services under the contract, or financial institutions. Some investors are interested in a long-term involvement with a project. However, many of those investing in the project at its start, known as primary investors, will sell their shares soon after the new asset has been delivered in order to fund new projects. These primary investors sell their shares to secondary investors who want a long-term stable income from mature projects.

**3** Equity is just one of the components of a PFI project. In July 2010, we reported on the increased cost of debt in *Financing PFI projects in the credit crisis and the Treasury's response*. In April 2011, we reported on *Lessons from PFI and other projects*. The latter report summarised learning points from our recent reports on procuring and managing projects.

**4** The Treasury is responsible for private finance policy and guidance and, on 15 November 2011, the Chancellor announced his intention to reform the PFI model. The Treasury launched a call for evidence on 1 December 2011. This is looking at many aspects of privately financed projects, including the role of equity finance, about which the Treasury has been conducting its own analysis in support of the planned policy reform.

## Scope of this report

**5** Publicly available information on investors' risks and rewards from private finance projects is limited. Some examples of high investor returns have attracted adverse publicity. In order to examine this topic to draw out issues for further consideration we developed an audit approach which, given the lack of available data, drew evidence from a number of sources. The sources included: publicly available data; information held by public authorities relating to the investors' bids for projects; certain unaudited data provided to us by investors; our observations of the way that the PFI market operates from our previous PFI examinations; interviews with parties engaged in PFI projects; and illustrative financial modelling which we undertook on three projects to analyse the relationship between risks and returns.

**6** We examined whether authorities' use of private sector equity in recent standard form PFI contracts is value for money. Our analysis also highlights learning points from involving private investors in government projects that will be of relevance to the Treasury's current review of the PFI model. We examined whether:

- investors positively contribute to delivering the specified public services and encourage beneficial service improvements;
- investors bear, and actively manage, project risk; and
- the returns, for investors, are transparent and reasonable, derived from contracts priced in line with market principles.

## Key findings

**7 The equity investment plays an important role in the structure of PFI projects.** Investors have helped to secure the debt finance that forms the bulk of the funding. Banks, or bondholders, have provided around 90 per cent project finance on condition that a project has been fully developed by investors whose equity will be lost first if the project company encounters difficulties. Investors have also brought together the private sector teams to deliver the required service. The design of the investors' PFI subcontracts, and the investors' oversight of contractors, has contributed to a good delivery record for PFI projects.

**8 However, there is a reputation risk to a private finance programme when investors are perceived to be earning high returns from government projects.** In return for bearing the risks of losing their equity first, equity investors receive all of the remaining cash flows once the project has paid off its third party debt. Where the potential risks have not arisen, this residual value will be sizeable compared to the original amount of equity. Investors will naturally seek to maximise their returns and their aims may not always be consistent with optimising value for money for the taxpayer throughout the contract period.

**9 Investors bear some risks, particularly in the early stages of projects, but these risks are limited.** The main risks PFI investors bear are:

- a** not knowing whether their bids will be successful and whether their bid costs will be recovered in PFI procurements. Procurement has often taken around three years or longer, with losing bidders often involved for a substantial part of the procurement;
- b** that their selected contractors may fail, or persistently underperform. This risk is particularly critical during the construction;
- c** that lifecycle costs will be higher than estimated over the life of the project (often 30 years, sometimes longer); and
- d** adverse events affecting the original investment assumptions on certain other risks including insurance, disputed subcontract responsibilities, rates of inflation and project company running costs.

The risks that investors have borne have, however, been limited in that:

- e investors usually pass most cost risks to their contractors by giving them mainly fixed price contracts;
- f the Government, as the procurer, is a very safe credit risk. This reduces the investors' risk and also their cost of obtaining bank finance;
- g as the PFI market has matured many projects, such as hospitals and schools, have been repeat projects where the format and risks of the projects are well understood;
- h in 84 of 118 projects in operation where investors told us their current experience, investors were reporting returns equal to or exceeding expected rates of return. Thirty-six of those projects were forecasting significant improvements. The remaining 34 of the 118 projects were, however, currently performing below expectations; and
- i in relatively few of the 700 PFI projects have investors reported that they have lost their entire investment, or injected more money to save a project.

**10 To date, the Treasury and departments have relied on competition to seek efficient pricing of the contract, without systematic information to prove the pricing of equity is optimal.** Competition has generally created an expected return to equity of between 12 to 15 per cent at the point contracts are signed. The Government has considered the role played by equity investors and has previously published an earlier study on PFI returns and policy documents intended to place downward pressure on equity pricing. However, any improvement in pricing has not been sustained and information on the investors' experience has remained limited. To date, the Treasury has not systematically gathered data from investors on their actual and forecast returns from operational PFI projects or on their pricing when selling investments.

**11 Our findings suggest that the public sector may often be paying more than is necessary for using equity investment.** We explain in Part Three of this report why there are potential inefficiencies in the pricing of equity:

- **Inefficient procurement.** There is scope for reducing the time and costs of bidding for privately financed projects which is one of the main factors influencing investor returns.
- **Investors' cost of capital.** Investors told us they tend to price equity by reference to a pre-defined internal 'hurdle-rate' required by their investment committees, rather than by reference to the specific risks of the project unless there are higher risks involved (such as traffic demand risk). But PFI projects benefit from the secure payments that the Government as a customer provides.
- **Lender requirements.** The minimum investor returns which are priced into PFI contracts have been strongly influenced by banks through requirements (known as 'cover ratios') for a defined level of cash flow. This provision increases the protection of their loans but is not always needed.

**12 In the absence of systematic information more detailed analysis of project returns can help to assess whether equity pricing is reasonable.** To undertake this more detailed analysis, we made informed assumptions about the relationship between risks and returns in three projects to identify those aspects worthy of further consideration. Our estimates suggested that, while the majority of investor's returns could be explained by reference to the risks they were bearing, we could not explain a proportion of the returns earned by investors. The parts of the investors' returns which could not be fully explained were a relatively small amount – around £1.15 million per annum in total across the three projects – but they were equivalent to around 1.5 to 2.2 per cent of the authorities' payments and could be significant over the long term life of PFI projects. These illustrations do not represent a conclusion on the value for money of those projects and should not be taken as indicative of similar questions in other projects. But they do suggest that there is merit in further analysis of the composition of equity returns.

**13 Authorities have, generally, not been equipped to challenge investors' proposed returns rigorously and may require better support to do so.** Our previous reports on *Commercial skills for complex projects* and *Lessons from PFI and other projects* have highlighted that the public sector needs to use commercial skills better when negotiating with experienced private sector counterparties. Public sector negotiators need accurate data for decision-making, for good project assurance and to challenge options that have been selected.

**14 Some primary investors have sold their equity in successful projects to release their capital and fund new projects which resulted in accelerating the receipt of their returns.** The typical profile of project cash flows provided investors with their returns towards the end of contract periods of 30 or more years. Once projects successfully reached the phase of full operations, some investors accelerated their returns by using either of the two following options, or both:

- **Debt refinancing.** Investors refinanced the bank debt, mainly in the early days of PFI when the banks offered better terms as the PFI market became established. Our previous reports showed examples of debt refinancing resulting in investors increasing their returns from between 12 and 15 per cent to 50 to 70 per cent. Such high returns from debt refinancing have not arisen in subsequent contracts, since the Treasury introduced new terms for sharing gains with the public sector.
- **Sale of equity.** Share sales have enabled primary investors to release their capital and fund new projects, thereby also accelerating their returns. The increased rate of return reflects mainly the higher risks associated with developing and delivering projects. Our analysis has shown that investors selling shares early have typically earned annualised returns between 15 and 30 per cent. In exceptional cases, returns have been higher (up to 60 per cent) or lower (as low as 5 per cent). These returns were mainly driven by the prices secondary investors were prepared to pay to invest in an established project. We consider the potential inefficiencies in the initial pricing of equity will also have been a contributing factor.

**15** There are other potential methods of remunerating investors that the Treasury's current review of PFI is able to consider. In some government projects there have been certain limits to the investors' returns or the public sector has shared in both upsides and downsides by investing in the project. Other potential mechanisms include sharing equity gains from share sales or separate contracts for construction and operations, each priced according to the respective risks. This is, however, a complex area and all of these potential mechanisms have both possible advantages and disadvantages.

### **Conclusion on value for money**

**16** Equity investors have helped to deliver many infrastructure projects and to manage them in ways from which the public sector can learn. The range of evidence that we have drawn upon in this report is too broad to support a definitive conclusion on the impact on past projects of potential inefficiencies in equity pricing. However, it raises a concern that the public sector is paying more than it should for equity investment. There appears to be definite scope for improving the value for money from using equity investment in future government projects. These considerations, together with learning points from our other recent reports on project delivery, need to be part of authorities' wider analysis of when the use of private finance is appropriate for future projects.

**17** The Treasury does not wholly accept the views of the National Audit Office (NAO) and it has asked us to include the following text:

"The Treasury agrees that this is the right time to assess the value for money of the PFI delivery model, reflecting on the nearly twenty years of experience of PFI projects, and agrees with the NAO that there should be scope for improving the value for money from using equity investment in future government projects. The Treasury considers that this aim needs to take into account a wider range of issues that together contribute to the overall economics of a transaction, rather than merely looking at equity returns on their own. This is what the Treasury is currently doing through its call for evidence on PFI reform launched in December 2011. Investors' pricing of equity is inextricably linked to the other terms of a project, which together determine the overall commercial opportunities and risks of the transaction. Prices are agreed with the private sector in response to a competition – in each case where the sponsors of bids are able to bid the lowest equity returns that would enable them to offer the most competitive market pricing at the time for the services required and the risks transferred."

