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# Public private partnerships in the provision of tolled roads: Shared value creation, trust and control

Demi Chung[a], David A. Hensher[b,*]

[a] School of Accounting, Business School, University of New South Wales, Sydney, Australia
[b] The Institute of Transport and Logistics Studies, The University of Sydney Business School, Australia

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ABSTRACT

Public private partnerships are rationalized on shared value creation by combining public sector management and oversight with private sector resources for a direct provision of a public good or service. Yet little is known about what are the sources of value and the effects of contract control mechanisms for value appropriation. This paper explores this issue from the perspectives of both public sector agencies and private sector firms involved in the provision of toll roads. Using data collected from a stated choice experiment on toll road participation to obtain a composite measure of resource values, we find that resource values have little influence on decisions to form a partnership, while partner's (un)trustworthiness and social activism by external stakeholders have a discernible effect on their decisions. Mitigating controls moderate these influences. An internal coordination framework within the public organization and the enactment of institutional policy can help to reap the most from the combined resources for shared value creation, particularly when trust is yet to be established during the contracting phase.

## 1. Introduction

Public-Private-Partnerships (PPPs) are an innovative way of inter-sector collaboration that combine public sector management and oversight with private sector resources, in terms of skills and competencies for the direct provision of a public good or service, such as transportation, health, education, and penitentiary (Kivleniece and Quelin, 2012). Typically, a private firm designs, builds, finances and operates a significant capital asset, e.g., a road, a hospital, a school or a prison, and must ensure these assets are available for providing related services to an acceptable standard (Chung, 2009). The public agency, in turn, engages primarily in coordination and enforcement functions to ensure the behaviour of the private firm and the output of the PPP are aligned with public policy objectives (Rangan et al., 2006; Kivleniece and Quelin, 2012). Value is created and captured primarily through two means: (i) a risk sharing strategy to allocate risks to partners that are best aligned with the resources of the respective partner(s); and (ii) the alignment of control mechanisms with transaction attributes (Infrastructure Australia, 2008; HM Treasury, 2012; Byoun and Xu, 2014).

In spite of their proliferation in recent decades, the jury is still out on who contributes to what and how benefits are sought and safeguarded by respective partners. In undertaking our research, focussed on toll roads, we integrate theories of value creation and transaction cost economics (TCE), as defined below. Our first objective is to investigate the sources of value, in terms of the competencies and skills in risk management possessed by one partner, that explain the PPP participation of the other partner. To achieve this aim, we use a stated choice survey (see Chung and Hensher, 2015a) to construct a composite measure of value creation (VC)

* Corresponding author.
*E-mail addresses:* Demi.chung@unsw.edu.au (D. Chung), David.Hensher@sydney.edu.au (D.A. Hensher).

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based on the risks that most concern partners. We then apply ordered logit models to investigate the relationship between our composite measures and the PPP decisions of the partners. The results suggest that while the expectation of shared value creation does not hold up in our data, PPP participation is strongly affected by the (un)trustworthiness of the partners and by partners' concerns of social activism.

Decisions to collaborate, driven primarily by access to specialized resources, are not independent from opportunism-based considerations motivated by transaction cost economics (TCE) (Verwaal et al., 2009). Our second aim is to examine the effects of control mechanisms on the PPP decisions of partners. PPP projects are only discrete sections of the service network for which a public agency is accountable (Chung, 2016). In a PPP relationship, the public sector partner primarily focuses on: (i) stimulating cooperation to ensure the private sector operators make adequate contributions to network performance (Marques et al., 2011); and (ii) coping with social concerns and pressures. For these purposes, control mechanisms deployed by the public agency are not only aimed at ensuring that the actions of network members are consistent with the goals of the network, but also conform to values and norms of proper conduct. Our results show that adding the moderating influence of contract controls to the value creation perspective better explains PPP participation of partners.

While theoretical lenses of VC and TCE have been applied to explain the rationale of PPPs (Rangan et al., 2006; Kivleniece and Quelin, 2012; Rufín and Rivera-Santos, 2012), these studies only adopt the perspective of a single partner. Examining the perspectives of both partners, this paper reconciles the two different theoretical views to show that joint value maximization in public-private sector collaboration extends beyond the VC realm to the inclusion of partnership workings to manage risks that appear to fall outside the competency domain of either partner. Studies of TCE controls often only examine what type of controls will likely be used in interfirm collaborations and neglect the effect that these controls have on transforming the decision to participate in inter-organizational exchanges. This study takes one of the first steps in testing the effectiveness of these controls in transforming the resource-driven PPP participation outcome.

The empirical setting is based on the PPP concession for road infrastructure. In these concessions, the private sector partner retains a high level of managerial autonomy from daily management activities of the road up to customer service and billing, and derives payments from the end users. The public sector partner is responsible for managing the neighbouring road network, environmental planning, and community engagement. We speculate, from the VC perspective, that the sources of value that partners seek in PPPs are the differential capabilities in risk management of the other partner. Moreover, due to the long duration of PPPs and the strong interdependence between partners, PPP participation is strongly dependent on partner trustworthiness. Value appropriation enhancement through aligning control mechanisms with the transaction hazards emphasized by TCE, further reinforces these propositions. In this light, TCE complements value creation, and together they jointly support the economic and social rationale of PPPs. We argue, that TCE controls are not substitutes for joint efforts in managing hazards arising from social activism that seem to fall outside the competence domain of either partner. We call for future research to examine controls that can nurture the social interactions between partners to help forge trust, which in turn will maximise value creation for the general public.

The paper proceeds as follows. The next section develops hypotheses under the integrated framework of VC and TCE. Section three describes the data collected in a global survey. Section four reports the results and the final section concludes and discusses opportunities for future research.

## 2. Theory and hypothesis development

### *2.1. Value creation effects*

The theory of value creation aspires to explain how interorganizational transactions are motivated by value creation through combining the unique inimitable assets of exchange partners with complementary skills (Borys and Jemison, 1989; Zajac and Olsen, 1993). This form of economic organization benefits from sharing risks and leveraging strategic resources including the core competence of the partners (Brouthers et al., 2008). PPPs enable the public sector to exploit the competence of the private sector in terms of its discipline and skills in investment, innovation and risk management, thereby creating value from a public policy perspective (HM Treasury, 2012). The private sector generally has greater economic incentives and efficiencies in organizing the financial capital to fund the investment, and has a stronger commercial mindset in managing market risks (Chung et al., 2010; Kivleniece and Quelin, 2012). We hypothesize that having access to the expertise of the private sector in these risk domains is the driving force for the public sector to enter into PPPs.

**Hypothesis 1a.** The opportunity to exploit the resources in the private sector in managing market risks is positively related to the public agency's PPP decision.

A public sector authority is endowed with legitimacy conferred by citizens. The legitimacy to rule places the public sector in a superior position to internalize sovereign risk. The legitimacy to enforce commands and to discipline unlawful behaviours positions the public sector as a coordinator and enforcer by default (Rangan et al., 2006; Marques et al., 2011) to manage risks, such as road network risk, at the strategic planning level. Legitimacy comes with accountability (Chung, 2016) that demands the public sector to be vigilant in project planning and in adherence to contract specifications. PPPs are thus more advantageous in minimizing project specification risk compared with other forms of infrastructure procurement (Reynaers, 2014). These findings suggest that in exchange for its own resources in managing market risks, a private firm values the opportunity of exploiting the legitimacy advantages of the public sector in managing uncertainties that are largely unaffected by actions of the private firm, and therefore will favour partnerships with the public sector.