Transportation Research Part A 111 (2018) 174–186

Contents lists available at ScienceDirect

Transportation Research Part A

journal homepage: www.elsevier.com/locate/tra

Are public private partnerships that rigid? And why? Evidence from price provisions in French toll road concession contracts

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ARTICLE INFO

Keywords:
Transport concession contracts
Contractual design
Public private partnerships
Price provisions
Toll adjustments
Incomplete contract

ABSTRACT

Transport concession contracts are commonly said to be standardized and too rigid. They would not allow public authorities to adapt them to evolving context and circumstances. This paper aims at challenging this view and, more particularly, the view that contractual rigidity for transport concessions is exogenous. Using a transaction cost framework, we disentangle between three main determinants of contractual rigidity: traffic uncertainty; connivance between contracting parties; quality of the institutional environment. Using an original and unique database of mostly French toll road concession contracts, we observe a great variety of provisions for toll adjustment. While our results point out a positive impact of future traffic uncertainty on the propensity to resort to flexible contracts, they also highlight that higher trust between the contracting parties and more reliable institutional environments foster contractual flexibility. These results and the associated policy implications can be helpful in implementing the conditions under which the public and private partners are able to cope with the intrinsic incompleteness of these contracts.

1. Introduction

We know that infrastructure levels and quality significantly matter for economic growth and poverty alleviation. The "infrastructure gap" in Europe (European Economic Commission's statement, July 2015)[1] has been recognized for many years and its negative impact on economic growth, job creation and social cohesion is felt across every country within the region. Within infrastructure services, the transport sector, and above all the roads subsector, is one of the most concerned by the involvement of the private sector: public private partnerships (PPPs hereafter) in most of European countries are dominated by road projects[2] and take the form of concession contracts. In these contracts, concessionaires undertake the design, building, financing and operation of the relevant facility and their main source of revenue are the tolls that they can charge to users for the whole length of the concession. They are very long-term contracts (often over 30 years) involving large upfront specific investments.

These features make them particularly prone to opportunistic behaviors and lead contracting parties to design rigid contracts (Williamson, 1985, Spiller, 2013). However, there has been some negative feedback, following experiences in Latin American (Guasch, 2004; Estache, 2006) and in developed countries (Chong et al., 2006; Engel et al., 2006). Significant contractual costs, together with difficulties in designing and adapting contractual agreements during the contract between public authorities and

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[1] See http://ec.europa.eu/transport/themes/infrastructure/news/2015–07-22-cef-delegation-agreement-signed_en.htm.1.

[2] Figures from Public Works Financing (2013) highlight that, over 2010–2012, the road sector accounted for more than 70 percent of the total amount of PPP projects developed in Europe.

https://doi.org/10.1016/j.tra.2018.02.011
Received 29 March 2016; Received in revised form 14 February 2018; Accepted 19 February 2018

private operators, are often posited to explain this mixed scenario. In the same vein, it has often been noted that many agreements are standardized, and that "A key concern with long-term PPP contracts is the level of flexibility that they offer to authorities to make changes, either to the use of assets, or to the level and type of services offered" (PriceWaterhouseCoopers, 2005).

This paper challenges the view that transport concession contracts are standardized and too rigid. In particular, toll road concession contracts are characterized by a degree of uncertainty that is much greater than in most ordinary contracts. Traffic forecasts are notoriously imprecise, making toll road concessions very risky (Trujillo et al., 2002; Flyvbjerg et al., 2003; Vassallo, 2006; Athias and Nunez, 2008, 2015). This aspect of toll road concession contracts should call for contractual flexibility so as to adapt the contract once uncertainty unfolds, even though contractual flexibility could favor the occurrence of opportunistic behaviors. Thus, the design of such contracts is affected by the challenge of including the appropriate level of flexibility: too much, and undesirable opportunistic renegotiations are likely to occur; too little, and opportunities for welfare-enhancing adjustments will be lost. In this paper, we estimate whether the uncertainty associated with toll road concessions, but also whether the contracting parties' characteristics (for example connivance between the contracting parties) and the quality of the institutional environment characterizing the country in which the project is developed (for example government's capacity to commit to enforce contracts), are balanced against the standard fear of occurrence of opportunistic behaviors associated with long-term incomplete contracts involving specific investments.

