Policy Sciences (2023) 56:267–299
https://doi.org/10.1007/s11077-023-09504-7

RESEARCH ARTICLE

PPP performance evaluation: the social welfare goal, principal–agent theory and political economy

Mark A. Moore[1] · **Aidan R. Vining**[1]

Accepted: 11 April 2023 / Published online: 2 May 2023

Abstract
Governments use public–private partnerships (PPPs) as their agents to finance, design, build, maintain and operate their public infrastructure. Despite wide use, many PPPs have produced poor outcomes, including large transaction costs, renegotiations and bankruptcies. Society delegates the authority to build and operate public infrastructure to governments, which must then choose the means of provision. The alternatives are either government-financed design-build contracting, followed by government operation and maintenance—traditional procurement (TP)—or a PPP. We examine this choice using principal–agent and political economy theories. We evaluate the performance of PPPs versus TP against the normative goal of social welfare (economic efficiency). As well, in a review of the empirical literature through 2022, we find no convincing evidence that PPPs provide superior social welfare, nor evidence that many projects been evaluated on this basis. Governments' continued preference for PPPs in many cases is best explained by political goals and political economy theory. A review of recent empirical evidence supports the view that political economy variables contribute to PPP adoption.

Keywords Public–private partnerships · Principal-agent theory · Infrastructure procurement · Social welfare · Technical efficiency

Introduction

Public–private partnerships (PPPs) now deliver a wide range of goods and services, including infrastructure such as roads, bridges, water treatment plants, schools and hospitals. Governments use PPPs to finance, design, build, maintain and operate public physical infrastructure, usually through consortia of private sector firms and under long-term contracts. There is an extensive academic and promotional literature that claims to evaluate the performance of PPPs (Hodge & Greve, 2017; Petersen, 2019). However, in almost all cases, the literature employs evaluation criteria that are either too narrow, vague, cover too little of projects' lifecycles or are otherwise inappropriate for publicly funded projects. All PPPs are government projects that are ultimately funded by taxpayers. So, from

✉ Mark A. Moore
markm@sfu.ca

[1] Beedie School of Business, Simon Fraser University, Vancouver, Canada

a normative perspective, the appropriate evaluation criterion is whether the social benefits of a given project exceed the social costs, and then, whether the net social benefits of a PPP exceed those of a traditionally procured government project. Ideally, government and academic policy analysis should evaluate both questions by assessing costs and benefits over the entire project life cycle (Boardman et al., 2022; Jones et al., 1990; Vining & Boardman, 2014). When it is excessively costly to perform such a comprehensive cost–benefit analysis, at a minimum, a PPP should be the chosen procurement method only when analysis demonstrates that it will incur lower social costs (in a net present value sense) over the project's life cycle than would traditional government procurement (TP) (Boardman & Vining, 2012).

Prediction of the project costs of PPP versus TP and their effects on net social benefits requires a theory of the incentives and behavior of the decision-makers. Principal–agent (agency) theory is well suited to this task (Iossa & Martimort, 2015; Moore et al., 2017b; Parker et al., 2018; Solheim-Kile et al., 2019; Zwalf, 2021).[1] We argue that a PPP contract with private sector agents who are acting in their own self-interest (typically by maximizing their own profits) is unlikely to achieve better outcomes than would TP, even with a government principal that seeks to maximize net social benefits (i.e., social welfare). As we show in a review of both the systematic empirical evidence and case studies, the evidence to date is largely consistent with this prediction. However, it is more accurate to treat government actors as consisting of multiple agents (for voter–taxpayer principals), rather than as a single social welfare-maximizing principal. Government actors include both politicians and bureaucrats who operate at multiple organizational levels in roles or agencies with distinct incentives. At least some of the time, they can be expected to act in their own political, organizational or personal self-interest. Even without doing so consciously, they may also tend to conflate society's interests with their own. Consequently, we argue that governments' preference for PPPs in many jurisdictions can be at least partly explained by considering their self-interest. This is the political economy or public choice application of agency theory to the choice of public infrastructure procurement method (John, 2018).

At the pinnacle, democratic governments are comprised of an elected politician or a small group of elected politicians who form what we label as the government executive. We explain government executives' preferences for PPPs as at least partly flowing from political economy motivations—democratic government politicians seek to maximize votes in order to increase the probability of re-election (Downs, 1957). As we detail, PPPs have features that make them appealing to vote-maximizing politicians. A number of recent empirical studies test, at least implicitly, the political economy application of agency theory to PPP adoption. This literature is relatively recent and employs a variety of approaches, but our review of it supports the notion that political economy motives do matter in decisions to adopt PPPs to deliver public infrastructure.

This article reviews and builds on the rapidly growing literature on the performance of PPPs and critiques it with respect to its lack of use of the social welfare criterion. Specifically, we present the following five propositions. First, the appropriate normative criterion for governments in the choice between TP and PPP is social welfare maximization (economic efficiency), which almost no PPP performance evaluation has used. Second, principal–agent theory suggests that, when using the appropriate criterion, PPPs will underperform TP. Third, a review of the PPP performance evaluation literature up to 2022 largely

[1] The implicit principal-agent theory literature is much older. William Shakespeare addresses agency directly in *Measure for Measure*; *King Lear* and *Coriolanus* are also ruthlessly insightful.

supports this second argument. Fourth, a political economy application of agency theory helps explain governments' and private agents apparent preference for PPPs over TP. Fifth, there is some recent empirical and case study evidence that is consistent with the salience of political and bureaucratic motivations for at least some governments when choosing a public infrastructure procurement method.

Public–private partnerships versus traditional government procurement defined

We define a PPP as any long-term contract between a government and a consortium of private sector firms that bundles the provision of a range of project services and at least some project finance. Private sector firms usually form a special purpose vehicle (SPV), a distinct legal entity, to deliver a PPP project. An important feature of an SPV is that it limits the liability of the parent private sector firms. In the most iconic form of PPP, the selected consortium contracts to provide the design and construction (i.e., build), financing, operation and maintenance of new physical infrastructure; this is known as a DBFOM contract.

In principle, a DBFOM contract enables a government executive to shift some project risks to private sector agents. These could include the risk of construction cost overruns and delays, the risk that the project will not function as contracted and, sometimes, the risk that revenue from user fees or user demand will not meet projected levels. In exchange for (putatively) bearing these risks, the PPP consortium SPV is remunerated in one of the three ways. Either the SPV receives a periodic fee from the government (an availability payment, increasingly the most common form of pay) (OECD, 2015), 'shadow tolls' from the government that vary with usage (a usage payment), or actual tolls paid by users. SPVs usually receive payments over the contract life, typically for 20–35 years, but sometimes for up to 70 years. In principle, these payments cover the private sector firms' initial investment in the project (design, construction and borrowing costs) and operating and maintenance costs, plus a normal profit margin. At the end of the contract, asset ownership usually reverts to the public sector. Effectively, a PPP contract gives the public sector the ability to 'rent to own'—the public sector pays the SPV an annual fee for a specified period and then the asset reverts to public ownership at the end of that period.[2]

Alternatively, under traditional procurement (TP), a government finances the project by issuing government debt, but taxpayers ultimately fund the project by servicing that debt. The government still contracts out the design and construction of almost all projects to one or more private sector firms using either cost-plus or fixed-price contracts, or some combination. Government managers and employees operate and maintain the infrastructure. Thus, we argue that a fixed-price design-build contract is actually a form of TP, although many governments and government-sponsored PPP agencies label and market them as PPPs.[3]

[2] We do not address other arrangements where governments have entered into joint share ownership with private firms. These enterprises also involve complex incentive relationships and the potential for goal conflict (Vining et al., 2014, 2022).

[3] A reviewer notes that there are different versions of traditional procurement with differing principal-agent incentives. For tractability, we take the TP comparator to a PPP to be a fixed-price, design-build contract, rather than a design-bid-build contract.

Social welfare as the appropriate normative criterion

The appropriate normative goal in evaluating the choice of public infrastructure procurement method should be an increase in social welfare or, more precisely, a potential Pareto improvement (Boardman & Vining, 2012; Boardman et al., 2018). The potential change in social welfare arising from any given infrastructure project is equal to the sum of the changes in the net social benefits of all members of that society. Stripped of all jargon, this simply means that the public in aggregate—not only those involved in a project in some way—should benefit, after accounting for all losses (costs) and gains (benefits).

The categories of social welfare evaluation

We can categorize a project's effects on various individuals who bear its costs or enjoy its benefits. The major categories are the effects: on project users, i.e., the consumers of the project's services (change in consumer surplus, ΔCS); on producers or private sector firms involved in the project (change in producer surplus, ΔPS); on employees of those firms (change in employee surplus, ΔES); on government, measured by the change in tax revenues net of expenditures (change in government surplus, ΔGS) and on other parties not directly related to the project's transactions (change in external net benefits (externalities), ΔEX).[4] The aggregate change in social welfare (ΔSW) is thus:

$$\Delta SW = \Delta CS + \Delta PS + \Delta ES + \Delta GS + \Delta EX$$

As noted above, the social welfare framework aspires to assess impacts comprehensively, rather than only considering cost or benefit impacts on particular groups. In the same way, once a government has made an investment decision, the choice between procurement methods should be assessed on the basis of which alternative results in the largest appropriately discounted increase in social welfare (Rouhani et al., 2016).

PPP evaluation criteria in practice

Most published evaluations of PPP projects do not use the social welfare criterion. Most measure whether projects are 'on time and within budget' (Koppenjan et al., 2022; Verweij & van Meerkerk, 2021), provide greater 'value for money' (Hodge & Greve, 2009; Petersen, 2019; Soomro et al., 2016; Zhao et al., 2022) or are deemed 'successful' by the various individuals involved (Koppenjan et al., 2022). The 'on time and within budget' criterion certainly has political and disciplinary salience, as we discuss below. However, the use of this criterion almost always biases evaluations in favor of the PPP method, because analysts often ignore both the extensive extra preparation time required to prepare PPP contracts and the likely increases to cost projections before the contract is signed.