## Recommendations

- a Lessons from the use of PFI equity have relevance to new commercial arrangements under consideration.** The Treasury should take into consideration lessons from the experience of using PFI equity in its development of new commercial models. The lessons should include:
- When designing a delivery method, to consider the most appropriate method for remunerating private investors, while allowing the amount the Government pays for projects to reflect the benefit of having a strong public sector customer.
  - To be aware that attractive projects are likely to encourage a secondary market, which will provide early enhanced returns to initial investors.
  - To be transparent about investors actual risks and rewards, to enable proper assessment of the value for money being achieved from using investors.
- b There is evidence to suggest the public sector may often be paying more than it should for PFI equity investment.** The Treasury should address the potential inefficiencies in pricing by:
- providing guidance to departments on how to challenge bidders' proposed equity returns more rigorously during the procurement stage. The Treasury should consider the role that 'should cost' models might play in such challenges;
  - working with the Cabinet Office and other government departments with policy responsibility in this area, to consider the potential to drive down procurement times;
  - considering whether additional cash flows, which lenders require to protect the repayment of their loans, can be shared with the public sector once the lenders' risks have reduced in mature projects; and
  - giving consideration to other areas where the efficiency of risk allocation and pricing could be improved, such as inflation provisions and changes in life-cycle costs.
- c There are alternative investment models that limit the potential for very high investor returns.** The Treasury should use its current review of PFI to consider alternative models of public private partnerships. It should consider both the advantages and disadvantages of a range of possible sharing mechanisms that reinforce market pricing for equity and reduce the risk of inefficient pricing of risk.

- d The Treasury recognises that there are limitations in the currently available information about investor gains and losses in PFI projects.** The Treasury should establish with investors a standard form of disclosure so that, on each change of shareholder, authorities become entitled to equity sales data sufficient to judge the rate of return to the seller. Authorities should regularly use their contractual rights to obtain up-to-date financial information from project companies.
- e Good knowledge and understanding of the risks retained by investors and their contractors is an important part of effective project management.** Authorities should clarify with project companies how risks transferred to the project company will be managed between the investors, contractors and other parties, such as insurers. This will help the authorities to assess the reasonableness of the investors proposed returns and also to monitor the project's risk management.
- f PFI investors have established active contract management procedures from which the public sector can learn.** The Treasury, working with the Cabinet Office and other government departments with policy responsibility in this area, should consider how the positive disciplines which investors have brought to PFI projects, such as taking immediate steps to enforce contracts and/or resolve problems, could be applied to publicly managed projects.

# Part One

## The role of equity investors

**1.1** Project finance is a form of financing which is provided to a company set up for a single project, including some that develop and build infrastructure projects to deliver public services. Private sector project funding is exposed to project risks and so is more expensive than government borrowing.

**1.2** Banks, or bondholders, will provide around 90 per cent of the project funding as debt on condition that the project has been fully developed by investors whose risk capital, known as equity, will be lost first if the project company encounters difficulties. Investors provide most of this risk capital as loans, because loan interest reduces corporation tax and can provide income once operations commence. They provide the remainder as a small, often nominal, amount of share capital.

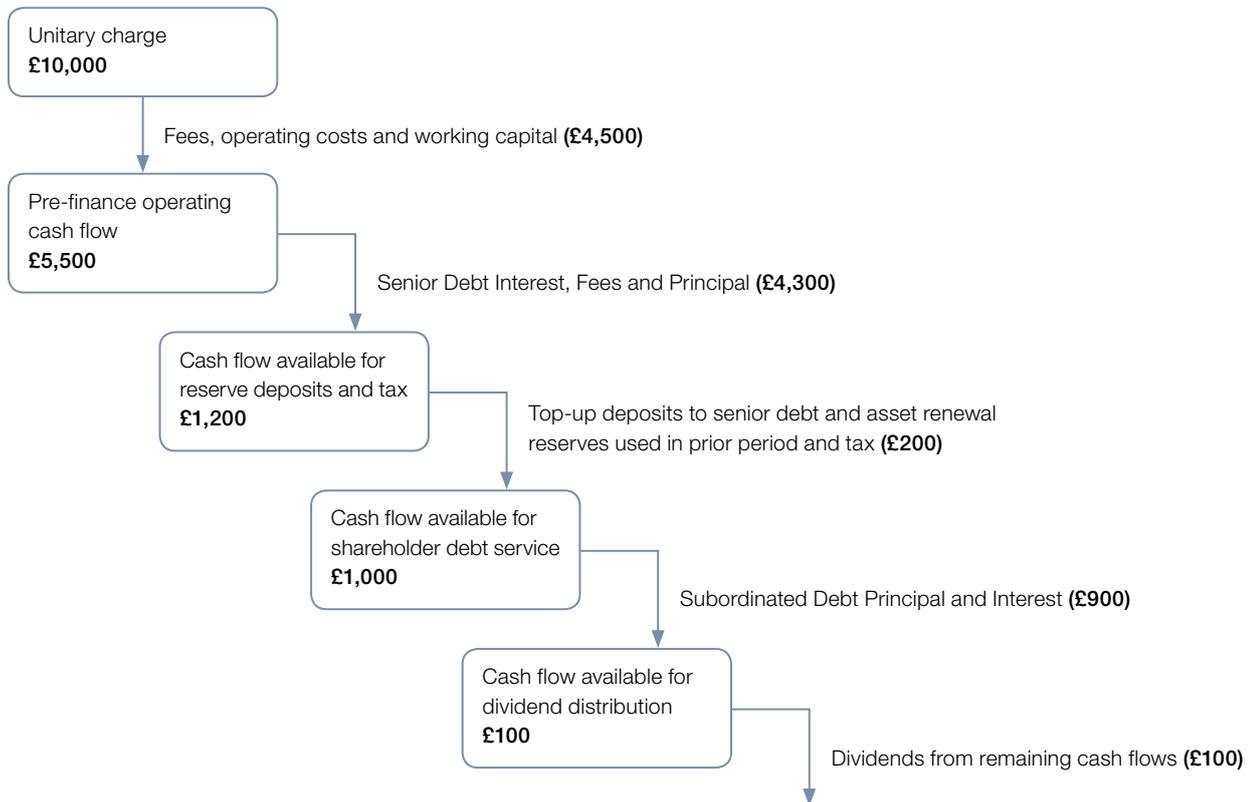
**1.3** The banks' and bondholders' debt is known as senior debt because it has first priority for repayment after operating costs have been met (**Figure 1** overleaf). Only then can the equity investors claim interest on their loans and any cash surplus in the form of dividends. In return for taking higher levels of risk, investors take a higher rate of return, including remaining cash flows once the project has paid off its third party debt. Their profits are subject to performance and can be higher, or lower, than estimated at the start.

**1.4** This section explains the role of equity investors in privately financed government projects, including:

- the relationship between equity investors and other parties involved in a private finance project;
- the different types of investor;
- the contractual arrangements which are generally used to incentivise and reward investors;
- how far the role of equity investors is monitored by the Treasury and authorities; and
- the relationship between risk and reward in assessing the role of equity investors.

**Figure 1**

Illustration of the order, and relative size, of payments made by a project company after receiving service charge payments (cash waterfall)



**NOTES**

- 1 The public sector makes regular monthly payments known as the unitary charge, taken as £10,000 in this illustration. The example shows that from a £10,000 public sector payment, around £4,500 goes to running the project, £4,300 to the banks and £1,000 to the investors (with £200 added to reserves).
- 2 The proportion of costs will vary between different types of projects.

Source: National Audit Office

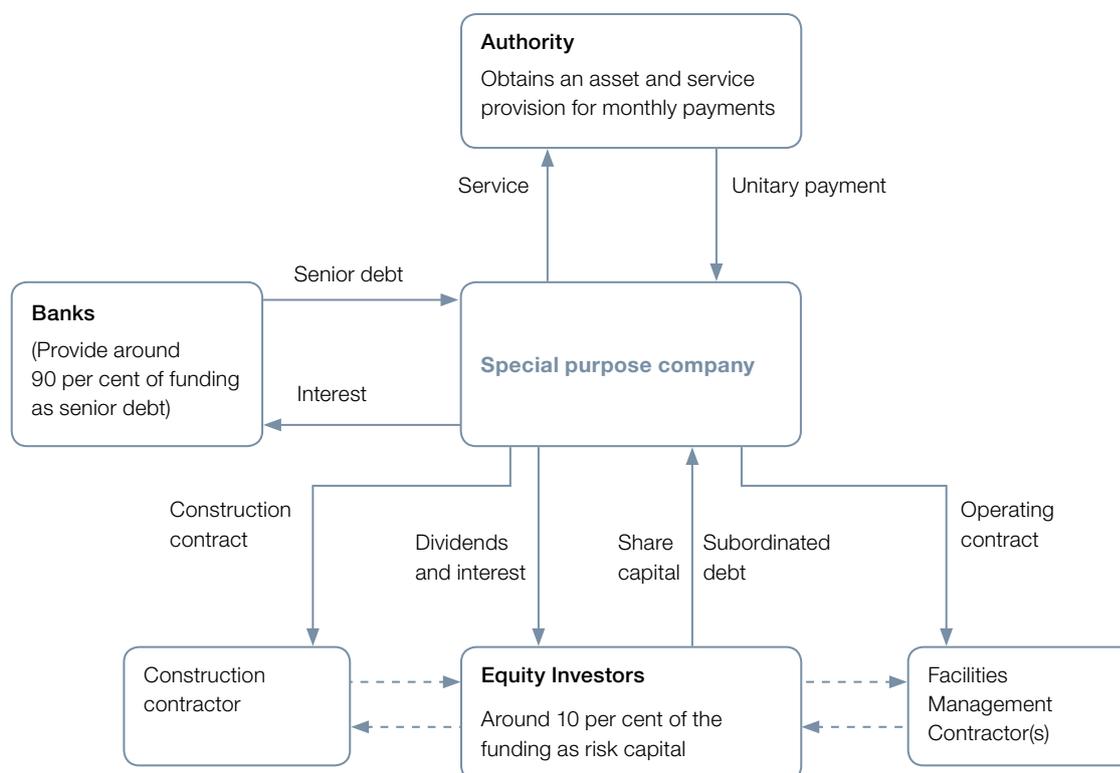
## Investors and the other parties involved in a private finance project

