PPPs: THE PASSAGE OF TIME PERMITS A SOBER REFLECTION

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This paper argues that evaluations of public–private partnerships thus far point to contradictory results regarding their effectiveness and value-for-money. Despite continuing political popularity, greater care is needed to strengthen future evaluations and conduct such assessments away from the policy cheerleaders.

Keywords: International evidence, long-term infrastructure contracts, LTICs, PFI, procurement, public–private partnerships, PPPs, value-for-money, VfM.

Introduction

Public–private partnerships (PPPs) have enjoyed a global resurgence and have become icons of modern public administration. Using a sober reflection philosophy, this paper looks at the PPP phenomenon and at the global experience of one type of partnership arrangement – that of long-term infrastructure contracts. For this member of the PPP family, we acknowledge a range of stakeholder interest groups and review some of the global evaluation experience to date. In particular, we examine the degree to which PPPs appear to have met the policy promises made when initiating them in terms of value-for-money (VfM).

The PPP phenomenon

PPPs are loosely defined as co-operative institutional arrangements between public and private sector actors, but few people agree on what a PPP actually is. So what are PPPs, and if governments have long had a relationship with business, what is really so different about today's version of PPP? To answer these questions requires an understanding of the PPP as a phenomenon rather than a single technique. In fact, the PPP phenomenon is a set of governance tools as well as a set of language games, and both have long historical pedigrees.

History indicates that there has always been some degree of public sector and private sector co-operation (Wettenhall, 2003, 2005). History also brings with it both the good news of economic growth as well as the bad. On the one hand, it is true, for example, that privateer shipping underpinned the historical growth and dominance of the British global economic empire, and public–private co-operation saw the modern dream of the Channel Tunnel achieved. On the other hand, however, privateer shipping was a 'feeble and corrupt system' where leading officials promoted partnership ventures with a 'motive of plunder', and the fragile financial position of the Channel Tunnel has now left citizens, governments and private investors all with huge uncertainties. Arguments over efficiency, service quality and accountability in the two sectors have certainly been 'well rehearsed'[1] over centuries.

Hodge and Greve (2007) note five different families of such partnerships:

1. Institutional co-operation for joint production and risk sharing (such as the Netherlands Port Authority).
2. Long-term infrastructure contracts (LTICs), which emphasise tight specification of outputs in long-term legal contracts (as exemplified in UK Private Finance Initiative projects).
3. Public policy networks (in which loose stakeholder relationships are emphasised).
4. Civil society and community development.
5. Urban renewal and downtown economic development (and where in the USA a portfolio of local economic development and urban re-growth measures are pursued).

These five PPP families therefore cover a wide array of governance types and are more than

just the Private Finance Initiative (PFI) experience of the UK or the urban renewal practices of the USA.[2]

The alternative view of PPPs is as a set of language games. There are certainly, as Linder (1999) puts it, 'multiple grammars' to the meaning of the phenomenon. A number of governments have tried to avoid using the term 'privatisation' or 'contracting out' in favour of speaking about 'partnerships'. That may be a part of a general trend within public management of needing to renew the reform buzzwords from time to time, or the practice of advancing the same policy, but under a different and more catchy name. Viewed from this perspective, researchers should be careful how they approach the empirical analysis of PPPs. There is no doubt that PPPs have nowadays become a favourite expression when describing new institutional and contractual arrangements for governments – whatever these amount to.

There is certainly a huge amount of money at stake in today's PPPs. Blanc-Brude *et al.* (2007), for instance, report that for LTIC-type PPPs alone, the past 15 years in Europe has seen more than a thousand contracts at a capital value of almost €200 billion. Mainly of macroeconomic and systemic importance in the UK (with 76.2% of projects), Spain (at 8.6%) and Portugal (at 2.3%), these projects have involved deals totalling between €15,746 million and €28,768 million each year since 2000. Moreover, they are now also spreading from transport into other fields.