The 'value for money' criterion obviously also has salience for elected and opposition politicians and for executives at PPP public agencies. However, in contrast with a social

[4] This social welfare criterion accepts the existing distribution of income and ignores distributional issues. It is appropriate to multiply the change in government surplus by a factor greater than one, since raising revenue involves taxation which often creates deadweight efficiency losses (Boardman et al., 2020).

welfare analysis, it usually only includes costs borne by government and ignores other members of society. For example, if a PPP consortium replaces union labor with cheaper, non-unionized labor, then the costs of the project may decrease. If these cost savings are passed on in the PPP contract, then this will lower the government's costs, but there is an offsetting loss to employees. The outcome of a 'value for money' analysis also depends critically on the discount rate(s) used in the projected PPP alternative versus the 'public sector comparator' (PSC, i.e., the hypothetical TP case). Jurisdictions vary widely in their discounting practices, but even small changes in discount rates can strongly affect performance assessment (Zwalf et al., 2017). In addition, the same government agencies that promote PPPs often perform the 'value for money' studies. Unsurprisingly, critics argue that their methods are inappropriate and biased in favor of PPPs (Boardman & Hellowell, 2017).

It is beyond the scope of this article to explain in detail how and why most PPP evaluations differ from, and are less normatively appropriate than, some version of social cost–benefit analysis. Rather, in Table 1, we summarize the six most important differences between social welfare evaluation (through cost–benefit analysis) and 'on time and within budget' and 'value for money' evaluations.

Unfortunately, there is a major barrier to evaluations that attempt to use the social welfare criterion to compare the use of a PPP versus TP. Comprehensive measures require cost data that are almost always unavailable, either because they are held by the agencies tasked with promoting PPPs, or because the PPP consortia successfully claim that these data should remain proprietary. In addition, especially for capital-intensive infrastructure projects, benefits unfold over decades and are typically not monetized (or even quantified) because there is no organized interest group with the incentives to estimate them, or other groups that have the resources and patience to do so. The comparison also requires a careful construction of the counterfactual case.

Principal–agent theory and government infrastructure procurement

Agency theory derives from a range of social sciences (Dixit, 2002; Kiser, 1999; Laffont & Martimort, 2002; Ross, 1973; Wiseman et al., 2012).

Public principals and private sector agents

In order to predict and explain PPP behavior and its likely impact on performance, we focus initially on the relationship between public sector principals and private sector agents (Dewatripont & Legros, 2005; Hodge & Greve, 2021; Laffont & Tirole, 1991; Moore et al., 2017b; Ross & Yan, 2015; Sappington & Stiglitz, 1987; Shapiro & Willig, 1990). Agency costs arise when agents seek to pursue their own goals, and a principal cannot easily monitor these agents to ensure that they pursue the principal's goal(s). The result is usually a decrease in agent effort leading to lower productivity (technical inefficiency). Alternatively, the principal can engage in costly monitoring or else can try to write a contract that provides agents with high-powered incentives to maximize effort. However, the latter solution imposes risks on agents, since they are not in complete control of the performance measures which determine their compensation. The principal must pay a premium above the average risk-free salary to the agents to compensate them for bearing these risks. This imposes a net cost on society since it reduces the government surplus. Hence, agency costs

Table 1 Evaluation framework comparison

Framework components	Evaluation framework		
	'On time and within budget'	'Value for money'	Social welfare criterion
Categories included (see equation in text)	Funding government's project expenditure impact Narrow focus: ability to stay within forecasted project budget and within forecasted completion time	Funding government's aggregate expenditure impact Less narrow focus: includes government and sometimes producer impacts, but not comprehensive	Comprehensive: includes all members of society (usually nation) whether directly or indirectly affected by project
Evaluation temporal scope	Short run: build phase	Medium run at most: usually based on electoral life cycle	Whole life cycle of project
Choice of discount rate	Little to no discounting	Private sector discount or interest rate but for idiosyncratic actors	Social discount rate equal to the social rate of time preference
Measures of costs and benefits	Binary: achievement or non-achievement of forecasted budget and project timeline (ignores transaction costs)	Net present value (using private sector discount rate) of construction costs to government of PPP versus the public sector comparator	Cost–benefit analysis: net present value of project net social benefits, including transaction costs
Comparator	None	Hypothetical public sector comparator	Counterfactual is either no project or traditional procurement
Treatment of risk	Ignored	Risk premium implicitly included in private sector discount rate	Social discount rate does not include any significant risk premium

in PPP contracts almost always include some combination of monitoring costs, the costs of reduced effort, and the social costs of the payment of risk premia to private sector agents.

Agency costs also occur in complex PPP contexts because of the presence of bounded rationality, i.e., situations where managerial agents do not know how to act in the best interests of principals, even where there is no identifiable informational asymmetry between principal and agents (Jones, 2003). This bounded rationality is quite plausible in the PPP context, given the presence of public owners with multiple, complex and sometimes vague goals. Private sector agents rarely have incentives to clarify the principals' goals, as they can often use goal ambiguity to their strategic advantage.

The government as principal

We consider the principal in a public sector infrastructure provision context at two possible levels of analysis. In some contexts, it is sensible to treat a central government executive (e.g., a prime minister and cabinet, an American-type president, etc.) as the principal and the implementing actors in the provision of infrastructure as agents, whether they are private sector firms, SPVs or lower level agencies within government (Skach, 2007). But society as a collective is the ultimate principal, and a government executive is an agent for that collective. However, society as the principal faces an intractable collective action problem with respect to actual governance (Olsen, 1965). So, in the PPP context, we largely treat the executive as the principal and other levels of government as distinct and separate agents. It is not uncommon for political science analyses to treat government as a unitary principal or agent. However, once we acknowledge the reality of multiple levels of governmental actors, then it is more sensible to analyze self-interested behavior at the individual, group or agency level, especially when considering infrastructure provision (Breton, 1996; Breton & Fraschini, 2007).

Agency theory treats agents of the operational principal—whether government procurement managers or the PPP consortia firm owners—as self-interested actors. In accordance with agency theory, government-employed managers are assumed to maximize their own happiness or 'utility,' which, however, can vary by role and agent level. Private firm owners are assumed to attempt to maximize the value of their ownership shares (often operationalized as current profit maximization). The problem for any government executive is to devise a set of contracts that the various agents will accept and which will motivate them to achieve the government's goal(s). If we treat society as the ultimate principal, the appropriate government goal should be social welfare maximization (economic efficiency), ignoring distributional concerns.

A social welfare-maximizing government principal

A government executive principal acting in the interests of society and seeking to increase social welfare should select the procurement method that yields the greatest sum of net benefits to all members of a society with standing (Boardman et al., 2022). Owners of some (usually foreign owned) firms may not have legal or economic standing in a measure of domestic social welfare.

Traditional procurement versus PPP: agents' incentives

Under TP, using an agency perspective, we assume that government procurement managers attempt to pursue their self-interest, which increases in their pay, but decreases in their effort and risk. A principal's monitoring of agents is costly and so imperfect, and if their remuneration is not linked to performance, then agents will reduce effort (shirk). In these circumstances, they will not deliver operation and maintenance of infrastructure at the lowest possible cost; i.e., its provision will be technically inefficient.

On the other hand, profit-seeking SPV owners may well have greater ability and stronger incentives to improve technical efficiency (i.e., productivity) and reduce costs. Thus, PPP provision, at least of the operation and maintenance components, should be more technically efficient than government provision under TP. Crucially, however, this does not imply that a government principal will necessarily get a PPP project delivered at a lower price, as private sector agents have equally strong incentives to appropriate any potential cost savings as increased profit.

In projects with upfront capital expenditures, there are often ways to lower life cycle costs by investing more resources initially in the design-build phases. Even under TP, governments almost always contract these initial phases to private sector firms (agents). Under a cost-plus contract, agents have weak incentives to hold down design-build costs. Under a fixed-price contract, in contrast, agents have stronger incentives to minimize these costs. In neither situation, however, do agents have an incentive to consider the effects of the design or construction decisions on future operational and maintenance costs. In contrast, with the PPP under a DBFOM contract, the same entity is responsible for both sets of costs and so has a greater incentive to minimize the (discounted) sum of them (Boardman & Vining, 2010a; Iossa & Martimort, 2015).

In combination, from a social welfare perspective, these two rationales provide the best argument for adopting a PPP alternative. However, this ignores the relatively lower social costs of both government financing and of public versus private sector risk-bearing.

Traditional procurement versus PPP: risk-bearing and financing costs

There are three classes of cost that determine the aggregate social costs of financing infrastructure procurement: the cost of financing, the cost of risk-bearing and the cost of bankruptcy. First, particularly in mid- to high-income countries, governments using TP can obtain financing at lower costs than SPV consortia can. The cost of government debt is much lower than both the cost of private debt and the required returns on private sector equity. PPP proponents argue that governments' apparently lower financing costs are illusory—they simply reflect the fact that governments can pass on any unanticipated costs by raising taxes, and so is not subject to default risk (Engel et al., 2014; Klein, 1997). However, public and private finance costs would be equal only in a world of perfect capital markets (that is, absent any market failures), which does not exist (Makovšek & Moszoro, 2018).

Second, from a social welfare perspective, it is crucial to consider the relative costs of risk-bearing across procurement methods. There are three types of risk in infrastructure projects: the risk of optimism bias, project-specific (non-systematic) risk and systematic risk. Optimism bias is the summary label for an endemic tendency to overestimate project

benefits and underestimate costs (Flyvbjerg et al., 2003). Both public and private agents are prone to this bias. Public agents want to greenlight projects for a variety of bureaucratic or political reasons. Private agents want to win project tenders and strategically expect to renegotiate later, after a public principal has committed sunk costs into the relationship (Sarmento & Renneboog, 2021).

Project-specific risk is the risk that actual project net benefits will be higher or lower than predicted, due to factors that are not shared with other projects. Finance theory and practice demonstrate that one can virtually eliminate this idiosyncratic risk by holding a large enough portfolio of projects, provided the returns of the projects are not perfectly correlated (Markowitz, 1952). Members of society obtain their consumption from a very large, diversified portfolio of government projects and other sources. Additionally, government financing spreads project-specific risks over the entire population of taxpayers, effectively eliminating the effects on any one of them (Arrow & Lind, 1970). In combination, the diversification and risk spreading arguments imply that the government does not bear any social costs of project-specific risk.

Systematic risk is the risk that actual net benefits will be either higher or lower than predicted because of fluctuations in the overall economy. This risk depends, *inter alia*, on the correlation of a project's returns with the national growth rate of per capita consumption. For government-financed projects, however, the systematic risk borne by an average member of society is almost always too small to matter (Moore et al., 2017a). In contrast, due to concentrated ownership and imperfect capital markets (i.e., missing markets and credit rationing due to informational asymmetries between borrowers and lenders), PPP consortia cannot diversify away all project-specific risk. To reduce project-specific risk, initial SPV consortia firms usually attempt to sell their equity as soon as possible after construction. But this ownership fragmentation only increases principal–agent problems within a PPP, since owners with limited shares have too little 'skin in the game' to make monitoring managers and employees worthwhile, attenuating the potential technical efficiency advantages of PPP provision.