**1.5** A typical PFI project is made up of a complex set of contracts and relationships (**Figure 2**). Investors play an important role in bringing the various parties together and supporting service delivery. They:

- develop the project by:
  - taking the lead in developing the project including negotiating terms with, and appointing contractors;
  - providing risk capital and raising project debt finance; and
  - leading the private sector negotiations with the public authority.
- Oversee the management of the project once a contract has been let.

**Figure 2**

A typical project company financing structure



### NOTES

- 1 Banks, or bondholders, provide the senior debt on a project finance basis.
- 2 Broken arrows represent the likelihood that the contractors will also be investors.

Source: National Audit Office

## The different types of investor

1.6 There are generally two types of equity investors:

- **Equity investors who invest in the project at its start are known as primary investors.** Some primary investors sell their shareholdings soon after construction is complete. This realises their cash so it can be used to develop other projects. They sell their shares to other investors who are not interested in developing projects.
- **Those buying the equity of already developed projects are known as secondary investors.** Secondary investors generally require immediate income from stable cash flows which come during the operational phase of an established project. Some have built up sizeable portfolios of PFI projects (Appendix Two).

## Contractual arrangements that are generally used to incentivise and reward investors

1.7 Equity investors respond to three major incentives under PFI contracts:

- Public sector clients (the Authorities) make no payments until receipt of the contracted services, typically following a construction period. This incentivises investors to deliver assets promptly and effectively.
- During the operational period, authorities have contractual rights to make payment deductions from payments of the service charge if the contractors do not meet the agreed performance standards.
- The senior debt lenders can also prevent the project company making payments to the investors if, for example, the project's ratio of debt service costs to net income threatens its long-term viability. This control further encourages the equity investors to manage actively the contracted service delivery so that performance deductions are minimised.

## How far equity investors' returns are monitored

1.8 Treasury policy to date has been that ensuring effective competition for contracts should deliver the best value for money available from the market for the assets and services required and the risks transferred. The Treasury expect that authorities and their advisers will scrutinise all financial model assumptions, but in our experience this does not involve separate in-depth scrutiny of the price of equity relative to the amount of risk transferred to the investors.

**1.9** The amount of financial information investors routinely provide is limited. When bidding for a contract, the investors disclose a projected rate of return, based on their estimates of project costs and the contract price they have bid. There have, however, been no contractual requirements for equity investors to disclose their actual returns when they sell shares.

**1.10** In 2007, the Treasury introduced a new standard contract clause for new contracts to allow authorities to request financial information that project companies had provided to its lenders. This could be used to monitor changes in the investors' returns. We have, however, seen little evidence that this contractual right has been used by authorities.

### **The relationship between risk and reward in assessing the role of equity investors**

**1.11** Equity investors' returns are expected to be high relative to the senior debt lenders because they take on greater risk. There has not, however, been a recent conclusive overall evaluation of whether equity returns are justified by the amount of risk equity investors bear.

**1.12** In 2002, PricewaterhouseCoopers published a report, commissioned by the Office of Government Commerce, which concluded that there had been inefficient pricing built into past equity rates of return, which informed Treasury's policy statement the following year.<sup>1</sup> In 2006, the Treasury published a policy document setting out expectations that bid level equity returns should reduce as the secondary market matured.<sup>2</sup> However, any improvement in pricing has not been sustained. During 2011, the Treasury looked into the status of the PFI equity market, and the balance of risks and returns for equity investors, to support planned policy reform.

**1.13** However, evaluation of the role and value of equity in PFI projects has been limited by the lack of public information on:

- how actual returns received by investors, and their forecasts of future returns, have changed once projects have become operational; and
- the actual returns made by primary investors when they sell to secondary investors.

**1.14** Using publicly available information, and information we have gathered, we have considered how investors manage risk and contribute to service delivery (Part Two) and the returns to investors (Part Three).

<sup>1</sup> *Meeting the Investment Challenge* (HM Treasury 2003) setting out the Government's position on capturing the benefits of private finance. The PwC report had been commissioned by the Office of Government Commerce, which then had PFI policy responsibility.

<sup>2</sup> *Strengthening Long Term Partnerships* (HM Treasury 2006) set out policy considerations for lowering primary market equity returns.

## Part Two

### The investors' management of risk and contribution to service delivery

**2.1** This section considers how the investors manage the risks they have been allocated and the contribution which they make to service delivery. It considers:

- how investors seek to limit and manage the risks which contracts allocate to them;
- investors' performance in managing risks during the construction phase;
- investors' performance in managing operational risks;
- the risks that remain with the public sector; and
- cost and service changes and improvements.

#### How investors seek to limit their risks

**2.2** Primary investors design the project company's contracts with various subcontractors to incentivise them to manage the risks they control and minimise the risks for both senior debt lenders and investors. Investors retain some risks, especially contractor failure, but these tend to reduce over time (**Figure 3**).

**2.3** Senior lenders also dictate the minimum level of financial reserves required to cover risks borne by the project company. They require the project company to have sufficient financial resources projected in each period over the life of the project to mitigate project risks so that bank loans can be repaid in full. They thus apply a set of standard cover ratios.

**2.4** Investors also carry the risk involved in project development and contract negotiation. A key part of this risk, which significantly impacts on investors' costs and therefore their required returns, is the length and uncertain cost and outcome of the procurement phase. Primary market investors bid for PFI projects during average periods that range from 25 months (for schools) to 38 months or longer (for hospitals and complex projects).<sup>3</sup> Investors told us that, in order to stay in this area of business, they generally need to win one in three tenders.

<sup>3</sup> *Improving the PFI tendering process* HC 149, 3 March 2007.

**Figure 3**

## Changes in investors' exposure to risks

Type of risk	Primary Investor	Secondary Investor
Bidding risk and failed negotiations at preferred bidder stage	✓	n/a
Construction risk and/or inability to meet output specification	Contractor failure	Reduced risk of construction disputes
Incorrect assumptions in the financial model (e.g. deposit interest rates, inflation)	✓	Mainly depends on diligent enquiries at time of purchase
Inadequate protection for inflation	Varies between contracts	Varies between contracts
Failure to deliver output specification consistently	Contractor failure	Contractor failure
Inadequate reserves for life-cycle risk	✓	✓
Unreasonable behaviour and/or non-payment by the Authority	✓	✓

Source: National Audit Office Semi-structured interviews and survey 2011

**2.5** Once appointed as preferred bidder, investors negotiate binding contracts between the project company and the Authority, and with senior lenders and subcontractors. Bidding costs increase during this phase, and there is still uncertainty about the timing of signing contracts. Before signing, there is a risk that the project may be cancelled without reimbursement of bidding costs. As a matter of general policy, the Government does not reimburse bid costs, although it has done so in exceptional circumstances.<sup>4</sup>

### The investors' performance in managing risks during the construction phase

**2.6** The investors pass substantially all construction risks relating to time, cost and quality to the construction contractor. With authorities only making payments when projects are complete, most PFI projects have been delivered on time. But using PFI does not solve all construction problems. In October 2009, our survey of PFI construction projects between 2003 and 2008 found that 69 per cent of construction projects in our sample were delivered within a month of the due date. Eighteen per cent were delivered over six months late, the latest being 36 months late. Where delays had only been as a result of those risks allocated to the private sector, the price payable by the public sector had not increased as a result.<sup>5</sup>

<sup>4</sup> Treasury guidance sets out the principles to follow on the reimbursement of bid costs. On an exception basis, this is included in an invitation to tender. For example, this has applied to some more complex defence and waste disposal projects.

<sup>5</sup> *Performance of PFI construction*, National Audit Office (October 2009).

**2.7** Whilst the majority of project deliveries have been managed effectively by investors, there have been some examples where investors lost money or made a lower return than was forecast in their bid. Most of these investor losses related to the construction contractor failing (**Figure 4**).

**2.8** There are also more common risks that can reduce the investors' returns during construction. These include that the investors' initial economic and financial assumptions, such as the interest rate they receive on their deposits, prove inaccurate. These cost increases or decreases are not generally passed down to subcontractors.

### The investors' performance in managing operational risks

**2.9** Investors transfer many of the risks that can arise during the operational phase to contractors, but continue to manage contracts actively to monitor their retained risks because they stand to lose money if service performance is not satisfactory.