The challenge of evaluating LTIC-type PPPs

If we were to mount an evaluation of our experience to date with any member of the PPP family, there would be many pitfalls to watch out for. The single set of LTIC-type PPPs is itself a large group. Campbell (2001), for instance, suggested that 'a PPP project generally involves the design, construction, financing and maintenance (and in some cases operation) of public infrastructure or a public facility by the private sector under a long term contract'. But there are clearly many different possible PPP definitions across different public–private mixes.[3] Conceptually, there is a continuum of options ranging from a public emphasis at one extreme to a private emphasis at the other.[4] These arrangements include BOOT (build-own-operate-transfer), as well as DBFO (design-build-finance-operate), and a host of other acronyms. This set of LTIC-type PPPs represents a wide range of contractual types depending on the degree to which risks are borne by the public or private sides.

Indeed, some eight combinations of public–private mix are possible for PPPs when thinking simply about the dimensions of control, funding and ownership (Zarco-Jasso, 2005). In the European Union, the Commission terms infrastructure PPPs 'Institutionalized PPPs', but the term is still not legally defined in community law. Instead, the definition of a PPP continues to be interpreted in the light of community law on public procurement and concessions.[5]

Second, in contrast to earlier evaluations of privatisation there have been no meta-analyses or statistical reviews of multiple quantitative PPP performance results to date.[6] Notwithstanding this, there have been several assessments that have gone past polarised partnership commentaries limited to either advocacy or criticism. One recent attempt was Hodge and Greve (2007), but many others have also been published, covering either more general ground[7] or focused on particular PPP concerns.[8]

Third, the PPP discourse and evaluation space is filled with different interest groups. Advocates include groups such as consultants, merchant bankers, legal firms and construction companies. But governments have also been amongst the most ardent advocates, through ministers and their compliant treasury and finance departments. Research, however, has shown that high expectations about the formation of PPPs have often resulted in inadequate ways of interaction between public sector and private organisations (Koppenjan, 2005). Critics have appeared across disciplines and traditional ideological borders. Those involved directly in the financial transactions, not surprisingly, often speak highly of them.[9] There is now a need carefully to review the international experience with PPPs.

Fourth, the complexity of evaluating infrastructure arrangements is compounded by the adoption of either public or private up-front finance, and by the potential application across many policy areas such as transport, water, prisons, education, social and emergency services. We can marshal evidence from three sources when discerning partnership success: the policy rhetoric, the legal contracts, or the historical outcomes experience (Hodge, 2004). These vary, from the weakest evidence of success at the policy rhetoric end to the strongest at the historical outcomes end. Looking at the policy and evaluation rhetoric, there has been much 'assessment', including everything from salesmanship on the one hand, to stinging criticism on the other.[10] But how have LTIC-type PPPs performed according to the historical evidence to date?

Of central relevance to an assessment are the objectives of PPP delivery by governments and broader policy promises being made to citizens. Under John Major's government, the initial rationale was to get around formal public sector debt levels. Private financing promised a way to provide infrastructure without increasing the public sector borrowing requirement (PSBR). This was followed by the promise that PPPs would reduce pressure on public sector budgets. Neither the availability of off-budget financing nor avoiding accountability for capital funding are particularly valid criteria on which to evaluate PPPs. A mechanism through which governments may turn a large, one-off capital expenditure into a series of smaller, annualised expenditures has simply been provided. But like any domestic credit card or mortgage arrangement, this does not reduce pressure on the family budget, because all debts must be repaid in the end.[11] The third promise of PPPs was that this delivery mechanism provides better value-for-money for taxpayers. This is a policy promise worthy of examination. Added to these three promises were seven more – some explicit, such as better accountability, better on-time and on-budget delivery, and greater innovation – and some implicit, such as encouraging a more innovative public sector, improved business confidence, and boosted sales of professional PPP services abroad. There have been many separate objectives for PPPs, and these have altered over time and remain slippery.