Third, under government ownership infrastructure projects cannot go bankrupt in practice. PPPs can go bankrupt, and they quite often do. Hence, the social costs of PPP bankruptcy due to unforeseen cost escalations will exceed those for TP. The evidence (discussed below) that PPP firms require substantial premia in their expected returns confirms that they do face significant risks. They also require compensation for the political risk that a future government will opportunistically renegotiate a PPP contract once private agents have sunk costs in the design and construction phases.

Thus, both theory and evidence are consistent with the view that governments do have lower social costs of risk-bearing and lower financing costs (Grant & Quiggin, 2003; Moore et al., 2017a, 2017b). A PPP would have to deliver substantially better technical efficiency to offset the financing and risk-bearing cost advantages of TP (Boardman & Hellowell, 2017).

Traditional procurement versus PPP: technical efficiency and the social costs of risk

Under TP, governments bear design-build risks, provided they employ cost-plus contracting. Cost-plus contracts minimize the social cost of risk-bearing but provide very weak incentives to improve technical efficiency. On the other hand, if either a government (under

TP) or a PPP SPV consortium employs fixed-price contracting for the design-build phases, then that agent bears all those risks and has the greatest incentive to minimize costs. In any case, both governments under TP and PPP consortia face the same trade-off—providing strong incentives to agents to pursue technical efficiency also transfers all the design-build risks to those same agents, which requires extra compensation, and adds to total social costs.

We conclude that ownership and maintenance risks will be less socially costly under TP, since government operators have a cost advantage in risk-bearing over PPP private sector firms. In any case, SPV consortia now typically attempt to avoid revenue or demand risk when contracting (Vining & Boardman, 2008). Again, the profit motive provides SPV consortia with strong incentives to minimize the costs of these activities under a PPP, but this is achieved at the price of an increase in social costs of private finance and risk-bearing. In addition, given that the infrastructure is to be transferred back to the public at the end of the contract, the PPP provides very weak incentives for optimal maintenance unless the contract specifically monitors and enforces this adequately. Finally, where externalities or quality/esthetics project dimensions are important components of social welfare, it is difficult for PPP contracts to provide any real incentives for the private sector agents to focus on them (Kwoka, 2005).

Traditional procurement versus PPP: transaction costs

Two further related considerations also favor TP over PPP provision: the higher transaction costs of PPP contracts and the resulting reduction in the number of firm or consortia SPV bidders. Transaction costs are those costs borne by buyers but not received as benefits by sellers: the costs of arranging, negotiating, monitoring and enforcing a contract (Williamson, 1985). These costs, though, manifest themselves as revenues and profits for investment bankers, lawyers, consulting engineers and other potential agents. Not surprisingly, they are often vocal proponents for and supporters of the use of PPPs.

Potential PPP projects usually have the following characteristics: high asset specificity, high complexity, high demand and use risk, high construction cost risk, low *ex ante* competitiveness of bidders and poor government contract management skills because of lack of relevant experience. Any combination of these project characteristics tends to engender high transaction costs (Globerman & Vining, 1996, Vining et al., 2005). PPP contracting is inevitably more complex than TP contracting and requires substantial preparation time and effort even before contract signing. This complexity and the high risk, in turn, discourage project delivery bidders. The likely result of fewer bidders is the payment of excessively high returns to winning PPP consortia and associated agents. We summarize our analysis of the relative merits of PPPs versus TP for a social welfare-maximizing government principal in Fig. 1.

The empirical evidence on PPP performance and the social welfare implications

Does the empirical evidence show that PPPs—across jurisdictions and time—improve social welfare relative to traditional government procurement? In this section, we seek to demonstrate that it is not possible to make a comprehensive or convincing assessment

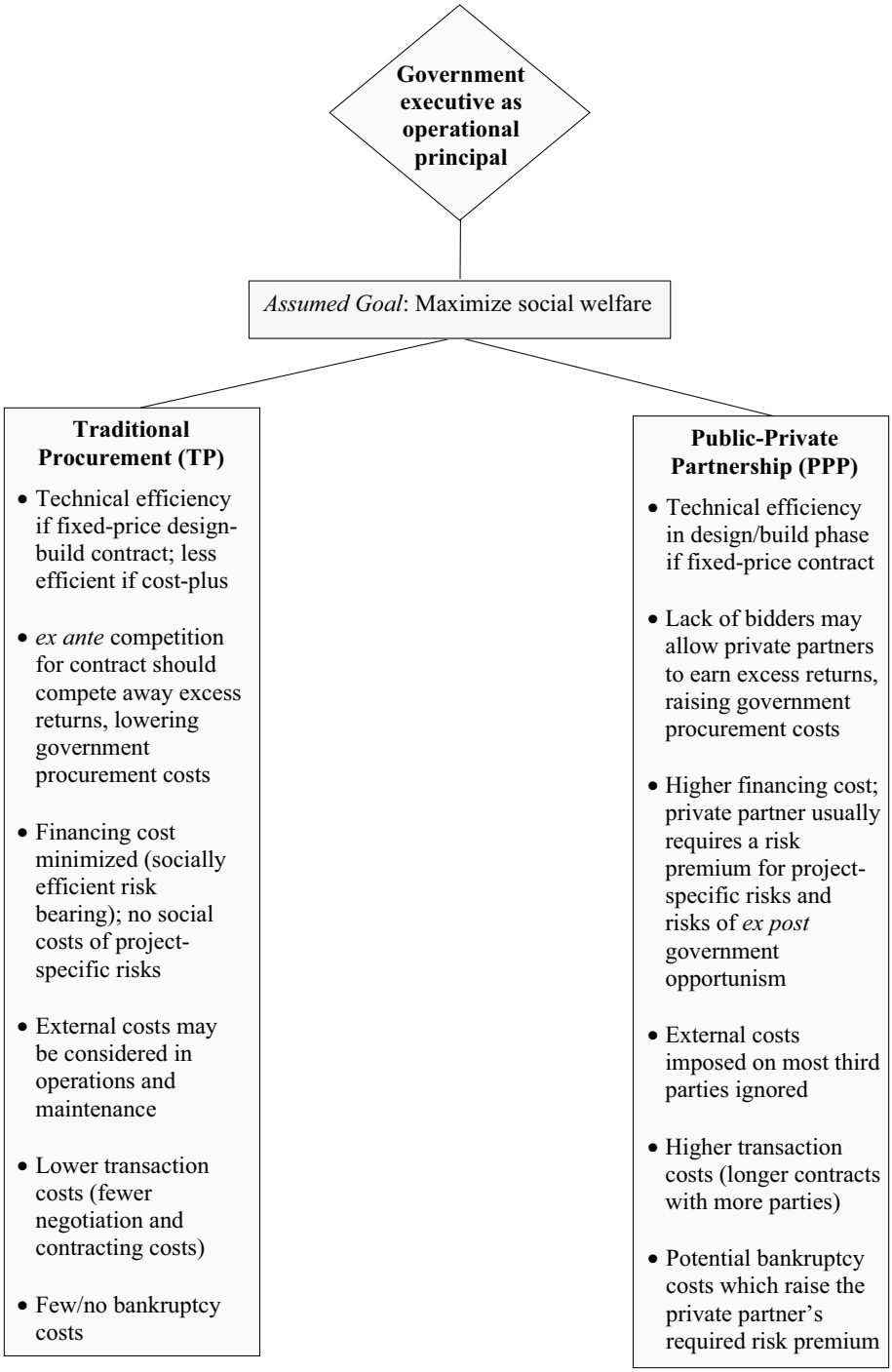

Fig. 1 Social welfare-interested government executive

based on the existing PPP performance literature. To buttress this claim, Table 2 summarizes 20 studies that assess PPP performance relative to TP across a range of jurisdictions through to 2022.[5] We cover studies of PPPs that are mostly located in Europe, but also include a few from North and South America.[6] Some of these studies attempt to measure the relative cost of PPPs versus TP, but only consider the impacts on government expenditures. Others assess whether projects are 'on time and within budget' or provide 'value for money,' which we have argued are inappropriate evaluation criteria (as summarized in Table 1).

A perusal of Table 2 confirms that most evaluations do not adopt anything close to the social welfare criterion. Given this, what does this evidence reveal about the current state of normative evaluation of PPPs? In Table 3, we summarize these studies in terms of the evaluation criteria used (column 1), whether the study analyzes the project over the entire project lifecycle or only during one phase (column 2) and whose net benefits are included (column 3). The table confirms that, while many of the evaluation criteria and time frames used in these studies are of great interest to particular interest groups, they are far from being comprehensive social cost–benefit analyses of PPPs relative to TP.

Petersen (2019) provides the most comprehensive meta-analysis of the available empirical studies on costs, quality and value for money of PPP versus TP for roads, schools, bridges, railways, hospitals and public buildings. He analyzes 21 studies that satisfy several very reasonable criteria, such as being published in peer-reviewed journals and having a well-constructed counterfactual or comparator. He concludes that these studies do not provide evidence that PPPs lower the life cycle costs of long-term infrastructure. With respect to quality, only three studies attempt to compare PPPs with TP. One finds lower PPP quality, one finds quality marginally higher by some measures and one finds no difference. Only two studies find greater overall 'value for money' for PPPs, two find less and three find mixed or inconclusive results, 12 lack data to make an assessment and two find no association between the procurement method and 'value for money.' Petersen concludes that '(t)he results of this systematic review suggest that PPPs are on average more costly… (than) conventional procurement (see Petersen, 2019, Table 1).'

Other studies that directly or indirectly assess technical efficiency also find little evidence that PPPs provide superior performance to TP. Several find that PPPs had either higher costs or lower quality (Alonso & Andrews, 2022; Boardman et al., 2016; Hellowell & Vecchi, 2015; Makovšek & Moszoro, 2018). Blanc-Brude et al. (2009), Boardman et al. (2016) and Edwards et al. (2004) provide evidence that governments using PPP contracts had to pay premia to ensure 'on time and within budget' performance, with the cost premium roughly equal to traditional TP cost overruns.