#### Figure 4

Examples of projects where equity losses were incurred relating to construction or refurbishment

Project	Outcome
National Physical Laboratory (2004)	Equity holders lost their £4 million investment, and senior debt suffered an £18 million write-off. Contractors' losses: £67 million by John Laing Construction Limited and £12 million by their subcontractors. On termination after three years' delay, the Authority was left with an unfinished asset worth £85 million (after investment of £122 million). Public sector losses were mitigated by risk transfer to the investors, but the private sector failed to deliver the agreed facilities to specification.
Various Jarvis contracts (2004)	Several projects involving Jarvis companies were delayed and others halted when construction costs exceeded those anticipated during the bidding process. Jarvis plc, and PFI investors, bore the costs of filling the £120 million funding gap and saving PFI projects which included: Whittington Hospital, Tyne and Wear fire stations, Lancaster University and Wirral schools.
Dudley Group of Hospitals (2004-05)	Extra work required during the construction phase resulted in McAlpine losses of around £100 million. The costs of six months delay were incurred by all parties involved in the project, including the equity investors. McAlpine later recovered £23.2 million damages from the Authority.
Metronet (2007)	When Metronet, the company that won two of the three Public Private Partnerships from London Underground collapsed, investors lost their £350 million equity investments. A major contributing cause was delay and cost overrun refurbishing a large number of stations, including lifts and escalators.

#### NOTES

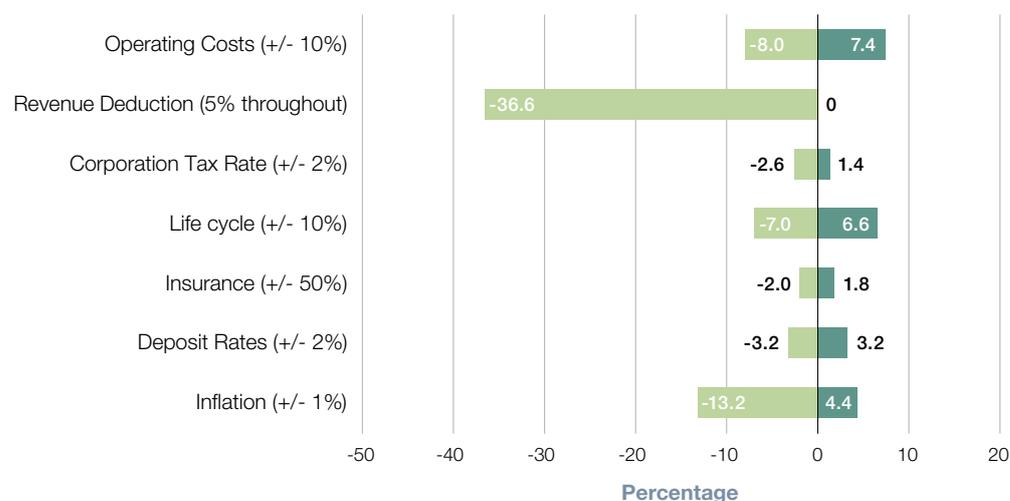
- Public reports of losses do not always distinguish between investor losses and contractor losses. In some cases, contractors have incurred losses to rescue the project company.
- There are examples in Wales and Scotland, such as the collapse of Ballast plc while refurbishing East Lothian schools, dealt with by the equity investors in 2003.

Source: National Audit Office document review and past reports

The investors transfer certain operating risks to contractors but retain others

**2.10** The main operating risks investors retain are performance failure, increased operating costs (including life-cycle maintenance) and adverse changes in original investment assumptions (including insurance cost and coverage, disputed contract responsibilities, and rates of inflation). Investors usually transfer to contractors most of the cost and performance risks of facilities services, such as building maintenance. However, investors retain the residual risk exposure if the subcontractor defaults or if performance payment deductions are sustained over a long period. This could reduce their rate of return by the percentages shown in **Figure 5**. In 2011, we conducted a survey of projects in operation under the most recent form of PFI contract (Appendix Two). Most respondents considered it fairly, or very unlikely, that a subcontractor would default, but could not predict the financial consequences were they to do so.

**Figure 5**  
Sensitivity of returns to risks retained during the operational stage



**NOTES**

- 1 The project financial model has been run for the cost increases or decreases shown, which are percentage points for corporation tax, deposit rates and inflation.
- 2 The revenue deduction of 5 per cent, shown above, is after any recovery from contractor(s).
- 3 For changed deposit rates, see paragraph 2.8. Life-cycle risk is discussed in paragraph 2.11.
- 4 Under some contracts, changes in insurance costs may be shared with the Authority.
- 5 Investors usually have part of the agreed price linked to a price index, but may not be fully protected.

Source: Reproduced with permission from HICL Infrastructure Company Limited Report to investors, 23 September 2010

**2.11** Variance in insurance costs, the costs of maintaining and equipping the building ('life-cycle risk') and contractor credit and performance risk were the three risks most frequently mentioned to us as operating risks retained by the project company and investors. Investors typically also retain other risks of changes in the management and running costs of the project company itself.

**2.12** Few, if any projects have yet to reach the stage of major life-cycle spending. Therefore, the probability of material variations in life-cycle costs remains unknown. Most survey respondents considered that if life-cycle costs were 15 per cent higher than expected, the impact on distributions to shareholders would last for five or more years. Higher cost increases could lead to project company insolvency. But life-cycle costs could equally be lower than expected and, if the benefit of lower costs is not shared, investors will realise additional profit.

#### Active contract management contributes to service delivery

**2.13** Authorities told us that they found a benefit in the way investors actively manage the contracts. Properly resourced project companies are well placed to take immediate steps to enforce subcontracts and/or resolve operating problems that could give rise to payment deductions. Investors with a portfolio of projects can provide a greater level of shared resource than individual project budgets could provide.

**2.14** The standard of service varies across projects. Our previous reports found that most authorities are satisfied with service delivery, but a significant minority are not. The latter point to the lack of flexibility and to high charges for small additional works.<sup>6</sup> These issues can be driven by contract terms or by ineffective project company management, but standard contract terms do not permit increases in equity returns when pricing additional works. There was a similar response from 20 authorities we interviewed, or surveyed for this report, who answered our question on their level of satisfaction with service delivery. Fourteen respondents were generally satisfied, but six were not. There is no evidence that a change of shareholder adversely impacts service delivery.

#### Investors have generally managed operating risks without incurring losses

**2.15** Construction-related issues can extend into the operating phase of projects. Thereafter, we are currently only aware of two projects where problems that first arose in the operating period have led to investor losses (**Figure 6**). As project financial performance is not generally publicly reported, and investor losses can be incurred in situations where service performance is not adversely affected, neither authorities nor the general public will always be aware whether investor losses are being incurred during the operating phase.

<sup>6</sup> *Making Changes in Operational PFI Projects*, HC 205, 17 January 2008. *The performance and management of hospital PFI contracts*, HC 68, 17 June 2010.

**Figure 6**

Examples of projects where equity losses may relate to service delivery problems

Project	Outcome for equity investor
Defence Animal Centre (2009-10)	The Authority terminated this contract in February 2010 on grounds of contractor default. The project company accounts to December 2008 showed £850,000 as a shareholder loan before going into voluntary administration in August 2009.
Cornwall New Schools (2009)	The Authority terminated the contract for unsatisfactory performance and New Schools Cornwall went into administration. The liquidator's report indicates that the investor's equity of £4.8 million was lost.

**NOTE**

1 Public reports of losses do not always distinguish between investor losses and contractor losses. In some cases, contractors have incurred losses to rescue the project company.

Source: National Audit Office document review and past reports

**Ultimate public service delivery risk remains with the public sector**

**2.16** If projects go badly wrong, the investors can lose money, but the public sector may also suffer through delays. Although the public sector is initially protected through reduced service payments, it may, in a rare worst case, incur possible further costs in sorting out problems following termination (Figure 4, page 18).

**2.17** Not all authorities possessed updated financial information on their project companies, despite a contractual right to see such information. Authorities without updated information do not know whether the project company, or its contractors, are facing any financial difficulties that could adversely affect the project.

**Cost and service changes and improvements**

**2.18** In a long-term project, it is desirable if investors work with the Authority to add value to the project and share benefits achieved through continuous improvement. However, there has been little incentive previously for investors to improve services or to identify shared efficiency savings. As with our previous work on hospitals, our interviews found that investors generally did not add value to services beyond the contracted levels.<sup>7</sup> The standard contract terms, however, do include provision for periodic benchmarking or market testing of certain services. This testing of 'soft' facilities management services (such as cleaning and catering but excluding maintenance) provides an opportunity for the public sector to benefit from market efficiencies improvements over the contract's life.<sup>8</sup>

<sup>7</sup> *The performance and management of hospital PFI contracts*, HC 68, 17 June 2010.

<sup>8</sup> *Making Changes in Operational PFI Projects*, HC 205, 17 January 2008.

**2.19** Given the current spending constraints, the Treasury is now seeking savings of £1.5 billion from projects in operation. The Treasury issued guidance to Authorities in July 2011 recommending areas where operational savings should be targeted, including effective contract management, optimising the use of asset capacity and applying service standards consistently so that the public sector is only paying for the level of services required.

**2.20** In some instances, investors who are also facilities managers under a subcontract have cooperated with authorities to make operational savings where this did not have an adverse impact on returns. The Treasury told us that financial investors have also cooperated with operational savings initiatives on a similar basis.