What does the more serious evidence on the veracity of these claims say? Table 1 summarises a range of evaluation examples from the international literature. It is drawn from the past decade and reflects only some of the pieces going to make

Table 1: Selected PPP evaluations over the past decade

Study	Sample/Cases	Country	Type of publication	Better VfM?	Comments/Conclusions
Bloomfield *et al.* (1998)	A Massachusetts correctional facility	United States	Case study	No	• 7.4% more expensive through P3 lease purchasing • 'inflated sales pitches' camouflaged real costs and risks to the public, and the project was 'wasteful and risky'
Arthur Andersen & LSE Enterprise (2000)	29 business cases analysed	United Kingdom	Initial evaluation	Yes	• 17% cost savings estimated against the PSC • risk transfer accounted for 61% of forecast savings
Savas (2000, p. 240)	General observations	United States	Literature review	Yes	• '[the private sector through PPPs] build more quickly and more cost effectively than governments usually can . . .'
National Audit Office (2000)	7 business cases from NAO (2000)	United Kingdom	Business cases	Yes	• 10–20% cost savings estimated
Walker and Walker (2000, p. 204)	General observations of Australian cases	Australia	Literature review	–	• PPP infrastructure financing deals seen as 'misleading accounting trickery' with eroded accountability to Parliament and the public • private project consortium real rates of return were up to 10 times those returns expected for the public
Teisman and Klijn (2001)	General observations	4 EU countries	Review of strengths and weaknesses	–	• PPPs have strengths and weaknesses
DoT (2002)	250 London Underground projects (1997–2000)	United Kingdom	Unknown	–	• Cost over-runs averaging 20% were found
Mott Macdonald (2002)	39 traditional projects and 11 PFI projects selected	United Kingdom	Multiple cases reviewed	Yes	• Traditional 'public' infrastructure provision arrangements were on-time and on-budget 30% and 27% of the time, but PFI-type partnerships were on-time and on-budget 76% and 78% of the time, respectively
Pollock *et al.* (2002)	3 NHS hospitals and 8 trusts	United Kingdom	Review and re-analysis	No	• The PFI justification is a 'sleight of hand'
Pollitt (2002)	10 major PFI cases	United Kingdom	Review of National Audit Office cases	Yes	• the best deal was probably obtained in every case, and good value for money was probably achieved in 8 of the 10 cases
Audit Commission (2003)	10 traditional and 8 PFI schools were compared	Scotland	Audit report	No	• 'We found no evidence that PFI projects delivered schools more quickly than projects funded in more conventional ways' • 'The public sector comparator has lost the confidence of many people . . .'
Greve (2003)	Case study of Farum Municipality	Denmark	Case analysis	No	• PPP assessed as 'the most spectacular scandal in the history of Danish Public Administration' • It resulted in raised taxes for the citizens of Farum, higher debt for citizens and a former mayor currently on trial in the courts
Fitzgerald (2004)	8 PPP cases from Victoria	Australia	Report to government	Uncertain	• The superiority of the economic partnership mode over traditional delivery mechanisms was dependent on the discount rate adopted in the analysis • Opposite conclusions were reached when using an 8.65% discount rate at one extreme (where the PPP mechanism was 9% cheaper than traditional delivery) compared to an evaluation adopting a 5.7% discount rate (where the PPP mechanism was 6% more expensive)
Edwards *et al.* (2004)	8 cases from roads and 13 hospital case studies	United Kingdom	Case reviews and interviews	No	• Contracts reviewed 3 years in • 'PFI is an expensive way of financing and delivering public services . . .' • 'the chief beneficiaries are the providers of finance and some of . . . the private sector service providers . . .'
Ghobadian *et al.* (2004b, p. 300)	General observations	United Kingdom	Literature review	–	• 'we have no firm evidence that the current PFIs would deliver on their long-term objectives . . .'
Grimsey and Lewis (2004, pp. 81, 245)	Selected global observations across several sectors	Several countries	Literature review	Yes	• 'preliminary evidence does seem to indicate strongly that PPPs offer one solution to the public procurement problem . . .' • 'there is not one "model" of a PPP . . .'
Pollitt (2005)	General observations of UK cases plus 5 cases	United Kingdom	Literature review	Yes	• 'it seems difficult to avoid a positive overall assessment'
Shaoul (2005)	General observations of UK cases	United Kingdom	Literature review	No	• PFI has turned out to be very expensive with a lack of accountability • Suspects that PFI policies 'enrich the few at the expense of the majority and for which no democratic mandate can be secured'
Boardman *et al.* (2005, p. 186)	5 North America cases covering roads, waste management and water desalination	Canada and United States	Case reviews	No	• unless contracts both compensate the private sector for risks and then ensure that they actually bear it, 'P3s will not improve allocative efficiency'