Many researchers find that governments paid excessively for PPPs, with private equity agents frequently earning significant excess returns on their investments relative to the opportunity cost of their finance (Acerete et al., 2019; European Court of Auditors (ECA), 2018; Hellowell & Vecchi, 2015; National Audit Office, 2012; Vecchi & Hellowell, 2013; Vecchi et al., 2013). This is most likely because, *inter alia*, requiring private finance in

[5] Hodge and Greve (2009, Table 1) review PPP performance through to 2007, but only consider 'value for money' as the evaluation criterion. Our Table 2 considers published studies through to 2022 found on Google Scholar using the search term 'public–private partnerships'. We selected empirical or case studies that address at least some aspect of social welfare or test some implications of principal-agent theory in the PPP context. We exclude survey and interview studies.

[6] Cepparulo et al. (2019) do consider survey studies, as well as many other empirical studies.

Table 2 Empirical evidence on PPP performance

Citation	Jurisdiction/sector/time period	Performance criterion	Performance conclusion	Comments
Petersen (2019)	Meta-analysis of 21 peer-reviewed studies of PPP versus TP counterfactual	Technical efficiency (costs and quality)	Nine studies find PPPs cost more than TP, three find they cost less, two find they cost the same, three provide mixed evidence and four cannot compare costs; three studies compare PPP quality with TP, one finds quality lower, one finds quality marginally higher by some measures and one finds no difference; two studies find more value for money for PPPs, two find less, three find mixed results, 12 lack data and two find no difference	Concludes that peer-review literature does not support view that PPPs lower life cycle costs of long-term infrastructure and that PPPs are more costly than TP on average
Alonso and Andrews (2022)	The UK children's social services PPP	Technical efficiency (costs and quality)	No evidence of improved quality but PPP increased costs to government relative to TP	Authors use synthetic control method to construct hypothetical TP comparator
European Court of Auditors (ECA) (2018)	12 EU-financed PPPs in France, Greece, Italy, Spain and Ireland	Multiple, including government costs and transaction costs	PPPs increased risk of insufficient competition; much longer tendering periods; considerable construction delays/cost increases; overly optimistic demand forecasts; 'inappropriate, incoherent and ineffective' risk allocation; excess returns to PPP owners up to 14 percent	Concludes that most PPP projects chosen without analysis of other options such as TP
Hellowell and Vecchi (2015)	The UK and Italian PPP hospitals	Technical efficiency (government costs; quality)	Excess returns to private equity investors; reduced operation, maintenance and service quality	Indicative of lack of bidding competition and inability to contract effectively on operational quality

Table 2 (continued)

Citation	Jurisdiction/sector/time period	Performance criterion	Performance conclusion	Comments
Boardman et al. (2016)	40 British Columbia, Canada PPPs since 2002	Technical efficiency; transaction costs	Large premium paid to PPP consortium to ensure on time and within budget; no evidence Canadian PPPs reduced infrastructure life cycle costs; transaction costs average 1–3 percent of total project costs	Report that Ontario Auditor General estimated 75 Ontario PPPs' transaction costs $400 million CAD higher than for TP
Edwards et al. (2004)	The UK highways	Government (construction) costs	25 percent premium on construction cost on four PPP road projects	Premium paid to ensure projects on time and within budget
Blanc-Brude et al. (2009)	European roads 1990–2005	Government (construction) costs	24 percent higher *ex ante* construction prices on PPP versus TP projects	Roughly equivalent to reported *ex post* cost overruns for TP projects
National Audit Office (2012)	99 UK PPPs	Government costs	Excess returns to the private equity partner; 15–30%	Indicative of lack of bidding competition; socially costly as this reduces government surplus
Vecchi and Hellowell (2013)	10 UK PPP contracts signed by the National Health Service	Government costs	Excess returns to project financiers	Indicative of lack of bidding competition; socially costly as this reduces government surplus
Vecchi et al. (2013)	77 PPP contracts signed by the UK health-care providers 1997–2011	Government costs	Excess returns to project financiers	Indicative of lack of bidding competition; socially costly as this reduces government surplus
Makovšek and Moszoro (2017)	The UK and other	Government (construction) costs	Evidence of risk premium paid to PPP for construction; limited bidders (1–3); higher construction costs of PPP versus TP	Refinancing common after construction is completed

Table 2 (continued)

Citation	Jurisdiction/sector/time period	Performance criterion	Performance conclusion	Comments
Solheim-Kile et al. (2019)	Four Norwegian PPPs	Government costs	Costly private finance (five percent required risk premium); private finance requirement reduces potential bidders and fails to decrease agency costs; only efficiency effect due to bundling design/build with operation	Construction firms do not want to sign long-term contracts
Fernandes et al. (2016)	Seven shadow toll road PPP projects Portugal 1999–2002	Government costs; transaction costs	PPP finance costs 3.7% higher than public finance	Transaction costs account for 40 percent of this premium
Acerete et al. (2019)	Roads in Spain and the UK	Government costs	Private financiers and shareholders benefit at expense of public sector	
Engel et al. (2014)	Latin American PPPs	Transaction costs	Up to 10 percent of project costs	94 percent renegotiated, overwhelmingly favoring the concessionaire
Reeves et al. (2017)	670 UK PPPs 1993–2004	Transaction costs	Tendering duration averaged 35 months	Some demand risk transferred to PPP
Casady et al. (2019)	279 Canadian PPPs through to 2018	Transaction costs	Tendering duration averaged 18 months	No demand risk transferred to PPP; substantial completion payment to PPP after construction
O'Shea et al. (2019)	Irish schools	Delivery time	No evidence of faster infrastructure delivery	Little evidence of better value for money with PPP versus TP
Verweij and van Meerkerk (2021)	65 Dutch transportation infrastructure projects 2008–2017	Delivery time and project costs	No evidence PPPs any better than TP at on-time performance; some evidence of fewer cost overruns with PPPs	Likely that higher costs 'baked in' PPP contracts so this may account for fewer cost overruns

Table 2 (continued)

Citation	Jurisdiction/sector/time period	Performance criterion	Performance conclusion	Comments
Hussain and Siemiatycki (2018)	Ontario PPPs after 2008	Transaction and monitoring costs; risk transfer	Declining use of private finance; lack of transfer of demand risk; minimal private equity left in final years of projects	Almost all availability payments; substantial completion payments from 50 to 85% of project costs after construction phase

Table 3 PPP performance studies—evaluation criteria and social welfare

Evaluation criterion/criteria	Project stages analyzed (temporal scope)	Affected groups (scope of standing)	Comments on criterion/criteria
Construction costs	Short term, usually 0–5 years	Very narrow—only government	Only focus on first phase (construction), no account of consumer welfare change
Government costs	Short term, usually within current electoral cycle	Narrow—only government budget costs, not opportunity costs; returns to private investors	Focus only excess returns or risk premia paid to private investors by government
Tendering duration	Short term (until PPP contract signed)	No assessment	Only indicative of some transaction costs, no measure or assessment of net benefit changes to any affected group
Transaction costs	Unclear, but probably very short term (contract negotiation)	No assessment	No measure or assessment of net benefit changes to any group, no comparison with traditional procurement alternative
On time/within budget	Short term, usually 0–5 years	No assessment (implicitly government?)	Only focus on first phase (construction), no account of net benefit changes to any affected group
Technical efficiency (costs and quality)	Medium term (construction and operation/maintenance)	Government and (implicitly) consumers	Improvement in technical efficiency can raise social welfare, but still incomplete measure of social welfare improvement over entire project lifecycle

a PPP severely limits the number of potential bidders, as discussed above (ECA, 2018; Makovšek & Moszoro, 2018; Solheim-Kile et al., 2019).

Several analysts have concluded that private finance is more costly than government finance, as private investors require substantial risk premia to finance government projects (Fernandes et al., 2016; Makovšek & Moszoro, 2018; Solheim-Kile et al., 2019). Lenders apply a risk premium to the construction phase of the project, despite the presumed ability of the private sector to eliminate project-specific risks through diversification (see also Blanc-Brude & Ismail, 2013). The greater transaction costs of private finance also make it more costly (Fernandes et al., 2016). The evidence suggests that refinancing after construction is common (Makovšek & Moszoro, 2018), as construction firms do not wish to enter into long-term contracts and seek to exit after costs are sunk (Solheim-Kile et al., 2019). Partly for these reasons, Ontario, Canada, for example, now minimizes the use of private finance in PPPs (Hussain & Siemiatycki, 2018).

Overall, the empirical evidence seems to confirm that PPP contracts usually exhibit high transaction costs (Engel et al., 2014), with very long tendering periods before contracts are signed (Casady et al., 2019; ECA, 2018; Reeves et al., 2017). Furthermore, there is little evidence that PPPs actually speed up project delivery once these long contracting durations are accounted for (O'Shea et al., 2019; Verweij & van Meerkerk, 2021). Renegotiation, which frequently benefits private sector owners, often occurs after costs are sunk (Engel et al., 2014; Sarmento & Renneboog, 2021), and there is often little or no transfer of demand risk to PPP agents (Casady et al., 2019; ECA, 2018; Hussain & Siemiatycki, 2018).

We follow Hodge and Greve (2017: 64) who ruefully note, '…rigorous performance assessments in terms of the public interest have been surprisingly limited. Independent rigorous assessments have been even scarcer.' Given this and our review, it is not surprising that we conclude that existing studies do not provide convincing evidence that PPPs consistently deliver greater social welfare than TP. Nor does the evidence seem to support even narrower claims for PPP superiority in delivering better quality, greater 'value for money,' faster delivery of infrastructure, lower construction costs or greater innovation.

The evidence does support the conclusion that PPPs do have higher financing costs, mostly due to greater required risk premia, incur higher transaction costs and suffer from low bidder competition, resulting in excess returns to the private sector owners. Hodge and Greve (2017: 70) conclude that 'this lack of P3 success stands in marked contrast to the usual positive judgments made by advocating governments, however.' Their conclusion is consistent with the view that governments assess PPPs success based on their political and governance advantages, rather than on their ability to maximize social welfare. Accordingly, we now consider the political motivations behind this choice of procurement method.

A vote-maximizing government principal: the political economy perspective

We have concluded that neither theory nor evidence supports the view that using a PPP rather than TP to procure infrastructure is likely to improve social welfare. However, Hodge and Greve (2017, 2021) among others point out that PPP delivery often offers

significant political benefits to current governments. Political economy seeks to predict the actions of self-interested politicians (John, 2018). Agency theory can provide a useful lens through which to consider political economic theory in this context (Cavaliere & Scabrosetti, 2008).