**2.21** In seeking other savings, project company managers said they were concerned not to expose their companies, or senior lenders (whose consent would be needed), to the risks that cutting back on maintenance costs might entail. Investors holding portfolios also told us that it was hard to make economies of scale because most costs are set by long-term contractual arrangements and negotiations with subcontractors would have to involve co-investors and lenders. Investors are making some economies of scale, achieved for example on insurance costs, which are generally shared with authorities. However, savings in project company management costs are not shared, although they may be reflected in subsequent PFI bids.

# Part Three

## Returns to investors

**3.1** The return to investors is value for money if there has been sufficient competition to provide the equity and there is evidence that their expected rate of return is comparable to other investment opportunities with similar risk. However, PFI contracts are not easily compared with other types of investment. Without clear comparators, we investigated six factors relevant to PFI equity rates of return:

- How equity is priced in PFI contracts.
- Meeting lenders' requirements.
- Changes to investors' returns from project performance.
- Increased returns following debt refinancing.
- Primary investors' returns from sales of equity.
- Secondary investors' returns.

We also set out an illustrative analysis of individual project returns and comment on alternative models for remunerating investors.

### How equity is priced in PFI contracts

**3.2** In general, the Treasury and Authorities have relied on competition to seek efficient pricing of the contract, without systematic information to prove the pricing of equity is optimal. When bidding for a PFI contract, the project company includes details of the projected rate of return to equity investors. Authorities are expected to conduct a full assessment of the project, including reviews of the financial model, and seek financial advice on how the proposed investors' returns compare to market norms. However, investors do not have to demonstrate that their returns are reasonable for the specific risks of the project. There is thus a risk that if competition is not present, or if there are inefficiencies in the PFI equity market, that value for money may not be optimal.

**3.3** Investors told us that they do not conduct detailed calculations to determine the rate of return they seek when bidding for a contract. Instead their company boards consider specific risk factors for higher risk projects and for others set minimum rates of return for projects known as hurdle rates, which reflect their cost of capital. These hurdle rates include investors' need to recover their costs for bids they have not won. The hurdle rate, together with any cash flow requirements set by a project's bankers, establishes the minimum equity return that investors propose in their bids.

**3.4** The expected return to investors agreed when PFI contracts are signed typically ranges between 12 and 15 per cent. This has been confirmed by a number of different studies over the past decade:

- PricewaterhouseCoopers reported in 2002 that from the mid 1990s to 2001, as market acceptance of PFI increased, the planned pre-tax equity rates of return generally fell from over 15 per cent to around 13.5 per cent.<sup>9</sup> Some early PFI deals had included expected returns to investors as high as 20 per cent.<sup>10</sup>
- We reviewed the private sector's initial financial projections in a sample of 24 PFI projects awarded since 2005. The initial projected rates of return ranged from 12 to 17 per cent (**Figure 7**). Our sample excluded PFI waste to-power projects, which may have higher rates of return because of their complexity and technical risks. Our sample is supported by our earlier work which showed that 14 PFI school deals let between 2006 and 2008 had projected equity rates of return in the range 12 to 15 per cent.<sup>11</sup>
- A study published by the Royal Institute of Chartered Surveyors in 2008 of returns to investors from investing in infrastructure companies, using the UBS Global Infrastructure and Utilities Index, shows an average annual return of 12.8 per cent in the ten years to the end of 2006.<sup>12</sup>

### Meeting lenders' requirements influences equity returns

**3.5** Lenders' controls can act to underpin minimum investor returns. The debt agreements between the lenders and the project company specify 'cover ratios' for the minimum amount of cash that the project company must generate to cover its debt service obligations, after paying its operational costs. The required level of cash reserves leads to a higher service charge payment and, if unused, supplement the investors' returns.

<sup>9</sup> These are nominal rates of return based on cash flows uplifted for assumed levels of future inflation.

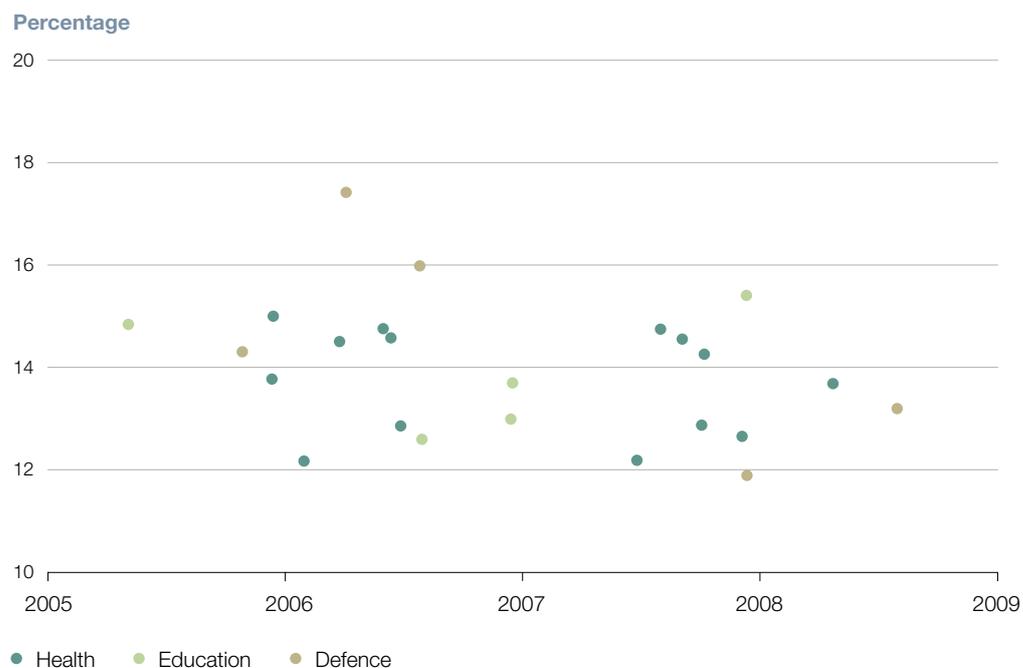
<sup>10</sup> *Update on PFI debt refinancing and the PFI equity market*, HC 1040, April 2006.

<sup>11</sup> Post corporation tax nominal rates of return in *Renewing the secondary school estate*, HC 135, February 2009. The National Audit Office survey included 18 PFI schools projects. Four of these projects provided financial models as part of the work for this report.

<sup>12</sup> G Newell and H W Peng, 'European Infrastructure Investment: A Valuable Addition to the Mixed-Asset Portfolio', *Fibre Series*, RICS, London.

**Figure 7**

Rates of return in bids for equity at contract award

**NOTES**

- 1 Nominal rates of return in financial models are typically given after paying corporation tax.
- 2 Waste projects are excluded because their equity rates of return reflect risks not found in other types of PFI project.

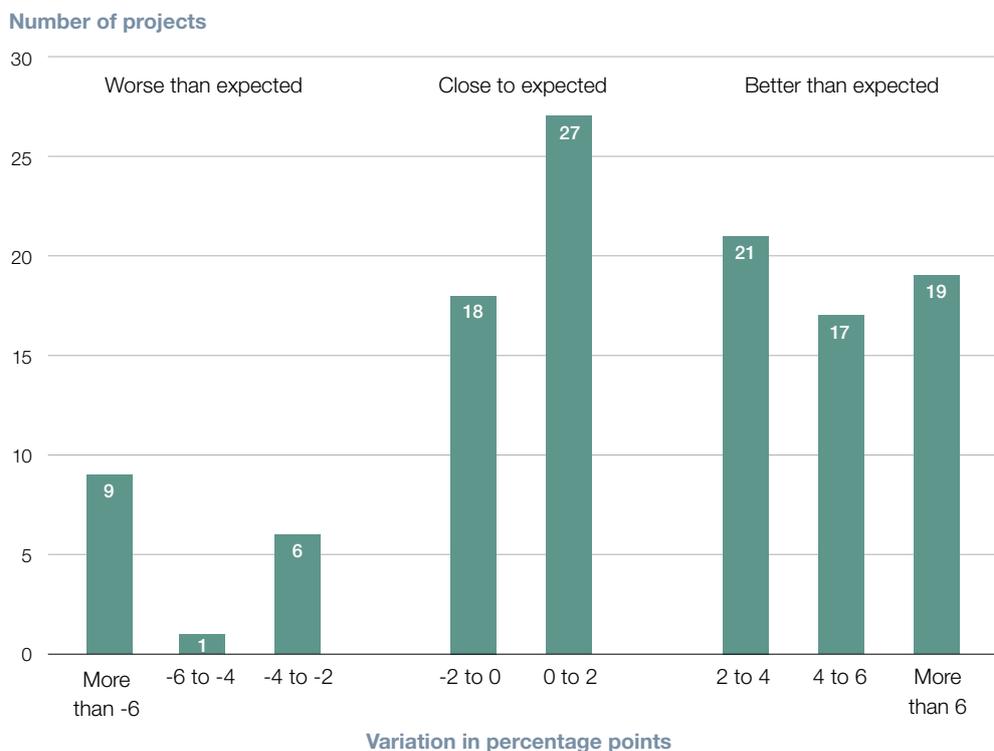
Source: National Audit Office analysis of project financial models in sample of 24

**3.6** In 18 of the 24 financial models that we examined, there were periods when the cash available was equal to, or no more than, 10 per cent greater than payments due to lenders. Investors had sought revenue to give them a small margin for error in their forecasts. They could go no lower without increasing the risk that even minor project problems would allow lenders to prevent distributions to shareholders, or at worst result in a default under the senior debt arrangements.

