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The hybrid model for economic regulation of water utilities: Mission impossible?

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ABSTRACT

The two main approaches to economic regulation—regulation by contract and regulation by agency—may both encounter significant challenges in regulating public-private partnerships when institutions are weak. As a result, the hybrid model, a mixture of elements from both systems, is widespread. This paper considers hybrid regulation as a distinct regulatory model. A case study of water services regulation in Manila from 1997 to 2015 suggests that hybrid regulation is both possible and compelling. Yet, while it might help to expedite private-sector involvement initially, fundamental tensions between the two underlying approaches may undermine PPP sustainability if not addressed appropriately at the outset.

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1. Introduction

Economic regulation plays a vital role in ensuring that the provision of water services under public-private partnership (PPP) arrangements is both welfare-improving and sustainable (Abdala, 2000; Andres et al., 2007; Cook, 1999; Devkar et al., 2013; Wallsten, 2002). The two main models of regulation that governments can choose from are "regulation by contract" (*the contract model*) and "regulation by agency" (*the agency model*). Under the *contract model* prices of water services and service obligations for the utility are set out in a formal agreement that takes the form of a legal contract, while under the *agency model* it is the function of a regulatory agency to set prices and obligations following procedures specified in primary law.

Under the right institutional conditions, either model can contribute to the achievement of key policy objectives, like balancing the interests of the consumer and the firm, providing incentives for efficiency improvement, and ensuring the financial sustainability of the sector. In developed countries where institutional environments are stable and accountable, the choice between the two models would be influenced by their fit with legal traditions, ideological preferences, or the political environment, rather than the inherent superiority of one model over the other (Spiller, 1995).

In practice, both systems have faced major practical problems even in developed country environments (Crew and Parker, 2006; Lodge and Stern, 2014). These problems are considerably more severe in the context of developing countries where key institutional conditions for economic regulation—political stability, the rule of law, etc.—are absent (Alexander, 2014; Auriol and Picard, 2009; Gassner and Pushak, 2014; Laffont, 2005).

As a result, a *hybrid model*, a mixture of elements from both regulatory models, has increasingly become the model of choice in developing countries for regulating private providers of water, electricity, and other utilities (Eberhard, 2007) and is also widespread in the water sector in developed countries, including in Italy (Massarutto and Ermano, 2013) and Portugal (Marques and Berg, 2011). There are numerous variants of the hybrid model, but in general they involve a combination of a formal legal contract and an autonomous regulatory agency. The logic of the hybrid appears quite compelling—the existence of the contract reduces opportunistic behavior and the presence of the regulatory agency provides for the discretion necessary to deal with problems of contract incompleteness but the question remains whether this model is coherent and sustainable over the long-term.

In practice, most water concessions implemented during the 1990s adopted some form of hybrid regulation. Yet, despite its popularity and widespread application, systematic analysis of the

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hybrid model has been rare; it has often been treated as a special form of the *contract model* or an extension of the *agency model*. As a result, the nature of the *hybrid model*, critical inconsistencies embedded in such a model, and the challenges in implementing this model have not been studied closely. In this paper, we approach hybrid regulation as a distinct model and consider its advantages and disadvantages in comparison to other models of regulation.

The evolution of the regulatory system for water concessions in Manila offers a suitable opportunity to examine both the imperatives and challenges of the *hybrid model*. Awarded in 1997, the Manila water concessions have lasted for over 17 years, during which time the regulatory system has gone through several major changes. Key challenges in implementing the *hybrid model* under changing external conditions have been manifested clearly, making it possible to generalize our findings to a broader context. The presence of two concessions in Manila regulated by the same contract and agency allows us to control to some extent for specificities related to the firm and some aspects of the operating environment when we examine the performance of the regulatory regime.

Our case study suggests that, while the arguments for the adoption of the *hybrid model* appear sound and there is evidence that the *hybrid model* may help to expedite private-sector investment in the sector in weaker institutional environments, fundamental tensions between the two regulatory mechanisms, if not dealt with appropriately from the beginning, may potentially undermine the sustainability of PPP arrangements.

First of all, the use of a *hybrid model* introduces more stakeholders than under either *contract* or *agency models*. The proliferation of actors with competing claims may make it more difficult to negotiate compromises in changing external conditions.

