



Does the private sector receive an excessive return from investments in health care infrastructure projects? Evidence from the UK

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ABSTRACT

This paper is concerned with the cost-efficiency of Private Finance Initiatives (PFIs) in the delivery of hospital facilities in the UK. We outline a methodology for identifying the “fair” return on equity, based on the Weighted Average Cost of Capital (WACC) of each investor. We apply this method to assess the expected returns on a sample of 77 contracts signed between 1997 and 2011 by health care provider organisations in the UK. We show that expected returns are in general in excess of the WACC benchmarks. The findings highlight significant problems in current procurement practices and the methodologies by which bids are assessed. To minimise the financial impact of hospital investments on health care systems, a regulatory regime must ensure that expected returns are set at the “fair” rate.

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1. Introduction

This article is concerned with the use of private finance in health care capital investments. Where capital financing methods are efficient, the impact of investment on the revenue budget is minimised and the budget available for additional capital expenditure is maximised. Conversely, where financing methods are inefficient, more resources must move from revenue to capital, and the opportunity for additional investment is curtailed. In most countries, funds can be borrowed by governments from the capital markets at a lower interest rate than is available to the private sector in those countries. Consequently, where a health care system's capital assets are owned by the state,

the cheapest and most appropriate source of funds will often be government borrowing [1].

However, the use of private finance may allow health care systems that are constrained by an absence of public capital to undertake investments that would otherwise never materialise, or materialise only with a substantial delay [2]. In addition, involving private finance in capital projects may offer efficiency benefits – for example, in construction and operations – that may sometimes offset the higher financial cost of this form of financing [3].

Since 1993, the Private Finance Initiative (PFI) has been the dominant form of large-scale buildings procurement used by National Health Service (NHS) organisations in the United Kingdom [1]. As of April 2012, 123 PFI projects for new hospital facilities had been agreed between NHS organisations and private sector ‘special purpose vehicles’ (SPVs),³ representing private sector investment of £16

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³ As clarified in Section 3, the typical structure of a PFI hospital involves the creation of a new company, a Special Purpose Vehicle (SPV) by one or more shareholders (project sponsors). The SPV designs, builds, operate

billion (in 2012 prices), and a projected long-term nominal cost to the NHS of £70.5 billion [4]. Five additional hospital PFI schemes were being procured or prepared for tender as of April 2012, with a combined capital investment value estimated at £1 billion [5].

Most investments have been highly geared, with debt providing circa 90% of capital drawn down, against 10% equity [1]. This debt-heavy capital structure is widely believed to minimise the Weighted Average Cost of Capital (WACC)⁴ for the SPVs, thereby reducing the cost to the public sector [6]. However, changes in financial sector regulation and concerns about the quality of assets held by banks have restricted long-term lending in the UK, as elsewhere. New Basel III stability ratios, in particular, make PFI loans very expensive in terms of banks' risk-weighted capital adequacy requirements. In response, most banks are reducing, rather than expanding, their infrastructure assets. Even where funds are available, loan margins have tripled relative to pre-crisis norms [3]. In this context, the merit of such a high level of gearing is no longer clear.

In December 2012, the UK government published the outcome of a year-long inquiry into the PFI – resulting in the introduction of a slightly amended model, called PF2. The UK government's policy is to rely less on commercial banks in future PF2 projects and attracting funds from alternative financial institutions, primarily pension funds and insurance companies [3]. However, appetite for infrastructure assets – which require dedicated teams capable of assessing and monitoring credit risk – is limited among such institutions, due to information asymmetry, scarce data about project performance and the lack of internal specialist expertise [7]. The implication of the UK government's desire to shift from a bank lending model to one that engages with a broader range of financial institutions is that project risk must, in some way, be re-allocated from creditors to other contractual parties. This change in the model is likely to have a major impact on PFI/PPP policy across the EU [8], in which PFIs with an investment value of €185 billion have been signed since 2003 [9].

One option for de-risking private finance contracts is for governments to provide guarantees to debt-holders. However, the provision of guarantees to creditors is likely to distort the incentive structure associated with such transactions, and increase the state's exposure to risk [10]. Reflecting this, the review favours a model in which the contribution of equity is increased, relative to debt [3]. The providers of equity are the owners of the SPV established to develop the project and earn a revenue stream relating to it. They have a lower priority for receipts of cash flows than the debt-holders and bear greater risk. Therefore, a greater proportion of equity in the capital structure of the project provides a “buffer” for debt-holders and reduces overall risk, which may provide financial institutions with

the comfort they require to invest. The new policy is to encourage a capital structure of circa 75% debt to 25% equity [3]. However, if the market responds as the government expects, and equity begins to play a more important role in the capital structure of PFIs, it is important to understand how efficiently equity has been priced within the PFI programme to date.

This is our focus here. Initially, we propose an analytical framework grounded in corporate finance literature for estimating the WACC of private sector equity investors. We use this as a benchmark against which to evaluate the expected rates of return on investments in SPV equity. The framework is used to measure and evaluate returns on 77 PFI projects (out of the total population of 123) commissioned by NHS organisations in England and Scotland between 1997 and 2010 [4]. The results confirm the existence of returns that are in each case significantly in excess of the sponsors' WACC. The average difference between investor WACCs and expected rates of return is 9.5%, indicating a high degree of rent extraction by investors. The results call for a substantial revision of the methodologies applied by the public sector in terms of the procurement of PFI contracts and the appraisal of private sector bids.

The rest of this paper is organised as follows. After a brief summary of the theoretical and empirical literature on equity returns in PFI contracts (Section 2), we outline in Section 3 the main institutional features of PFI transactions and the extent to which project risks are borne by equity investors. Section 4 presents the theoretical framework underpinning the study and Section 5 outlines the methodology we have developed to derive the WACCs for the 77 projects in the sample. In Section 6, we discuss the principal findings of the study, and in Section 7 we identify some implications for policy-makers in health care systems.

2. The equity return in PFI contracts: theory and empirical evidence

Identifying the return to equity has been an important focus of both academic research and public audit in the UK [11–16]. The findings in these studies are consistent with data reported in the financial statements of large corporate investors (e.g. [17,18,38]) and large infrastructure funds (e.g. [19]) in identifying a normal rate of return within the range 13–18%.⁵ In addition, a succession of reports have compared the rate of return on equity expected by investors at the point of contracts being signed against that expected after bank loans have been refinanced or equity assets have been sold to secondary market investors.⁶

the facility under a concession agreement and is responsible for collecting financing from banks or on the capital markets (DBFO, design-build-finance and operate scheme). The financing is based on a *project finance* technique, implying that bank creditors' have the possibility to be repaid only by means of the cash flows of the PFI hospital and without any recourse on the sponsors' balance sheets. See Gatti [66].

⁴ See Box 1 for the WACC definition.

⁵ Our review of the literature here relates only to the health sector. Detailed evaluative studies have been carried out in relation to the roads sector, for example Shaoul et al. [63] and Acerete et al. [53,54].

⁶ Refinancing frequently takes place after the hospital or health care facility has passed through the construction phase without any major deviation from the expected budgeted capital expenditures. In these cases, project sponsors can seek to lower their interest rate, reduce required cover ratios (allowing cash to be taken out of the project and distributed to shareholders) and/or increase the term of the debt, thereby reducing the amount of debt capital to be repaid annually.

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