Table 1: *Continued*

Study	Sample/Cases	Country	Type of publication	Better VfM?	Comments/Conclusions
Hodge (2005, p. 327)	General observations of UK cases plus 3 cases	Australia	Literature review	Uncertain	• There have been no rigorous and transparent evaluations of all Australian PPPs • The few available assessments suggest mixed performance to date • Government has moved away from its traditional stewardship role to a louder policy advocacy role, and now faces multiple conflicts of interest (as advocate, developer, steward, elected representative, regulator, contract signatory and planner)
Auditor-General of New South Wales (2006)	Construction of 19 schools in New South Wales	Australia	Audit report	Yes	• Between 7% and 23% cheaper • Auditor saw as 'persuasive' the business case for these two PFI contracts
Pollock *et al.* (2007)	Re-analysis of Mott Macdonald and other reports	United Kingdom	Academic paper	No	• 'there is no evidence to support the Treasury cost and time overrun claims of improved efficiency in PFI' . . . [estimates being quoted are] 'not evidence based but biased to favor PFI . . .' • only one study compares PFI procurement performance, and 'all claims based on [this] are misleading'
Allen Consulting Group (2007)	Sample of 21 PPPs and 33 traditional projects	Australia	Consulting report	Yes	• PPPs reported as being an 11% cheaper alternative to traditional projects • Research project funded by Australia's infrastructure suppliers
Blanc-Brude *et al.* (2006)	227 new road sections across 15 EU countries, of which 65 were PPPs	European Union	31 regression analyses	Not tested	• *Ex-ante* construction costs of PPPs were 24% higher than traditional procurement • This is a similar magnitude to the traditional cost over-runs • Whether PPPs deliver lower overall life-cycle costs remains unknown
Leviakangas (2007, p. 211)	A Finnish toll-road case study	Finland	Financial models	No	• The hypothesis that private finance enabled welfare gains to be achieved was not confirmed

up the overall LTIC-type PPP evaluation picture, rather than anything more statistically careful.[12] We trust that it is more or less representative. It includes reviews varying from general philosophical guidance to detailed project analyses, and statistical reviews (e.g. Blanc-Brude *et al.*, 2006). Focusing mainly on the third of these 10 objectives, that PPPs deliver better VfM, several observations are possible.

A sobering PPP VfM evaluation

Statistically solid evidence on LTIC-type PPPs is firstly weak as well as being controversial. This is in stark contrast to the often repeated assurance of PPP advocates. Virtually no analyses have employed any control groups in their 'before and after' time series or cross-sectional comparisons. From a strict statistical perspective, therefore, results from these reports should be treated with considerable caution.[13]

Second, the reality is that the counterfactual of the 'traditional procurement' is both horribly vague and also largely unquantified. As Ball *et al.* (2007) remind us, traditional projects may also adopt incentives such as fines or payments levied for project delays, so that the on-time delivery issue needs empirical data and rigorous analysis, not more rhetoric and language games.[14]

Looking thirdly at the type of cost measurement taken, there is further reason for concern. Nearly all studies are business cases in which estimates are made before the contract is signed or at an early stage in the project life. Few studies exist where actual empirical measurements into the contract life are being made; the exceptions here include several works by Shaoul as well as Allen Consulting Group (2007), Blanc-Brude *et al.* (2006), Fitzgerald (2004) and Leviakangas (2007).