### Changes to investors' returns from project performance

**3.7** As part of their management of their investments, investors monitor project performance and update their forecast of the return they expect to receive from a project as the project progresses. In autumn 2011, primary investors provided us with information on how the returns they expected to achieve on 118 projects had changed since the contract was awarded. They told us that they were forecasting returns in 84 of these projects that were equal to or exceeded the originally forecast rate of return (**Figure 8** overleaf). Investors were forecasting reduced returns in the remaining 34 of the 118 projects.

**Figure 8**  
Variation in forecast project returns



**NOTE**

1 Reported projected returns for PFI projects in operation, but – in almost all cases – not yet at the stage of significant life-cycle expenditure. Depending on such expenditure, and other risks, the reported forecast returns will keep changing.

Source: National Audit Office analysis of investor submissions

**3.8** Some of these forecast changes were large. The rate of return had increased by at least four percentage points since the contract was awarded on 36 of the 118 projects, while the forecast return on 10 projects had decreased by over four percentage points. On projects with a planned pre-tax rate of return of 13 per cent, a change of four percentage points would alter the rate of return by around a third. All these projects are in operation, but have yet to reach the stage of significant life-cycle expenditure. Depending on such expenditure, and other risks, future returns will vary.

**3.9** Investors expect their return over the life of the project to be volatile. Large debt payments, high fixed costs, and the way that investors receive all the residual cash flow value remaining in the project when it is complete, mean that small changes in the special purpose companies' cash flows can have large effects on the equity returns. Although investors transfer most cost-related risk to their contractors, they remain exposed to a range of risks (paragraphs 2.6–2.12). For example, early or late delivery of construction can lead to large changes in the equity return.

## Increased returns following debt refinancing

**3.10** In some early PFI deals financed using bank debt, investors secured improved returns through refinancing project debt, as confidence in investing in PFI deals strengthened. Our previous reports identified that, in some cases, refinancing resulted in investors increasing their returns from between 12 and 15 per cent to 50 to 70 per cent. Such high returns from debt refinancing have not arisen in subsequent contracts, since the Treasury negotiated arrangements with investors to share refinancing gains.

## Primary investors returns from sales of equity

**3.11** There is an active secondary market for PFI equity. Most sellers are investors whose main business is providing construction or facilities management services, rather than institutional investors. They sell their equity to release their capital, allowing them to bid for new contracts. Institutional investors see more value in earning the original equity post-tax return (12–15 per cent) for 20–25 years, rather than sale proceeds typically equivalent to annualised rates of return of 15 to 30 per cent per year for, say, five or six years.

**3.12** The Treasury has not previously required disclosure of sales proceeds. Using data for some 100 projects for which there is publicly available information about sales of equity from 2003 to 2011, we calculated the sellers' rates of return (referred to as 'exit returns') using two methods:

- **Valuation on commitment.**<sup>13</sup> Often investors inject only a small proportion of their promised investment into the project at the start, but commit to providing the rest on demand. In the meantime they substitute the committed amount with debt borrowed from a bank. This loan, known as an equity bridge, is repayable when the construction phase is complete or immediately if problems arise. The valuation on commitment method treats the whole commitment as if it was invested at the outset, as this is when the equity is 'on risk' for delivery of the project. This method is used by many investors to calculate their return.
- **Valuation on cash injection.** We also calculated the present value of the equity investment at the start of the contract, allowing for investment gains in the period between contract award and the date when the investors paid off the equity bridge loan.<sup>14</sup> This approach is the one recommended by Treasury for most purposes when calculating returns to equity in PFI deals.

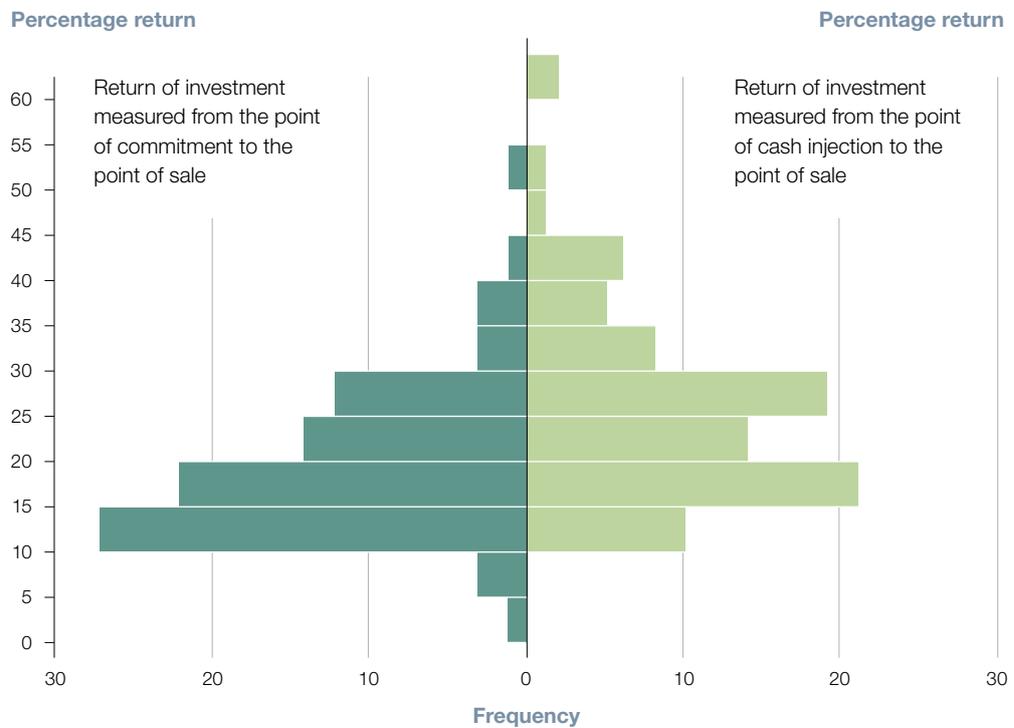
<sup>13</sup> The date of contract is the date from which investors bear project risks and may have to fund their investment in full.

<sup>14</sup> As an indicator of potential investment gains during the bridging period, we discounted the period from commitment to the date of cash injection at the interest rate included in the loan agreement.

**3.13** Using the valuation on cash injection method, our analysis shows that primary investors have typically achieved exit returns of between 15 and 30 per cent when they have sold their shares (Figure 9). The valuation on cash injection method typically measures these exit returns as six to seven percentage points higher than the valuation on commitment method. Depending on the method used, in a few exceptional cases, the exit returns were as high as 40 to 60 per cent, although these were all for deals signed before 2003. Figure 10 shows the distribution of exit returns by size and date of sale, with most of the higher returns coinciding with secondary market investors' prices reaching a peak in 2006-07 (see paragraph 3.20). A few had returns as low as 5 to 10 per cent.

**3.14** The main influence on exit returns is the rate of return that purchasers seek to achieve from the project. The future cash flows of the project carry a public sector payment obligation that is attractive to purchasers provided the project has a low operating risk. Project risks reduce once a project reaches operational stability and a secondary investor does not need to recover costs relating to PFI procurement. Also, there is greater certainty over future cash flows when the construction phase is satisfactorily complete.

**Figure 9**  
Estimated exit rates of return

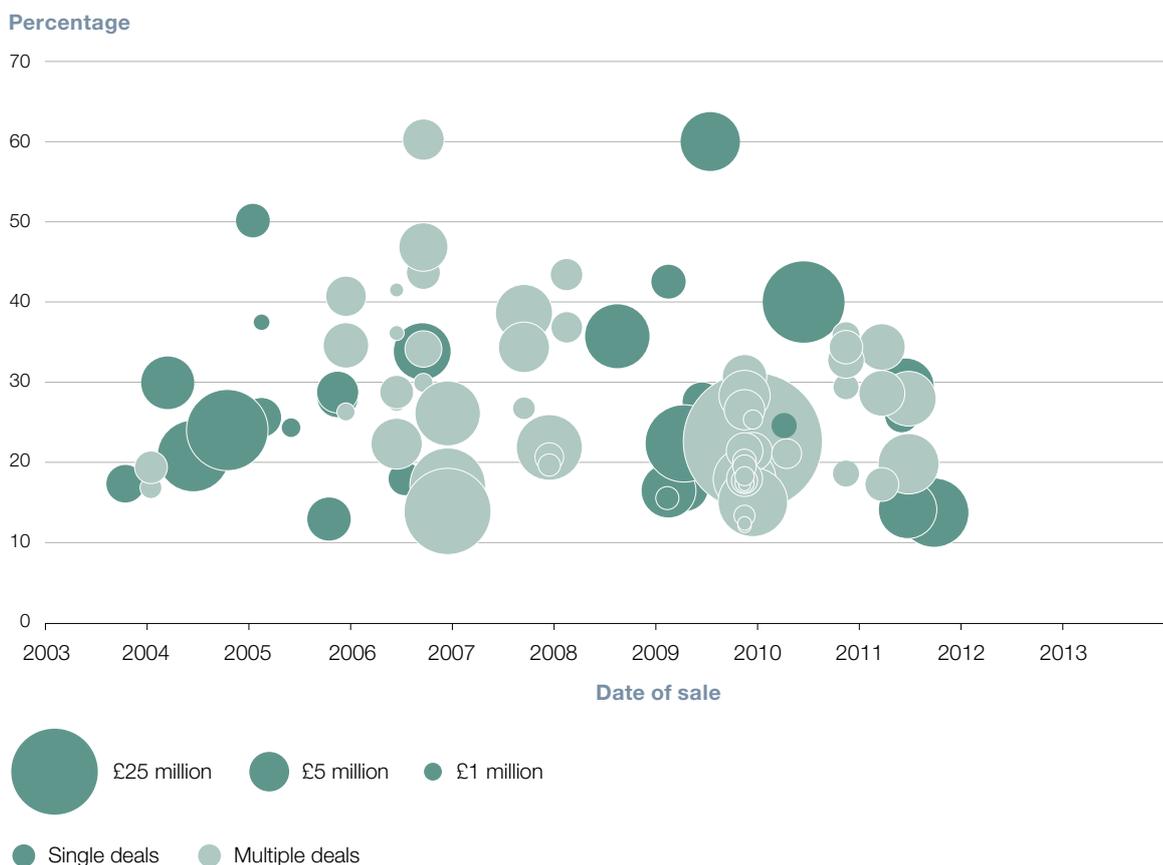


**NOTE**

1 We looked at all 200 sets of project company accounts, for which sales had been reported, both at financial close and for the year of the sale. This broadly supports an estimate of the pattern of annualised returns. However, there may be special circumstances affecting specific deals of which we are unaware.