Secondly, there are fundamental inconsistencies between the principles underlying *contract* and *agency models*. The main strength of the *contract model* is the binding constraint imposed by non-discretionary terms in the legal contract, while the main strength of the *agency model* is the independence and technical expertise of the discretionary regulator, which can lead to opposing outcomes.

Lastly, the *hybrid model* may be inherently dynamic. The initial balance struck between the contract and agency to regulate a particular PPP arrangement will be shaped by the characteristics of the parties and their operating environment. In a long-term PPP, there are likely to be significant changes in the capacities of the parties over time as well as in the external environment, which may alter the negotiating strength of the different stakeholders. Thus, adjustments in the relative strength of the two mechanisms within the *hybrid model* may be inevitable over time.

The paper focuses on economic regulation concerning tariff- and objective-setting functions. While regulators in the water sector may play additional roles in customer engagement, consumer protection, advocacy and information gathering and dissemination, licensing and setting technical standards (OECD, 2015), these functions are not assigned to a public agency in all jurisdictions, or may be allocated to a number of different government agencies. Perhaps even more importantly, considerations for these regulatory functions differ markedly from those for economic regulation.

The contribution of this paper is therefore to delineate hybrid regulation as a distinct model for economic regulation of water utilities, showing how it is both more valuable and more problematic than it may appear at first glance. In addition, the lens of hybrid economic regulation may contribute to our understanding of both the sudden expansion and retreat of large-scale PPPs in the water sector since the 1990s. This paper also points to ways in which economic regulation in developing countries might be made more effective and sustainable through the design of *hybrid models* that address inconsistencies upfront and take into account the development of regulatory capacity over time.

2. The hybrid model: rationale and potential pitfalls

The literature on the two main models of economic regulation is extensive. Under the *contract model*, the discretion of decision-makers is constrained by specifying the procedure for adjusting tariffs, such as indexing, automatic pass-through, or case-by-case determinations, within the contract document (Bakovic et al., 2003). In theory, the auctioning of incentive contracts obviates the need for a regulatory agency (Demsetz, 1968; Laffont and Tirole, 1986).

The key challenges for the *contract model* are contract incompleteness (Hart and Moore, 1988), opportunistic renegotiation and time inconsistency (Williamson, 1979) and accountability to the public (Ménard, 2011; Spiller, 2008). If these issues are not addressed, then the potential for contracts to deliver optimal welfare outcomes are undermined. While these challenges are not unique to developing countries, lack of transparency, low governance capacity, weak enforcement mechanisms, and the high cost of public funds greatly amplify the difficulties, both in theory and in practice (Laffont, 2005). The very high rates of contract negotiations found in developing countries provide evidence of this (Guasch, 2004).

Under the *agency model*, on the other hand, pricing decisions are made at the discretion of autonomous regulators to balance the interests of service providers, consumers, governments, and sometimes other key stakeholders, within constraints on principles and processes defined in law. In theory, the separation of the regulatory authority from other institutions of government would ensure that their decisions are not unduly influenced by the demands or interests of any particular group of stakeholders and they can overcome time inconsistency problems (Levine et al., 2005).

The key risks in the *agency model* are poor decisions as a result of weak regulatory capacity and the potential for regulatory "capture" by the regulated industry or by third parties (Laffont and Tirole, 1991; Moszoro and Spiller, 2012; Peltzman, 1976; Posner, 1974; Stigler, 1971). Regulatory capture by the industry is an issue of concern for the public interest, as it implies that efficiency gains benefit only the firm and are not shared with the consumer. Regulatory capture by consumers, however, may undermine the financial sustainability of the arrangement and force its termination.

As both models can meet regulatory objectives a priori, variation between countries in the models adopted may be explained by the characteristics of the overall institutional environment. Some authors emphasize the distinction between presidential and parliamentary governance systems, the degree of regime stability, or constraints on executive power (Henisz, 2002; Henisz and Zelner, 2001; Levy and Spiller, 1994). Others focus on the differences between legal traditions, notably common law systems, where regulation by agency is thought to be more suitable, and civil and administrative systems, where regulation by contract is a better fit (Shugart, 1998).

While theoretical and empirical analysis of economic regulation has developed in the context of the industrialized countries and the literature has tended to assume that the institutions of rule of law, separation of powers, regime stability and an independent and competent judiciary are in place, this is far from the reality of most developing countries (Laffont, 2005).

First of all, *technical capacity* is typically much lower in developing countries. For example, the regulatory agency or government

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