A self-interested government principal's goal(s)

As the operational principal, a government executive may have a single or multiple goal(s). Furthermore, there is likely to be some ambiguity about the goal(s), or at least about their stability over time, as the executive evolves over the electoral cycle. The goal(s) may either be broadly congruent with those of society at large or may represent the self-interested behavior of the politicians who form the executive at the time of a commitment to infrastructure provision. Some political philosophers argue that 'democratic political markets are organized to promote wealth-maximizing outcomes, that these markets are highly competitive and that political entrepreneurs are rewarded for efficient behavior' (Wittman, 1989). Consequently, they assume that the government executive in the main does act in the best interests of society; i.e., that there is little goal divergence between the collective society and any democratic government executive. In the context of PPPs, however, there are a number of political economy reasons to believe that the goals and behaviors of politicians in executive positions will not lead to outcomes that coincide with the collective, societal interest in technically efficient (cost-minimizing) behavior, as we discuss below.

Principal–agent theory suggests that citizens cannot effectively monitor the behavior of the government executive or its subordinate levels. Consequently, a government executive has some leeway to pursue its electoral self-interest and will seek to increase the probability of its re-election by choosing the method of infrastructure procurement that appeals to the greatest number of voters and political donors (Downs, 1957). Some actions related to infrastructure provision that appeal to interest groups and may reduce social welfare include employing party loyalists, retaining domestic headquarters and maximizing domestic employment, inefficiently capping prices or requiring universal service even for high-income users (Marra, 2007; Vining & Boardman, 1992). State agency managers can be treated as a lower level of government agents. A combination of informational asymmetry and inability to employ high-powered financial incentives in the context of difficult-to-measure public goals means that these managers are freer to pursue their own goals.

In practice, a government executive principal employs multiple agents, and, usually, multiple levels of agents (as is the case with a PPP supervisory agency that contracts with multiple consortia over many possible projects). Once a PPP supervisory agency is placed between the central executive and proposed infrastructure projects, it is likely that it will become 'captured' and adopt behavior that favors PPP delivery, if only to facilitate agency survival and to avoid irrelevance (Downs, 1957; Macey, 2003).

Traditional procurement versus PPP: political benefits of strategic timing of cash flows

Somewhat unusually, PPPs have features that make them politically attractive to both left-of-center and right-of-center parties. First and most importantly, PPPs offer governments more attractive timing of the cash flows. With TP, a current government incurs large upfront capital expenditures, but relatively low expenditures over the remainder of the infrastructure life cycle. In contrast, in most PPP contracts, a current government only has to pay a relatively small share of the project costs upfront or during the construction phase. Only once the infrastructure is operational will a government or users have to incur significant expenditures or user fees, as both user fees and availability payments are spread over many (often 30 or more) years. So, the use of PPPs allows current governments to provide voters with the benefit of visible and functional infrastructure, while deferring most expenditures to future politicians, voters and taxpayers. Boardman and Vining (2010b) characterize this government strategy as 'renting the money.'

Avoiding immediate expenditures is beneficial to a democratic government executive because there is some probability that they will not be in power in the future. As a result, democratic governments tend to underweight the political costs of future taxes, relative to the immediate political benefits of getting the infrastructure built. From the social welfare perspective, however, society does not avoid paying for projects nor reduce costs by using PPPs, it just pays later (and sometimes significantly more in terms of net present cost).

The incentive for government myopia is amplified if voters exhibit fiscal illusion—that is, if they do not fully take into account the future costs and the future taxes that must ultimately pay for the infrastructure (Cepparulo et al., 2019; Joulfaian & Marlow, 1991; Marlow & Joulfaian, 1989). Fiscal illusion is plausible in the infrastructure context because the comparison of alternative possible investments in long-lived infrastructure is both cognitively difficult and costly for voters (Borcherding et al., 2004; Dollery & Worthington, 1996; Heyndels & Smolders, 1995). PPPs do not require immediate tax increases, nor do they increase a government's current deficit or outstanding debt. One manifestation of the political benefit is the common claim that PPPs 'allow' costly infrastructure to be built when a government is constrained from increasing the level of debt. Sometimes, these budget limits are imposed by previous governments in the same country, as in the case of the UK, or by external entities such as the European Union, for example, to meet the Maastricht criteria related to public deficits and debt. Ultimately, however, citizens as taxpayers have to pay for the use of resources required for constructing and maintaining public infrastructure.

Traditional procurement versus PPP: political benefits of 'on time and within budget' projects

A second and more immediate political benefit of PPPs is that they make it easier for a government to claim 'on time and within budget' project delivery. Major infrastructure delays and cost overruns may signal government mismanagement, which reflects

badly on the incumbent political party. Large infrastructure projects often generate media coverage and become election issues. Using PPPs can reduce the risk that voters will hold a government responsible when infrastructure projects are perceived as unsuccessful.

There are at least four reasons why PPP projects can be more easily made to appear to be 'on time and within budget' than can TP projects. First, construction does not commence until after an extensive planning and negotiation period, so the PPP project is ready to go immediately at contract signing. Second, the cost overruns that are predictable can be 'baked in' to PPP contracts. So, ironically, governments often must pay more for PPP contracts to ensure that they will appear to be 'on time and within budget.' Third, PPP contracts normally provide SPV consortia with strong incentives to complete 'on time and within budget.' Fourth, PPP contracts are formal legal documents and are relatively inflexible, diminishing the probability of costly renegotiations. (Makovšek and Moszoro (2018) argue that 'project creep' accounts for most of the cost overruns incurred using TP in the construction phase.)

Of course, governments and citizens ultimately retain the residual risk if a private consortium is unable to complete a project. There have been numerous high-profile PPP project bankruptcies. These include Metronet in the UK, the South Bay Expressway in San Diego and the Cross-City Tunnel in Sydney, Australia and the UK–France Chunnel. When PPP projects run into trouble, governments sometimes assume all or a large part of the debts after renegotiations (Hodge & Greve, 2021). In the Metronet case, the government guaranteed 95 percent of the loans (in a project that was 88.3 percent debt financed; see Vining & Boardman, 2008). But overall, the use of PPPs would seem to reduce the political risks to incumbent governments.

Traditional procurement versus PPP: political benefits of interest group support

The third political benefit of PPPs is that they provide financial benefits to aligned interest groups, such as law firms, investment banks and large construction firms and consultants. These concentrated interest groups have a disproportionate influence on many governments (Hellowell, 2010; Olsen, 1965; Wilson, 1989). PPP infrastructure delivery may provide immediate political benefits for a government executive, such as campaign contributions from these groups. Government executives may also adopt PPPs in response to their lobbying. The interest groups lobby for PPPs because the benefits they receive are substantial and concentrated among a small number of firms and individuals. In contrast, the PPPs' higher transaction costs, excess returns and higher risk premia paid are dispersed over many taxpayers. Furthermore, some of these costs will be borne by future generations of voters whose interests may not be represented by the current electorate. As a result, no single voter or group of voters has sufficient incentives to provide a countervailing lobby (Olsen, 1965).

Traditional procurement versus PPP: political benefits of distance from user charges

The fourth attractive feature of PPP project delivery from a government's perspective is that it usually involves user fees or tolls. Use of a PPP increases the perceived distance between toll payers and government, relative to TP. Private sector operators are better able to withstand negative reactions to charging or increasing user fees. This reduces a government's political risk associated with tolling and increases its willingness to allow the imposition of some user fees, or higher user fees than would otherwise prevail. Non-users perceive tolls as fairer because they do not pay for the infrastructure, while users do. Users do not like paying tolls to anyone. They do appear to be somewhat less resistant to paying tolls to a private sector operator than to a public one, although systematic evidence is hard to find.

Traditional procurement versus PPP: political benefits of the 'best of both worlds'

A fifth political benefit of PPPs is that they invoke a politically pleasing combination of government legitimacy and private sector efficiency. PPPs may appeal to those who favor greater government involvement in the economy while simultaneously appealing to those who believe the private sector is inherently more efficient: 'the best of both worlds' (Vining et al., 2014). Traditional procurement of infrastructure likely appeals more narrowly to those who prefer a larger public sector. In contrast, PPPs may provide a broader appeal, allowing more public infrastructure provision while simultaneously encouraging greater private sector involvement. PPPs can also reduce a government's political risk by facilitating 'blame shifting' to the private sector if a project fails on some high-profile dimension (Cusumano et al., 2022). We summarize our analysis of the relative merits of PPPs versus TP for a self-interested (vote-maximizing) government executive principal in Fig. 2.

The empirical evidence on political economy motives for government PPP adoption

It is difficult to reach any overarching conclusions about the specific manifestations of political economy motivations for the adoption of PPPs. Both principals and agents can and almost certainly do dissemble on motives. Also, of course, with multiple agents, there can be multiple motives. Given these complexities, we do not address survey and interview studies.[7] Rather, we focus on the recently published aggregate empirical literature on PPP adoption, which the studies' authors believe reflect political economy motives. We used Google Scholar and searched for peer-reviewed articles published in the last decade that examined non-financial motives for PPP adoption. We found two case studies and nine econometric analyses that attempt to determine whether fiscal constraints, the timing of

[7] Cepparulo et al., (2019, Table 1) review articles that are based on case studies, official submissions and interviews, as well as several of the empirical studies which we review, in order to assess whether PPP adoption is a means of avoiding government budgetary restrictions.