Fourth, an observation is that there appear to be two separate academic areas of PPP literature: the political science/public policy/public administration literature (e.g. Hodge and Greve, 2007) and the economics/engineering literature (e.g. Grimsey and Lewis, 2004). This has not been generally acknowledged thus far, and few if any reviews to date seem to have covered both literatures well.[15] Additionally, there are numerous audit, government and consulting reports (Deloitte, 2006; HM Treasury, 2008; PricewaterhouseCoopers, 2005).

Fifth, for the VfM results themselves, there is a wide array of findings. The early UK Treasury Task Force reports of Arthur Andersen and LSE Enterprise (2000) and the National Audit Office (2000) reported cost savings of 17% for 29 business cases and 10–20% from seven specific PFI projects, respectively. Savings were due mainly to the calculus of risk transfers assumed from the public to the private sector. Pollitt (2002) looked at a sample of 10 major PFI case evaluations undertaken by the UK National Audit Office (NAO), and suggested the best deal was probably obtained in every case, and good value for money was probably achieved in eight of the 10 cases. The more recent assessment by Pollitt (2005) reported not only the popularity of PFI, with the UK government typically raising some 15–20% of its capital budget each year through this mechanism,[16] but also its empirical success. Looking at five case studies in particular, he concluded that despite the lengthy and costly bidding process amongst few bidders, and despite observing government's extreme positive stance in the face of

high-profile PFI project problems, compared to the previous government procurement system 'it seems difficult to avoid a positive overall assessment'. Thus, relative to the counterfactual of what might have happened under conventional public procurement, Pollitt (2005) argues that projects under PFI 'are [now] delivered on time and to budget a significantly higher percentage of the time', with construction risks 'generally transferred successfully' and with 'considerable design innovation'. Also supporting this conclusion were Australian analyses such as the Audit Office of New South Wales, who saw as 'persuasive' the business cases for two PFI contracts to build 19 schools suggesting 7–23% savings, and the Allen Consulting Group (2007) who, in a project funded by Australia's infrastructure suppliers, reported PPPs as being an 11% cheaper alternative to traditional projects based on a sample of 54 projects. Strong support has also come from Mott Macdonald (2002) and the National Audit Office (2003) with both reporting PPPs as being delivered on time far more often than traditional infrastructure provision arrangements. They reported that whereas traditional 'public' infrastructure provision arrangements are on-time and on-budget 30% and 27% of the time, PFI-type partnerships are on-time and on-budget 76% and 78% of the time, respectively. These particular on-time and on-budget findings are impressive and often repeated throughout international PPP business and policy networks. Also supporting the PPP case has been the reality that traditional public sector infrastructure project delivery has hardly been a model of efficiency. It has been one characterised by 'a history of completing investment projects over budget and late' according to a study by the Department of Transport (2002), in which some 250 London Underground projects between 1997 and 2000 experienced cost over-runs averaging 20%.