**Figure 10**

Exit rates of return showing the size, and dates, of equity sales

**NOTES**

- 1 Exit returns are shown, using the valuation on cash injection basis, with the area of each circle denoting (i) the amount of sale proceeds in the year of the sale, for future cash flows that are subject to corporation tax; and (ii) in some cases any amounts of shareholder loan interest received prior to the sale.
- 2 Project company accounts at financial close, and for the year of sale, have been relied on to identify relevant amounts and dates. Shareholder loans have been acquired as part of the purchase in all but three cases. There may be special circumstances affecting specific deals of which we are unaware.
- 3 In a multiple sale, the buyer acquires more than one project company from a single seller and sale proceeds have been allocated pro rata to the original amounts invested.

Source: National Audit Office analysis of publicly reported data

**3.15** As a result of this reduced risk, purchasers are often willing to accept a lower rate of return than that originally bid by the primary investor.<sup>15</sup> **Figure 11** overleaf shows how in an illustrative project (based on an actual project where there had been a sale of PFI equity) this can increase the primary investors' rate of return significantly.

**3.16** There are no contractual arrangements for the Government to share in the profits from the sale of PFI equity. PFI investors are, however, subject to UK taxation rules on chargeable gains. Some PFI investment funds have chosen to incorporate outside the UK, for example in Guernsey, but most UK-based shareholders in such a fund will still be liable to capital gains tax. Most foreign investors will be exempt.

<sup>15</sup> The overall expected project return is the internal rate of return (IRR) that an investor would earn on the amounts shown in a financial model of the project, prepared when signing the contract.

**Figure 11**

Primary investors can achieve high exit rates of return because purchasers are willing to accept lower rates of return than the project's original rate (illustrative sale)

Project returns		Primary investor returns		Secondary investor returns	
Year	Cash flow (£000)	Year	Cash flow (£000)	Year	Cash flow (£000)
2005	-1,700	2005	-1,700		
2006	0	2006	0		
2007	0	2007	0		
2008	0	2008	0		
2009	120	2009	120		
2010	120	2010	7,120	2010	-7,000
2011	120	<b>IRR</b>	<b>34%</b>	2011	120
2012	120			2012	120
2013	120			2013	120
2014	120			2014	120
2015	120			2015	120
2016	120			2016	120
2017	120			2017	120
2018	120			2018	120
2019	120			2019	120
2020	120			2020	120
2021	120			2021	120
2022	450	Secondary market sale does not change project's rate of return over its lifetime		2022	450
2023	500			2023	500
2024	815			2024	815
2025	715			2025	715
2026	650			2026	650
2027	800			2027	800
2028	900			2028	900
2029	950			2029	950
2030	1,500			2030	1,500
2031	2,700			2031	2,700
2032	9,000			2032	9,000
2033	14,000			2033	14,000
<b>IRR</b>	<b>14%</b>			<b>IRR</b>	<b>8%</b>

■ Construction phase    ■ Operational phase

Using the valuation on cash injection method and with unchanged annual cash flows, the seller can generate an exit return of over 30 per cent per year. This is possible because the purchaser has accepted returns six percentage points below the original expected project return.

**NOTES**

- 1 The initial investment was £1.7 million (including £200,000 in shares and a shareholder loan).
- 2 The secondary investor pays £7 million for project company shares and income from the shareholder loan.
- 3 Projected cash flows after 2008 are subordinated loan interest and repayment and dividends.

Source: National Audit Office analysis of an illustrative sale

## Secondary investors' returns

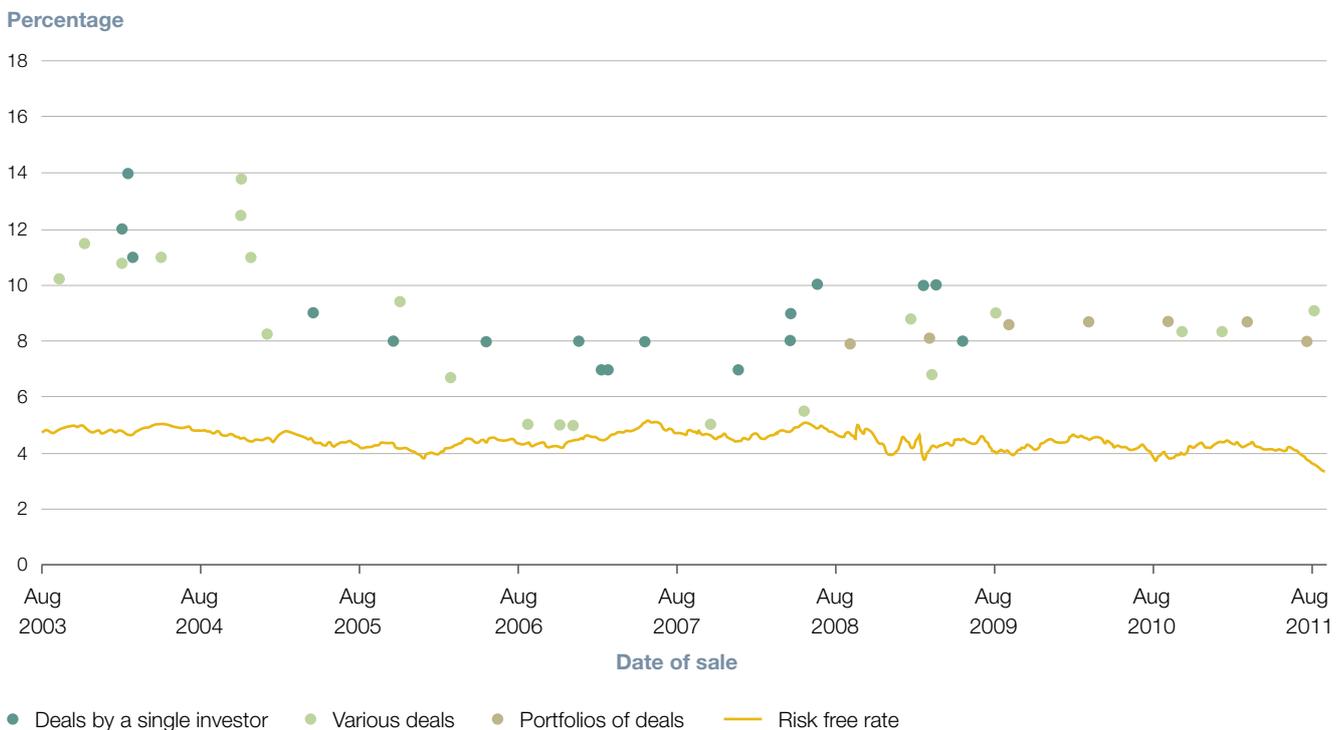
**3.17** Secondary investors tend to be specialist PFI investment funds, some of which have built up substantial portfolios of PFI investments (Appendix Two). Investors in these funds can include pension funds, which invest in relatively stable long-term projects.

**3.18** As with primary equity, efficient secondary market pricing relies on transparent competition and matching prices with comparable investments. All the investors we interviewed considered that the secondary market was indeed competitive. There are few barriers to entry other than having sufficient funds.

**3.19** **Figure 12** compares secondary market rates of return with the relatively risk-free rates available from UK government bonds. The annualised rates of return that secondary investors required fell from around 12 per cent in 2003 to just above 7 per cent in 2005. This fall reflected wider market changes, secondary market competition and growing investor understanding of PFI operating risks.

**Figure 12**

Reported secondary market rates of return



### NOTES

- 1 The prices paid reflect the value of future cash flows after paying corporation tax.
- 2 An investor informed us about a purchase in December 2005 in which the rate of return was 12.1 per cent, which was considerably greater than rates of return linked to other sales in the same month. We did not include this rate of return in the above graph or the analysis in Figure 14 because it was an outlier and we had no knowledge of the project(s) included in the sale.

Source: National Audit Office analysis of investor information

**3.20** Returns fell further in 2006-07 to just above 5 per cent, reflecting a period of intense competition by secondary investors.<sup>16</sup> Some of these investors borrowed at such low interest rates that they could pay particularly generous prices to primary investors.<sup>17</sup> However, low interest loan finance became unavailable during the financial crisis and the reported rates then moved back to earlier levels of around 8 per cent.