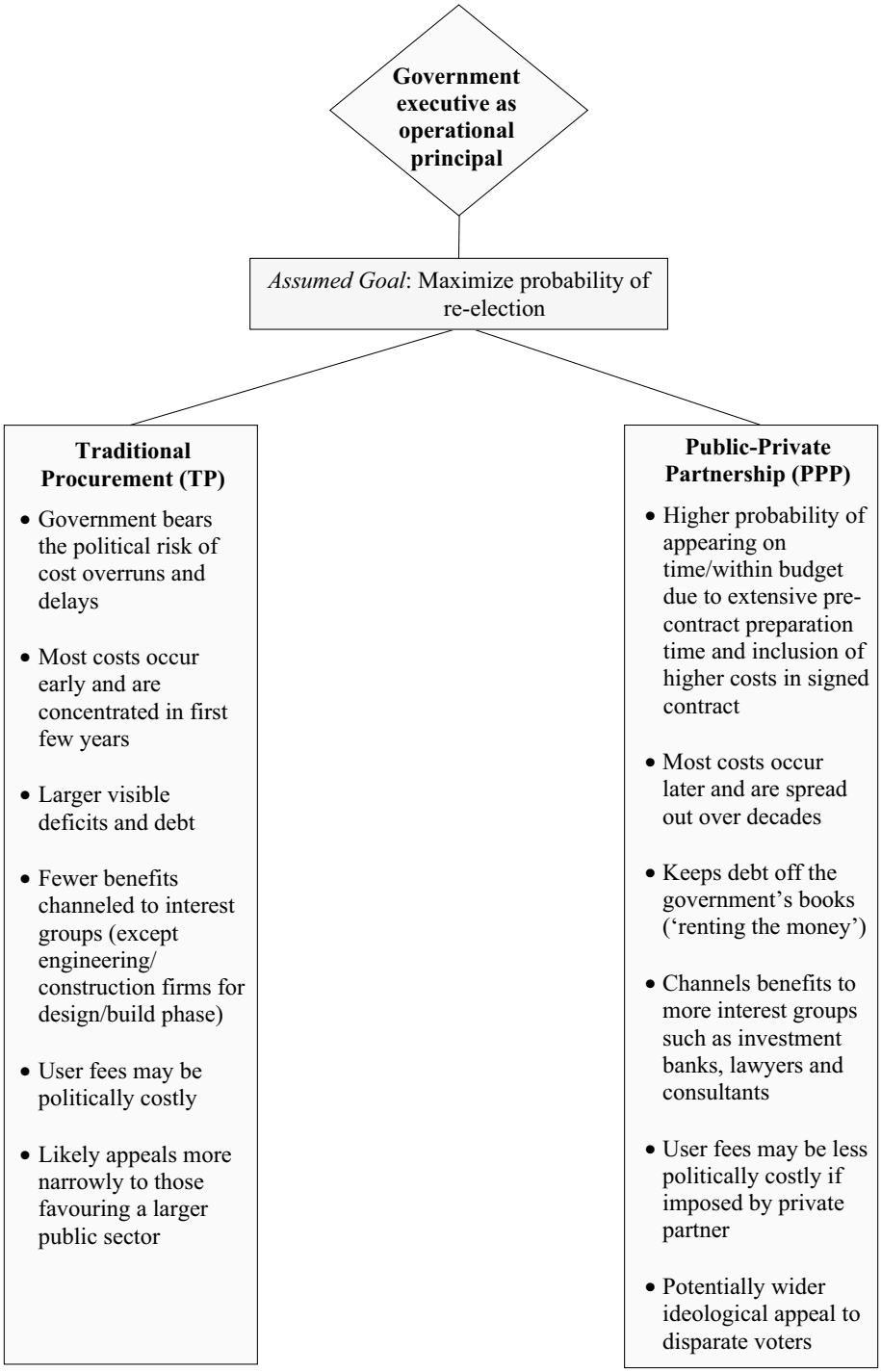

Fig. 2 Self-interested government executive

elections, political ideology or other political economy determinants can explain governments' preferences for PPPs. We summarize the econometric analyses in Table 4. These studies differ substantially in their data (jurisdictions and time periods), methods and choice of dependent and independent variables. The major caveat in reviewing this literature is that political motives are likely to reveal themselves quite differently in different countries and regions, owing to differences in political histories, institutions and cultures. The one robust result is that governments do appear to be motivated by political economy considerations when choosing a method of infrastructure procurement.

Hellowell and Vecchi (2015) find in their case studies of the UK and Italian hospitals that the use of PPPs provides clear political benefits by allowing government to defer costs. And, in a case study of the infamous Morandi bridge collapse in Genoa, Italy, in 2018, Cusumano et al. (2022) demonstrate that the fact that the project was a PPP allowed politicians to shift blame to the private sector consortium, reducing the political risk they faced.

There is some limited econometric evidence that governments may be motivated to use PPPs as a means of avoiding internally or externally imposed fiscal constraints. Four studies find that higher deficits, debt, lower tax revenues and fewer external sources of funding all encourage the use of PPPs (Albalate et al., 2015; Buso et al., 2017; Cepparulo et al., 2020; Kopańska & Asinski, 2019). However, one study found the opposite (Mota & Moreira, 2015), and two found no significant effects of fiscal variables on the use of PPPs (Boyer & Scheller, 2018; Mazzola et al., 2019).

There is also quite mixed econometric evidence on the effect of partisan politics on PPP adoption. Three studies show that some left-of-center governments favor PPPs (Cepparulo et al., 2020; Mota & Moreira, 2015; Peña-Miguel & Cuadrado-Ballesteros, 2021). One study indicates that right-of-center governments prefer PPPs (de la Higuera-Molina et al., 2021). Another suggests that the preference depends on the regulatory and oversight capabilities of the legislature, with left-of-center governments favoring PPPs more, the less professional is the legislature (Boyer & Scheller, 2018). One study finds no effect of partisanship on PPP use (Albalate et al., 2015).

Two studies find that greater political competition and fragmentation leads to increased PPP adoption in infrastructure procurement (Kopańska & Asinski, 2019; Peña-Miguel & Cuadrado-Ballesteros, 2021). However, another study finds the reverse (Cepparulo et al., 2020). With respect to the effects of the electoral cycle on the decision to use PPPs, again there are mixed results. Kopańska and Asinski (2019) find no effect of the phase of the electoral cycle on the probability that a PPP tender is opened. Peña-Miguel and Cuadrado-Ballesteros (2021) provide some evidence while fewer PPP contracts are awarded in an election year, more are awarded immediately before an election. In contrast, de la Higuera-Molina et al. (2021) find that Spanish municipal services are more likely to be provided by PPPs immediately following an election. However, Spanish voters (especially left-of-center ones) may be somewhat unique in their dislike of any private sector involvement in public service provision.

Political economy theory would suggest that politicians, especially those whose positions are subject to electoral cycle pressures, choose PPPs to provide infrastructure in the present while deferring costs to the future. As discussed, however, the evidence to date is inconclusive. Left-of-center governments may favor PPPs as they combine public infrastructure provision with private sector efficiency, while right-of-center governments may prefer outright privatization, but again the evidence is suggestive but certainly not conclusive (Vining et al., 2014).

Table 4 Political economy evidence

Citation	Jurisdiction/sector/time period	Dependent variable(s)	Political economy explanatory variables	Results
Albalate et al. (2015)	266 USA infrastructure projects with some private sector involvement 1985–2008	Binary: 0 = design-build or management contract and 1 = PPP Ordered: 1 = design-build, 2 = management contract and 3 = PPP	State tax/income State debt/income State bond rating Dummy variable: 1 = Republican governor	Tax/income ratio: negative, significant effect on degree of private participation Debt/income: positive, significant effect Bond rating, Republican governor: no effects
Mota and Moreira (2015)	17 European Union (EU) countries 2000–2011	PPP investment value in euros	Government budget deficit/GDP Government political orientation	Government budget deficit/GDP ratio: negative, significant effect on PPP investment Left-of-center government: positive, significant effect
Buso et al. (2017)	Test group: 92 French municipalities which initiated at least one PPP Control group: 202 that did not initiate a PPP 2004–2013	Binary: 1 = initiated PPP and 0 = did not	One year, lagged local government: (i) debt (ii) debt service expenses (iii) budget surplus (iv) endowment from central government Dummy variable: = 1 after 2010 for new requirement that municipalities account for PPP liabilities. Dummy variables for left-of-center, right-of-center and centrist mayors	Lagged local government debt and debt service expenditure: positive, significant effects on PPP initiation probability Legal change after 2010: no effect (no evidence of 'debt hiding' motivation) Left-of-center mayor: negative, significant effect Right-of-center mayor: positive, significant effect

Table 4 (continued)

Citation	Jurisdiction/sector/time period	Dependent variable(s)	Political economy explanatory variables	Results
Boyer and Scheller (2018)	State transport projects in the USA 2000–2016	Binary: 1 = adopted PPP and 0 = did not	Two-year lagged state: (i) government deficit per capita (ii) government debt per capita Government ideology Professionalism of state legislature (oversight tools) Percentage of state employees unionized	Lagged government deficit per capita: very small, negative effect on PPP adoption Lagged government debt, percentage of state employees unionized: insignificant effects More left-of-center is more likely to adopt PPP for least professional legislature No effect for moderately professional legislature More right-of-center is more likely to adopt PPP for most professional legislature
Kopańska and Asinski (2019)	2478 Polish municipalities 2009–2016	Binary: 1 = at least one PPP tender opened in a year and 0 = none opened Ordered: Number of PPP tenders opened in a year	Municipal debt/revenues Share of EU grants in municipal revenues Measure of political competition Measure of political fragmentation Dummy variable: 0 = first 2 years after election and 1 = last 2 years of election cycle	Municipal debt/revenues: generally positive, significant effect on PPP tenders Share of EU grants in revenues: negative, significant effect Measure of political competition: negative, significant effect Measure of political fragmentation and timing of electoral cycle: no effects
Mazzola et al. (2019)	Italian municipalities aggregated to 103 provinces Tenders realized 2003–2007; contracts of at least 10 million euros, awarded 2003–2009	Binary: 1 = tenders with at least one bidder resulted in awarded contract and 0 = none	Provincial average of municipalities' revenues per capita Index of municipal government efficiency	Revenues per capita: no effect Index of municipal government efficiency: negative, significant effect on probability of PPP contract

Table 4 (continued)

Citation	Jurisdiction/sector/time period	Dependent variable(s)	Political economy explanatory variables	Results
Cepparulo et al. (2020)	EU countries 1990–2008 and 2008–2015	PPP investment in billions, constant international dollars (IMF data)	General government budget surplus General government debt Tax revenues/GDP EU funding Index of strength of fiscal rules Measure of political fragmentation Percentage of right-of-center, left-of-center and centrist parties in legislature	Government budget surplus: negative, significant effect on PPP investment Government debt: negative, significant effect Tax revenues/GDP: positive, significant effect EU funding: negative, significant effect Fiscal rules: positive, significant effect pre-2008 Greater political fragmentation: negative, significant effect on PPP investment, especially post-2008 More left-of-center government, greater PPP investment; more right-of-center, less PPP investment; no effect for centrist government

Table 4 (continued)