On the other side of the evaluation picture has been a raft of studies saying just the opposite. An early US study by Bloomfield *et al.* (1998) saw PPP lease purchasing financing arrangements in the United States as 'wasteful and risky'; whilst Walker and Walker (2000) in Australia characterised PPPs as 'misleading accounting trickery'. More damning, though, has been the evidence of Ball *et al.* (2007) and Shaoul (2005). Shaoul presents a litany of failed PFI project examples, a VfM appraisal methodology biased in favour of policy expansion, pitiful availability of information needed for project evaluation and scrutiny, and projects in which the VfM case rested almost entirely on risk transfer but for which, curiously, the amount of risk transferred was almost exactly what was needed to tip the balance in favour of undertaking the PFI mechanism. Added to this situation, itself described by the UK Public Accounts Committee of Parliament as clearly 'manipulation' of the PSC process, were the observations that in hospitals and schools 'the PFI tail wags the planning dog' with projects changed to make them 'more PFI-able', highly profitable investments being engineered for private companies with 'a post tax return on shareholders' funds of 86 per cent', several refinancing scandals, conspicuously unsuccessful IT projects and risk transfer arrangements that in reality meant that risks had not been transferred to the private sector at all but taken by the public. Ball *et al.* (2007) note the flimsy risk analyses undertaken through in-house 'brainstorming' exercises and criticise these as 'almost entirely subjective' with little attempt to produce data based on historical experience or from benchmarked external sources. They cite the 2002 results of Scotland's Accounts Commission which found PFI financing costs to be 2.5% to 4% higher than usual and the fact that the Audit Commission 'found no evidence that PFI projects delivered schools more quickly than projects funded in more conventional ways' (Ball *et al.*, 2007, p. 307). Differences in financing costs are not taken into account in the comparison of PFI projects with the PSC comparator, and this was also seen as a major flaw in seeking to meet the public interest.[17] Added to this criticism has been the first peer review of the impressive on-time and on-budget figures reported by Mott Macdonald (2002). The review of Pollock *et al.* (2007) was unequivocal in its judgment of these earlier figures purporting superior on-time and on-budget performance, stating simply

> '. . . there is no evidence to support the Treasury cost and time overrun claims of improved efficiency in PFI . . . [estimates being quoted are] not evidence based but biased to favor PFI . . . [and] all claims based on [this] are misleading.'[18]

In between these two extremes was also a batch of informative studies. The assessment of eight Australian case studies by Fitzgerald (2004) concluded that evaluation results depended on the discount rate adopted in the assessment. Using an 8.65% discount rate for public sector comparator calculations led to the conclusion that a 9% cost saving was being achieved against traditional procurement methods, whereas the use of a lower 5.7% discount rate led to the opposite conclusion – that PPP arrangements had led to an estimated 6% greater cost and the likelihood that the A$2,700 million presently being repaid by the Victorian government was around A$350 million higher than it should be. Hodge (2005) observed that treasuries had gradually abdicated their traditional role of stewardship, along with 'free and fearless advice', in preference to a louder policy advocacy role. As a consequence, government now finds itself in the middle of multiple conflicts of interest, acting in the roles of policy advocate, economic developer, steward for public funds, elected representative for decision-making, regulator over the contract life, commercial signatory to the contract and planner. In addition to concerns over the value for money provided by PPPs, their governance seemed to have also become a significant issue for debate. Importantly, the reviews of Boardman *et al.* (2005) from North America and Hodge (2005) from Australia both concluded, independently, that *caveat emptor* is the most appropriate philosophy for governments to take as we move forward with LTIC-type PPPs. Added to these observations was the sophisticated and careful work of Blanc-Brude *et al.* (2006). This study covered some 227 new road sections across EU countries. The multiple regression analyses undertaken by this team revealed that PPPs were 24% more expensive than our expectations from traditional procurement, and that this was about the same magnitude of traditional project cost over-runs. The conclusion was that these PPP projects had looked dearer, but that this has most probably been due to the transfer of construction risks. This review, however, cautioned against making any further VfM conclusions, arguing that life-cycle costs over the longer term are still unknown.

It would be fair to observe that analysts have been somewhat apprehensive of the political promises made for LTIC-type PPPs using private finance. The veracity of the analytical studies underpinning evaluations assessing VfM for PPPs has been low, and the data being used for these studies have, to put it politely, been dirty. After a passage of time of almost two decades with modern-day PPPs, these are sobering observations.

Conclusions

PPPs represent several families of different public–private arrangements having a long historical pedigree. Today's debates over LTIC-type PPPs are characterised by language games and either loud criticism or gushing praise rather than evidence-based learning and synthesis. Evaluating the degree to which the many promises of LTIC-type PPPs are met, however, is not an easy task, given the breadth of different contract arrangements possible and the lack of rigour underpinning the international evidence base. The evidence to date is largely based on business case estimates, has an unclear counterfactual and suffers from a host of poor evaluative design features. Looking solely at one of 10 possible PPP objectives, that of improved VfM, the most optimistic reading of the evidence thus far is that it is mixed. There is a wide range of both supporting and opposing study results. Much remains to be done to improve the reliability of these findings.