### Illustrative analysis of individual project returns

**3.21** In the absence of systematic information to prove the pricing of equity is optimal, we show here how more detailed analysis can assist an assessment of equity returns. To illustrate this, we analysed the component parts of proceeds from three sales to see if we could relate the return to our estimate of the value of the risks borne by the investors. We choose these sales because the projects were in our survey sample and we had access to the financial models and sales data (**Figure 13** and Appendix Four).

**3.22** Proceeds from the three sales ranged from about £2.8 million to £31.3 million. We estimate that the proceeds of each sale is composed of (**Figure 14** on page 34):

- **changes in the valuation of the project's future cash flow since the project started** including changes in cash flows, movements in the secondary equity market, and the elapse of time between financial close and the sales. These account for between £0.1 million and £17.5 million of the proceeds;<sup>18</sup>
- **the original equity investment** ranging from £1.3 million to £7.2 million, giving annualised exit rates of return ranging from 30 per cent to 39 per cent (Appendix Four);
- **the primary investors' risks** including additional payments for project development and credit risk in construction contractors. These amounted to between £0.6 million and £3.2 million; and
- **an unexplained residual element** – after subtracting estimated allowances for each of the component parts above from the total proceeds, there is a residual difference of between £0.3 million and up to £3.4 million.

16 Some of the cash flows purchased might also have improved, as indicated by Figure 8, which would imply a higher discount rate possibly closer to 7 per cent.

17 The rating agency Standard & Poors (2006) warned: "the infrastructure sector is in danger of suffering from the dual curse of overvaluation and excessive leverage – the classic symptoms of an asset bubble similar to the dotcom era of the last decade".

18 The calculation is shown in Appendix Four at [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012)

**Figure 13**

The three equity sales analysed by the National Audit Office

Project	Queen Alexandra Hospital, Portsmouth	Bradford Schools, phase one	Derbyshire Mental Health
1 Capital cost <sup>1</sup>	£360 million	£95 million	£36 million
2 Service charges <sup>2</sup>	£560 million	£137 million	£41.6 million
3 Months in procurement <sup>3</sup>	52 from August 2001	26 from October 2004	43 from February 2004
4 Equity return at date of contract	15 per cent	13.7 per cent	14.25 per cent
5 Date of equity sale and proceeds	June 2010 sale of 50 per cent for £31.3 million	November 2010 sale of 25 per cent of Bradford (£4.7 million to £5.6 million) and 50 per cent of Derbyshire (£2.8 million to £3.3 million) <sup>4</sup>	
Short description	Combined three pre-existing hospitals at one site. Thirty-five year provision of estate services, portering, housekeeping, linen and laundry, catering, retail, and car parking.	By 2008, built three fully operational new schools. Twenty-five year provision of facilities management, cleaning, ground maintenance caretaking, and security.	Adult high and older persons' high dependency and dementia health units, a resource centre and a clinical services building.

**NOTES**

- 1 Row one shows the construction costs and funding during the construction phase.
- 2 Row two shows the present value of the aggregate service charges over the life of the contract (finance charges and operations and maintenance).
- 3 Months in procurement are taken from the date of the original notice in the Official Journal of the European Union
- 4 Equity interests in these two projects were included in a portfolio that was sold. The seller provided information to the National Audit Office that allowed us to estimate ranges for sale proceeds relating to the two projects.
- 5 As the scope of this report is specifically limited to the role of PFI equity, it does not deal with all the issues that would be relevant to assessing the value for money of each project. For example, Portsmouth Hospitals NHS Trust encountered budgetary difficulties, which in March 2011 contributed to its decision to close 100 of the Queen Alexandra Hospital's 1,200 beds.

Source: National Audit Office summary

**3.23** This analysis suggests that most of the primary investors' returns are explainable. Investors told us that the difference between rates of return demanded by primary investors at contract award and the lower rates of return in the secondary market could be explained by the primary investors' main risks. These are:

- costs associated with unsuccessful bids for other projects;
- the risk associated with the construction contractor defaulting; and
- the increased price of funds for projects in the tender and construction phases.<sup>19</sup>

<sup>19</sup> One overseas investment fund told us that, because of protracted and uncertain public sector procurement arrangements, its funding costs are 1 per cent higher when bidding in the UK.

**Figure 14**Our estimates of the component parts of the investors returns<sup>1</sup>

	Queen Alexandra Hospital Portsmouth	Bradford Schools		Derbyshire Mental Health	
	(£m)	(£m)	(£m)	(£m)	(£m)
<b>Sale price</b>	31.3	4.7 <sup>2</sup>	5.6 <sup>2</sup>	2.8 <sup>2</sup>	3.3 <sup>2</sup>
<i>Less</i>					
<b>Estimated increases in the value of the project since it started<sup>3</sup></b>	(17.5)	(1.5)	(2.4)	(0.1)	(0.7)
<b>The primary investors' risks<sup>4</sup></b>					
Contractor default (estimate)	(2.3)	(0.1)	(0.1)	(0.1)	(0.1)
Cost of failed bids (estimate)	(0.9)	(0.5)	(0.5)	(0.9)	(0.9)
<b>The primary investors' original investment</b>	<u>(7.2)</u>	<u>(1.9)</u>	<u>(1.9)</u>	<u>(1.3)</u>	<u>(1.3)</u>
<b>Unexplained residual amounts</b> (rounded present value at the point of financial close)	3.4	0.6	0.6	0.3	0.3
Unexplained amounts within 2011 unitary charge (rounded 2011 prices) and totalling £1.15 million	0.9	0.2		0.05	
Portion of unexplained annual unitary charge	2%	2.2%		1.5%	

**NOTES**

- Detailed assumptions are set out in a technical paper (Appendix Four at [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012)).
- Equity interests in Bradford schools and the Derbyshire Mental Health project were included in a portfolio that was sold. The seller provided information to the National Audit Office that allowed us to estimate ranges for sale proceeds relating to the two projects.
- Includes accrued profit at the secondary investor's rate of return – i.e. those relating to operational risks.
- Includes only those risks that primary investors are exposed to, but secondary investors are not.

Source: National Audit Office analysis

**3.24** However, after allowing for changes since the project started and the primary investors' main risks, we found residual differences between our estimated values and bid prices. We used conservative estimates to value the risks, checked the results using an alternative method, and used sensitivity analysis, but could not eliminate these residual differences. In our main estimates, these residual amounts had present values (at financial close) ranging from £0.3 million to £3.4 million (Figure 14).

**3.25** We cannot, therefore, discount the possibility that market and other inefficiencies in the initial pricing of equity add to the investors' profit. This possible pricing inefficiency is equivalent to an increase of 1.5 to 2.2 per cent in the service charges and annual payments to the investors of these three projects, in total, of £1.15 million in 2011 prices.

**3.26** These illustrative findings highlight how aspects of investors' returns may be worthy of further consideration. The results are not conclusions on the value for money of the three projects and should not be taken to indicate experience across the whole population of PFI project sales.

### **Alternatives to the standard PFI model for remunerating equity investors**

**3.27** In a small number of PFI deals there have been mechanisms for the public sector to receive some rebate if, at certain points in the contract period, investor returns are higher than a defined amount. In other projects, the public sector has taken a shareholding allowing it to share in any upsides, but also downsides, which may accrue to equity investors. Under a Scottish model, investors are only paid interest on a shareholder loan, and any surplus is rebated to the public sector. Separate contracts for construction and operations, each priced according to their risks, is a further alternative.

**3.28** The Treasury is currently considering alternative approaches to the balance of risk and reward for equity investors as part of the Government's call for evidence on the reform of PFI launched in December 2011.

# Appendix One

## Methodology

This report examined whether the contracting structures in the Government's Private Finance Initiatives (PFI) use equity investment effectively to deliver value for money. The main elements of our fieldwork, between July and November 2011, were:

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### Method

### Purpose

#### Literature review

We reviewed previous NAO reports and carried out a review of academic literature and publications of industry/market data.

To assess whether PFI investors bear project risk. Separately, we identified the incidence of loss-making projects.

#### Financial accounts

We extracted financial data from 80 sets of project company accounts.

To identify amounts and dates of investment, and to analyse the rate of return on equity obtained at the date of sale (sales are listed in Appendix Three, available on our website [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012))

#### Interviews and web survey

We carried out 19 interviews with fund managers and key participants in five projects.

To confirm in some depth how the participants in PFI contracts currently view the allocation and management of risk.

We then sampled a further 34 operational PFI contracts, and conducted a web-survey. Key participants in each of the projects were the Authority, a director of the project company, a senior lender, and a services provider. The 34 contracts generally adhered to HM Treasury's code, the Standardisation of PFI Contracts versions Three or Four.

#### Web-survey questions included:

probability and impact of project risks materialising, such as life-cycle risk; investment management arrangements; and satisfaction with service delivery.

Appendix Two summarises findings and key investors and is available on our website [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012)

#### Semi-structured interview topics, included:

expectations of project risks materialising; contract management arrangements; adding value to PFI projects; satisfaction with service delivery and performance; and expected returns.

**Workshop** with technical advisers to review our descriptive analysis of perceptions of project risk in PFI contracts.

#### Workshop topics included:

probability of risks materialising in PFI projects; and real versus perceived impact of risks materialising.

#### Financial models

We explored selected financial models provided by authorities for the 34 PFI contracts in our sample.

To assess the market value, time value and performance value of investments and to conduct sensitivity analysis on the influence of lenders' requirements (see Appendix Four, available on our website [www.nao.org.uk/pfi-private-equity-2012](http://www.nao.org.uk/pfi-private-equity-2012))

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