Using an original database, we observe a great variety of provisions for toll adjustment, from extremely rigid (such as firm-fixed price provisions in which tolls are fixed for the entire length of the concession) to very flexible ones (for example contracts that contain adjustment provisions that determine *ex ante* any periodic *ex post* negotiations of the initial toll adjustment provision). Such variety came as a surprise for contracts that are commonly considered as being too rigid. Our results indicate that this diversity can be largely related to economic incentives related to exogenous factors. In particular, the flexibility of price provision increases with the uncertainty associated with future demand; this suggests that when uncertainty is high, parties prefer to sign flexible contracts and adapt their future behavior *ex post* through bilateral negotiation rather than anticipating it *ex ante* in the contractual provisions. In addition, we show that trust between contracting parties matters in the design of toll road concession contracts. In particular, those contracts devised with left-leaning procuring authorities, which are generally more skeptical than right-leaning ones about the delegation of public services to private operators, are more likely to be rigid. In the same vein, we find that repeated interactions between partners foster contractual flexibility. These findings strengthen the importance of reputation and trust in the design of PPP contracts. Finally, while the role of institutions on contractual choices is often discussed but rarely tested in the literature, our results suggest that contractual choices are affected by the quality of the relevant regulatory regime: the better the regulatory regime, the lower the probability of successful opportunistic behavior, the more flexible the contracts.

Our paper leads to a set of managerial and policy recommendations for contracting officers. If infrastructure contracts usually involve specific investments, rigidifying contracts is not an efficient way to secure such investments. As soon as uncertainty around the transaction is important, our results suggest that crafting more flexible contracts is more efficient. Furthermore, the institutional framework appears to be important too, as more secure institutional frameworks allow contracting parties to design more flexible contracts. This might explain why we observe in some countries the creation of independent regulatory agencies in charge of the regulation of toll road concession contracts.[3]. Another policy implication related to our results concerns the preferred bidder phase during the award procedure. While this procedure is nowadays questioned because of transparency problems, it enables the public authority to take into account the reputation of the preferred private operator and adjust accordingly the contractual flexibility. Overall, these policy recommendations might help to implement the conditions under which the public and private partners are able to cope with the intrinsic incompleteness of toll road concession contracts, and more generally of public private partnerships.

The remainder of this paper is organized as follows: In Section 2, we describe the peculiarities of transport concession contracts that influence their contractual design, and state our present set of theoretical propositions. In Section 3, we describe the contractual toll adjustment processes observed in our data set. In Section 4, we present the explanatory variables. Section 5 describes our empirical methodology, together with the econometric results obtained. Finally, in Section 6, we present our conclusions.

2. Economic issues in contractual design of transport concession contracts

2.1. Peculiarities of transport concession contracts

To develop their infrastructure, public authorities (central or local authorities) may decide to resort either to traditional procurement contracts or to PPPs. The key difference between PPPs and traditional procurement contracts is that under PPPs, the private sector delivers not only assets but also services for the duration of the contract. Therefore, they are responsible for the delivery of assets, as well as for the overall project management and its implementation, and its successful operation until the end of the contract. PPPs are thus complex long-term projects that involve non-verifiable investments, usually for the delivery of complex services, or at least services for which the degree of uncertainty is high. As a consequence, contractually unanticipated adaptations of the service provision very often occur *after* the contract is signed. These observations suggest that the PPP problem is primarily one of *ex post* adaptations.

The incompleteness of PPP contracts, as described above, also leads to an important strand of literature that covers the issue of

[3] For example, the Macron Law, voted on July 9th 2015 in France, extends the objectives of the ARAF agency (independent regulatory agency regulating transport by rail) to the control of highways concession contracts (ARAF will then change its name to ARAFER). Related to this topic, see Reuters, December 16, 2014: http://www.reuters.com/article/2014/12/16/us-france-tollroads-idUSKBN0JU0W5201412163.