Citation	Jurisdiction/sector/time period	Dependent variable(s)	Political economy explanatory variables	Results
Peña-Miguel and Cuadrado-Ballesteros (2021)	80 low- to mid-income countries 1995–2017	Number of PPP contracts awarded per year	Government ideology: 1 = right-of-center; 2 = centrist and 3 = left-of-center Measure of political fragmentation (number of parties in government) Measure of political competition (number of parties in legislature) Years remaining in government mandate Dummy variable: 1 = election year and else = 0	Government ideology: positive, significant effect on number of PPP contracts (more left-of-center, more contracts) Measure of political fragmentation: positive, significant effect Measure of political competition: positive, significant effect Years remaining in government mandate: mostly insignificant effect (negative, significant in one model) Election year dummy variable: negative, significant effect (fewer PPP contracts in election year)
de la Higuera-Molina et al. (2021)	2274 Spanish municipalities with populations of 1000 or greater 2002–2014	Binary variable: = 1 if municipal service provided by PPP; 0 if not	Electoral cycle dummy variable: = 1 if pre-electoral years and = 0 if post-electoral years Government ideology dummy variables: = 1 if right-of-center with absolute majority and = 0 if left-of-center; with absolute majority	Electoral cycle dummy: negative, significant effect; PPPs more likely post-electoral years, less likely pre-electoral years Government ideology dummy: positive, significant effect; PPPs more likely with right-of-center absolute majority governments and less likely with left-of-center absolute majority governments

Conclusion

While public–private partnerships have only been in use for about three decades, many governments have embraced them as a means of delivering public infrastructure. However, an understanding of the principal–agent problems inherent in this form of contracting leads us to conclude that PPPs are unlikely to achieve higher levels of social welfare than traditional government procurement. While some in government are motivated to further the public interest, many politicians are also concerned with the maintenance of political power through re-election. A consideration of these political economy motives may explain why, despite the evidence of poor PPP performance, governments across the political spectrum continue to favor them.

Empirical studies of the performance of PPPs are appearing almost weekly. Our attempt to comprehensively review this literature is limited by this reality. However, with a few exceptions, these studies have weaknesses that limit their usefulness in assessing the overall social value of PPPs. These are (1) the absence of an appropriate explicit or implicitly discernable, normative criterion against which to assess the behavior or performance of PPPs, (2) the lack of a traditional procurement counterfactual against which to evaluate PPP performance, (3) a focus only on short-term impacts (while any assessment of PPP performance requires at least some focus on post-construction effects over a number of years) and (4) a narrow focus on government expenditure and the timing of infrastructure delivery, while ignoring or downplaying the impacts on other members of society. Any analysis that does not address the changes to net benefits of consumers, producers, employees and government does not reveal the aggregate effects on society.

If this critique of the current state of PPP performance assessment is accurate, we argue that we are, or should be, only at the beginning of appropriate evaluation of the performance of PPPs. Fortunately, as many PPP projects have now been operating for many years, in *medias res* and *ex post* analyses are becoming more feasible. However, our political economy analysis suggests that few governments and even fewer PPP proponents will be interested in sponsoring or conducting these analyses.

We argue that politicians prefer PPPs because (1) they change the time profile of costs and benefits of infrastructure, (2) they seemingly result in better 'on time and within budget' outcomes, (3) they channel benefits to aligned interest groups, (4) they make (higher) user fees more politically palatable and (5) they provide a wider ideological appeal to voters across the political spectrum and reduce political risk for elected officials by allowing blame shifting. The recent empirical literature which attempts to test some of these predictions and other political economy motives yields mixed results. While there is clearly much room for further research in this area, however, the studies to date show that political economy motives do matter for governments' decisions to adopt PPPs to deliver public infrastructure.

References

Acerete, B., Gasca, M., & Stafford, A. (2019). Two decades of DBFO roads in The UK and Spain: An evaluation of the financial performance. *Annals of Public and Cooperative Economics, 90*(2), 269–289.

Albalate, D., Bel, G., & Geddes, R. R. (2015). The determinants of contractual choice for private involvement in infrastructure projects. *Public Money and Management, 35*(1), 87–94.

Alonso, J. M., & Andrews, R. (2022). Can public-private innovation partnerships improve public services? Evidence from a synthetic control approach. *Public Administration Review*. https://doi.org/10.1111/puar.13514

Arrow, K., & Lind, R. (1970). Uncertainty and the evaluation of public investment decisions. *American Economic Review, 60*(3), 364–378.

Blanc-Brude, F. & O. Ismail. (2013). Who is Afraid of Construction Risk? Portfolio Construction with Infrastructure Debt. EDHEC-Risk Institute Working Paper, EDHEC Business School, Singapore.

Blanc-Brude, F., Goldsmith, H., & Välilä, T. (2009). A comparison of construction contract prices for traditionally procured roads and public-private partnerships. *Review of Industrial Organization, 35*(1–2), 9–40.

Boardman, A., Siemiatycki, M., & Vining, A. (2016). The theory and evidence concerning public-private partnerships in canada and elsewhere. SPP Research Paper 9(12). Available at SSRN: https://ssrn.com/abstract=2804683

Boardman, A., & Hellowell, M. (2017). A comparative analysis and evaluation of specialist PPP units' methodologies for conducting value for money appraisals. *Journal of Comparative Policy Analysis, 19*, 1–17.

Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2022). Standing in cost-benefit analysis: Where, who, what (Counts)? *Journal of Policy Analysis and Management., 41*(4), 1157–1176.

Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2018). *Cost-Benefit Analysis: Concepts and Practice* (5th ed.). Prentice Hall.

Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2020). Efficiency without apology: Consideration of the marginal excess tax burden and distributional impacts in benefit-cost analysis. *Journal of Benefit-Cost Analysis, 11*(3), 457–478.

Boardman, A., & Vining, A. (2010a). Assessing the Economic Worth of Public-Private Partnerships. In G. Hodge, C. Greve, & A. Boardman (Eds.), *International Handbook on Public-Private Partnerships* (pp. 159–186). Edward Elgar.

Boardman, A., & Vining, A. (2010b). P3s in North America: Renting the Money (in Canada), Selling the Roads (in the USA). In G. Hodge, C. Greve, & A. Boardman (Eds.), *International Handbook on Public-Private Partnerships* (pp. 354–398). Edward Elgar.

Boardman, A., & Vining, A. (2012). The political economy of public-private partnerships and analysis of their social value. *Annals of Public and Cooperative Economics, 83*(2), 117–141.

Borcherding, T., Ferris, S., & Garzini, A. (2004). The Growth of Real Government. In J. Backhaus & R. Wagner (Eds.), *Handbook of Public Choice* (pp. 77–108). Kluwer Academic.

Boyer, E., & Scheller, D. (2018). An examination of state-level public-private partnership adoption: Analyzing economic, political, and demand-related determinants of PPPs. *Public Works Management & Policy, 23*(1), 5–33.

Breton, A. (1996). *Competitive Governments*. Cambridge Books.

Breton, A., & Fraschini, A. (2007). Competitive governments, globalization, and equalization grants. *Public Finance Review, 35*(4), 463–479.

Buso, M., Marty, F., & Tran, P. (2017). Public-private partnerships from budget constraints: Looking for debt hiding? *International Journal of Industrial Organization, 51*, 56–84.

Casady, C., Flannery, D., Geddes, R., Palcic, D., & Reeves, E. (2019). Understanding PPP tendering periods in Canada: A duration analysis. *Public Performance & Management Review, 42*(6), 1259–1278.

Cavaliere, A., & Scabrosetti, S. (2008). Privatization and efficiency: From principals and agents to political economy. *Journal of Economic Surveys, 22*(4), 685–710.

Cepparulo, A., Eusepi, G., & Giuriato, L. (2020). Public Finances and Public Private Partnerships in the European Union (No. 103918). University Library of Munich, Germany. Available from: https://mpra.ub.uni-muenchen.de/103918/ Accessed August 24, 2022.

Cepparulo, A., Eusepi, G., & Giuriato, L. (2019). Public private partnership and fiscal illusion: A systematic review. *Journal of Infrastructure, Policy and Development, 3*(2), 288–309.

Cusumano, N., Siemiatycki, M., & Vecchi, V. (2022). The politicization of public-private partnerships following a mega-project disaster: The case of the morandi bridge collapse. *Journal of Economic Policy Reform, 25*(2), 173–189.

Dewatripont, M., & Legros, P. (2005). Public-private partnerships: Contract design and risk transfer. *EIB Papers, 10*(1), 120–145.

Dixit, A. (2002). Incentives and organizations in the public sector: An interpretative review. *Journal of Human Resources, 37*, 696–727.

Dollery, B., & Worthington, A. (1996). The empirical analysis of fiscal illusion. *Journal of Economic Surveys, 10*(3), 261–297.

Downs, A. (1957). *An Economic Theory of Democracy*. Harper.