1. See McIntosh *et al.* (1997).
2. See also Weihe (2005) for five alternative PPP families.
3. See Allan (1989), OECD (2008) or Savas (2000) for an overview.
4. The OECD (2008, p. 20), for instance, also places PPPs somewhere in the middle of the continuum between purely public and purely private. The five points along this continuum in order of increasing 'privateness' were complete government production and delivery, traditional public procurement, PPPs, concessions and, lastly, privatisation. Alternatively, Grimsey and Lewis (2004, p. 54) nominate some 21 alternative public/private business models in between either fully public provision or outright privatisation.
5. For more information on PPPs in the European Union, visit: http://ec.europa.eu/internal_market/publicprocurement/ppp_en.htm.
6. For earlier comprehensive evaluations of privatisation see, for instance, Boubakri and Cosset (1998), D'Souza and Megginson (1999), Hodge (2000) and Megginson *et al.* (1994) (statistical meta-analyses), or Cook and Kirkpatrick (2003), Martin and Parker (1997) and Parker (2004) (comprehensive review assessments of various types.)
7. See, for example, Berg *et al.* (2002), Bovaird (2004), Edwards *et al.* (2004), Ghobadian *et al.* (2004a), Grimsey and Lewis (2004), Osborne (2001), Perrot and Chatelus (2000), Pollitt (2005), Savas (2000), Shaoul (2005), Teisman and Klijn (2001), Vaillancourt Rosenau (2000) and Wettenhall (2003).
8. See Flinders (2005), Mott Macdonald (2002), National Audit Office (2000), Pollock *et al.* (2002) and Shaoul (2004) for examples of PPP reviews taking a more specific focus.
9. One project leader explained recently that because these new PPP arrangements enabled $1 billion to be spent on infrastructure in the coming year compared with only $130 million in previous 12-month periods, the new arrangements were therefore some eight times better than the old!
10. There have also been a limited number of assessments as to the legal outcomes of LTIC-type PPPs to date, such as Hodge (2004).
11. The one important exception to this is the case where a government enters an infrastructure deal requiring users or citizens to pay directly, such as tolls on a new road. Here, such an arrangement does reduce pressure on public sector budgets because government has essentially purchased the infrastructure through the commitment of funds from future (private) road users rather than using its own resources.
12. Notable absences from this table include, for example, the many audit reports for individual PFI projects in the UK and elsewhere.
13. Bingham and Felbinger (2002) rate the design of evaluation studies in four groups ranging from the weakest design, a simple before/after comparison (level 1), time series (level 2), comparison groups (level 3), to the strongest design (experimental-control group (level 4), where a random assignment occurs to treatment and control groups. Nearly all of the above PPP VfM studies are rated level 1 ('weak').
14. Pollock *et al.* (2007) note that public procurement practices have also improved significantly over time, but that this effect generally goes unacknowledged.
15. This table is principally drawn from the former domain, i.e. the political science/public policy/public administration literature.
16. The proportion of total infrastructure investments provided by private finance arrangements is unclear in developed countries, but estimates include Pollitt's figure above of 15–20% of the UK capital budget, an earlier figure of around 10–13% (HM Treasury, 2003, p. 128), and Pollitt's remark that this proportion is as high as 50% in sectors such as transport.
17. Ball *et al.* cited Audit Scotland, which 'also cast doubt on the Treasury methodology'. In addition, Ball *et al.* (2007, p. 303) criticised the use of a comparatively high discount rate, which further advantages the PFI solution.
18. Difficulties in extracting this research data from behind claims of 'commercial-in-confidence' amplify concerns that healthy peer review was not welcomed.

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