Edwards, P., Shaoul, J., Stafford, A., & Arblaster, L. (2004). *Evaluating the Operation of PFI in Roads and Hospitals*. Certified Accountants Educational Trust.
Engel, E., Fischer, R., & Galetovic, A. (2014). Risk and Public-Private Partnerships. *Cesifo DICE Report, 12*(3), 3–7.
European Court of Auditors (ECA). (2018). Public private partnerships in the EU: Widespread shortcomings and limited benefits, 9. Luxembourg: Publications Office of the European Union. Available from: https://www.eca.europa.eu/Lists/ECADocuments/SR18_09/SR_PPP_EN.pdf
Fairclough, N. (2003). *Analysing Discourse: Textual Analysis for Social Research*. Psychology Press.
Fernandes, C., Ferreira, M., & Moura, F. (2016). PPPs—true financial costs and hidden returns. *Transport Reviews, 36*(2), 207–227.
Flyvbjerg, B., Bruzelius, N., & Rothengatter, W. (2003). *Megaprojects and Risk: An Anatomy of Ambition*. Cambridge University Press.
Gilson, R., & Mnookin, R. (1989). Coming of age in a corporate law firm: The economics of associate career patterns. *Stanford Law Review, 41*(3), 567–595.
Globerman, S., & Vining, A. (1996). A framework for evaluating the government contracting-out decision with an application to information technology. *Public Administration Review, 56*(6), 577–586.
Grant, S., & Quiggin, J. (2003). Public investment and the risk premium for equity. *Economica, 70*, 1–18.
Hellowell, M. (2010). The UK's Private Finance Initiative: History, Evaluation, Prospects. In G. Hodge, C. Greve, & A. Boardman (Eds.), *International Handbook on Public-Private Partnerships* (pp. 307–332). Edward Elgar.
Hellowell, M., & Vecchi, V. (2015). The non-incremental road to disaster? A comparative policy analysis of agency problems in the commissioning of infrastructure projects in the UK and Italy. *Journal of Comparative Policy Analysis: Research and Practice, 17*(5), 519–532.
Heyndels, B., & Smolders, C. (1995). Tax complexity and fiscal illusion. *Public Choice, 85*(1–2), 127–141.
de la Higuera-Molina, E., Esteve, M., Plata-Díaz, A., & Zafra-Gómez, J. (2021). The political hourglass: Opportunistic behavior in local government policy decisions. *International Public Management Journal*. https://doi.org/10.1080/10967494.2021.1905117
Hodge, G., & Greve, C. (2009). PPPs: The passage of time permits a sober reflection. *Economic Affairs, 29*(1), 33–39.
Hodge, G., & Greve, C. (2017). Public-private partnership performance: A contemporary review. *Public Works Management & Policy, 22*(1), 55–78.
Hodge, G., & Greve, C. (2021). What can public administration scholars learn from the economics controversies in public-private partnerships? *Asia Pacific Journal of Public Administration, 43*(4), 219–235. https://doi.org/10.1002/pam.22397
Hussain, S., & Siemiatycki, M. (2018). Rethinking the role of private capital in infrastructure PPPs: The experience of Ontario, Canada. *Public Management Review, 20*(8), 1122–1144.
Iossa, E., & Martimort, D. (2015). The simple microeconomics of public-private partnerships. *Journal of Public Economic Theory, 17*(1), 4–48.
John, P. (2018). Theories of policy change and variation reconsidered: A prospectus for the political economy of public policy. *Policy Sciences, 51*(1), 1–16.
Jones, B. D. (2003). Bounded rationality and political science: lessons from public administration and public policy. *Journal of Public Administration Research and Theory, 13*(4), 395–412.
Jones, L. P., Tandon, P., & Vogelsang, I. (1990). *Selling Public Enterprises: A Cost-Benefit Methodology*. MIT Press.
Joulfaian, D., & Marlow, M. (1991). The relationship between on-budget and off-budget government. *Economic Letters, 35*(3), 307–310.
Kiser, E. (1999). Comparing varieties of agency theory in economics, political science, and sociology: An illustration from state policy implementation. *Sociological Theory, 17*(2), 146–170.
Klein, M. (1997). The risk premium for evaluating public projects. *Oxford Review of Economic Policy, 13*(4), 29–42.
Kopańska, A., & Asinski, R. (2019). Fiscal and political determinants of local government involvement in public-private partnership (PPP). *Local Government Studies, 45*(6), 957–976.
Koppenjan, J., Klijn, E., Verweij, S., Duijn, M., van Meerkerk, I., Metselaar, S., & Warsen, R. (2022). The performance of public-private partnerships: An evaluation of 15 Years DBFM in Dutch infrastructure governance. *Public Performance & Management Review, 45*(5), 998–1028.
Kwoka, J. (2005). The comparative advantage of public ownership: Evidence from U.S. utilities. *Canadian Journal of Economics, 38*(2), 622–640.
Laffont, J., & Martimort, D. (2002). *The Theory of Incentives: The Principal Agent Problem*. Princeton University Press.

Laffont, J., & Tirole, J. (1991). Privatization and incentives. *Journal of Law, Economics, and Organization, 7*, 84–105.
Macey, J. (2003). Regulatory globalization as a response to regulatory competition. *Emory Law Journal, 52*, 1353.
Makovšek, D., & Moszoro, M. (2018). Risk pricing inefficiency in public-private partnerships. *Transport Reviews, 38*(3), 298–321.
Markowitz, H. (1952). Portfolio selection. *The Journal of Finance, 7*(1), 77–91.
Marlow, M., & Joulfaian, D. (1989). The determinants of off-budget activity of state and local governments. *Public Choice, 63*(2), 113–123.
Marra, A. (2007). Internal regulation by mixed enterprises: The case of the Italian water sector. *Annals of Public and Cooperative Economics, 78*(2), 245–275.
Mazzola, F., Cusimano, A., Di Giacomo, G., & Epifanio, R. (2019). Local and territorial determinants in the realization of public–private–partnerships: An empirical analysis for Italian provinces. *European Planning Studies, 27*(11), 2266–2287.
Moore, M., Boardman, A., & Vining, A. (2017a). Risk in public sector project appraisal–it mostly does not matter! *Public Works Management & Policy, 22*(4), 301–321.
Moore, M., Boardman, A., & Vining, A. (2017b). Analyzing risk in PPP provision of utility services: A social welfare perspective. *Utilities Policy, 48*, 210–218.
Mota, J., & Moreira, A. (2015). The importance of non-financial determinants on public-private partnerships in Europe. *International Journal of Project Management, 33*(7), 1563–1575.
National Audit Office. (2012). *Equity Investment in Privately Financed Projects*. The Stationery Office.
O'Shea, C., Palcic, D., & Reeves, E. (2019). Comparing PPP with traditional procurement: The case of schools procurement in Ireland. *Annals of Public and Cooperative Economics, 90*(2), 245–267.
OECD. (2015). *Infrastructure Financing Instruments and Incentives*. OECD.
Olsen, M. (1965). *The Logic of Collective Action*. Harvard University Press.
Parker, D., Dressel, U., Chevers, D., & Zeppetella, L. (2018). Agency theory perspective on public-partnerships: International development project. *International Journal of Productivity and Performance Management, 67*(2), 239–259.
Peña-Miguel, N., & Cuadrado-Ballesteros, B. (2021). Explaining public-private partnership projects through political factors: An assessment of developing countries. *Political Studies*. https://doi.org/10.1177/00323217211040382
Petersen, O. (2019). Evaluating the costs, quality, and value for money of infrastructure public-private partnerships: A systematic literature review. *Annals of Public and Cooperative Economics, 90*(2), 227–244.
Reeves, E., Palcic, D., Flannery, D., & Geddes, R. (2017). The determinants of tendering periods for PPP procurement in the UK: An empirical analysis. *Applied Economics, 49*(11), 1071–1082.
Ross, S. (1973). The economic theory of agency: The principal's problem. *The American Economic Review, 63*(2), 134–139.
Ross, T., & Yan, J. (2015). Comparing public-private partnerships and traditional public procurement: Efficiency versus flexibility. *Journal of Comparative Policy Analysis: Research and Practice, 17*(5), 448–466.
Rouhani, O., Geddes, R., Gao, H., & Bel, G. (2016). Social welfare analysis of investment public-private partnership approaches for transportation projects. *Transportation Research Part a: Policy and Practice, 88*, 86–103.
Sappington, D., & Stiglitz, J. (1987). Privatization, information and incentives. *Journal of Policy Analysis and Management, 6*(4), 567–585.
Sarmento, J., & Renneboog, L. (2021). Renegotiating public-private partnerships. *Journal of Multinational Financial Management, 59*, 100661. https://doi.org/10.1016/j.mulfin.2020.100661
Shapiro, C., & Willig, R. (1990). Economic Rationales for the Scope of Privatization. In E. Suleiman & J. Waterbury (Eds.), *The Political Economy of Public Sector Reform and Privatization* (pp. 55–87). Westview Press.
Skach, C. (2007). The "Newest" separation of powers: Semipresidentialism. *International Journal of Constitutional Law, 5*(1), 93–121.
Solheim-Kile, E., Laedre, O., & Lohne, J. (2019). Public-private partnerships: Agency costs in the privatization of social infrastructure financing. *Project Management Journal, 50*(2), 144–160.
Soomro, M., Soomro, S., & Memon, A. (2016). Process and limitations of value for money analysis tests for infrastructure public private partnerships. *International Journal of Emerging Technology and Innovative Engineering, 2*, 380–386.
Vecchi, V., & Hellowell, M. (2013). Securing a better deal from investors in public infrastructure projects. *Public Management Review, 15*(1), 109–129.

Vecchi, V., Hellowell, M., & Gatti, S. (2013). Does the private sector receive an excessive return from investments in health care infrastructure projects? Evidence from the UK. *Health Policy, 110*(2–3), 243–270.
Verweij, S., & van Meerkerk, I. (2021). Do public-private partnerships achieve better time and cost performance than regular contracts? *Public Money & Management, 41*(4), 286–295.
Vining, A., Boardman, A., & Poschmann, F. (2005). Public-private partnerships in the U.S. and Canada: There are no 'Free Lunches.' *Journal of Comparative Policy Analysis, 7*(3), 199–220.
Vining, A., & Boardman, A. (1992). Ownership versus competition: The causes of government enterprise inefficiency. *Public Choice, 73*(2), 205–239.
Vining, A., & Boardman, A. (2008). Public-private partnerships in Canada: Theory and evidence. *Canadian Public Administration, 51*(1), 9–44.
Vining, A., & Boardman, A. (2014). Self-interest springs eternal: Political economy reasons why public-private partnerships do not work as well as expected. *Cesifo DICE Report, 12*(3), 17–23.
Vining, A., Boardman, A., & Moore, M. (2014). The theory and evidence pertaining to local government mixed enterprises. *Annals of Public and Cooperative Economics, 85*, 53–86.
Vining, A., Moore, M., & Laurin, C. (2022). Listed public-private enterprises: Stock market information, agency costs and productive efficiency outcomes. *International Journal of Public Sector Management, 35*(4), 388–409.
Williamson, O. (1985). *The Economic Institutions of Capitalism*. The Free Press.
Wilson, J. (1989). *Bureaucracy: What Government Agencies Do and Why They Do It*. Basic Books.
Wiseman, R., Cuevas-Rodríguez, G., & Gomez-Mejia, L. (2012). Towards a social theory of agency. *Journal of Management Studies, 49*(1), 202–222.
Wittman, D. (1989). Why democracies produce efficient results. *The Journal of Political Economy, 97*(6), 1395–1424.
Zhao, J., Greenwood, D., Thurairajah, N., Liu, H., & Haigh, R. (2022). Value for money in transport infrastructure investment: An enhanced model for better procurement decisions. *Transport Policy, 118*, 68–78.
Zwalf, S. (2021). Managing goal conflict. The case of agency theory in the policy settings for public-private partnerships; A perspective on citizen and government interests. *Annals of Public and Cooperative Economics*. https://doi.org/10.1111/apce.12355
Zwalf, S., Hodge, G., & Alam, Q. (2017). Choose your own adventure: Finding a suitable discount rate for evaluating value for money in public-private partnership proposals. *Australian Journal of Public Administration, 76*(3), 301–315.