

Rocky Road of Urban Transportation Contracts

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Abstract: The provision of urban transport services entails several challenges. Past research has been concerned with economic (e.g., tariff setting and financial sustainability), technological (e.g., different modes or energy sources), social (e.g., the impact of public transportation on social cohesion), and even institutional or policy issues (e.g., privatization). However, few studies focus on governance issues or on the scrutiny of the contractual relations between the competent authorities (local governments) and the operators. The current paper attempts to address this gap in the literature. The objective is to assess the rationale behind each governance structure and the quality of contracting procedures. To accomplish this, the authors consider the Portuguese regulatory framework and analyze six contracts signed between the local governments and the operators, corresponding to three different governance models: municipal companies, mixed companies, and concessionary companies. All cases present serious governance problems, especially regarding the initial decision-making process, the access to the market of private investors, and the clear definition of objectives monitored through output-oriented indicators. The case-study analysis shows that municipal companies are prone to being politically steered, and the complex web of contracts of mixed companies fails to protect the public interest. Although the contract design lacks development, in concessions the conflicts of interest are attenuated and the roles of the public and private partners are better understood. DOI: [10.1061/\(ASCE\)ME.1943-5479.0000224](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000224). © 2014 American Society of Civil Engineers.

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Introduction

Due to the asset specificity, the high investments in infrastructure, and the various sources of uncertainty, private sector participation in urban transportation is challenging. The public and private partners enter in a contractual relationship with all the problems of bilateral monopolies (Crocker and Masten 1996). This mutual dependence is difficult to handle especially if the services are traditionally unprofitable, which is common in urban transportation (Gwilliam 2002). To create an attractive alternative to personal transport (to avoid traffic congestion and reduce environmental impacts) and an affordable transport solution (to promote social cohesion), transport utilities have to maintain demanding quality standards (e.g., frequency, punctuality, territorial coverage, reliability) and usually charge fees below running costs (imposed by the so-called public service obligations).

Local decision makers have to choose the transport mode that better fits the needs of their municipalities. This choice involves considering variables such as local geography, demography, and gross domestic product; current laws, regulations, and economic background; and other social variables such as the environment and welfare. Generally, economic reasons have been the main drivers of local governments' decisions (Costa 1996). The most popular mode has been bus services because they are flexible; buses can use conventional roads and only require relatively inexpensive bus stops to serve the users (Phang 2007). Other modes such as trams,

light rail, or metros require sunk investments in infrastructure. However, these alternative modes have some advantages where capacity, reliability, and environmental aspects should be highlighted. Despite the traditional preference for bus services (except for very large cities where several modes are needed), the tram and light-rail modes have also been largely considered (Edwards and Mackett 1996).

From a governance perspective, and compared with other local infrastructure services (e.g., water and energy), bus services have some advantages. First of all, the required investments are usually not as high. Secondly, if the choice is to contract out the services, the risk of contractual holdup (Goldberg 1976) may be lessened because bus services do not involve a great deal of asset specificity (buses can be sold or used in other municipalities). Thus, urban transportation provided through bus services may not have the traditional features of natural monopolies. This means that contracting out bus services should be an easier task. Evidently, other modes of transport do not present these advantages.

The main disadvantage of urban transportation is the lack of economic sustainability. Incentives for efficiency are lower once one accepts that a company may run a financial deficit. This is noticeable in several Portuguese public companies operating in the transportation sector (Santos et al. 2010). Contracting the services (regardless of the service delivery model), where operators are financially compensated for complying with the public service obligations, might be a solution to this problem (Vincent-Jones 2006).

Regulation by contract is an alternative or a supplement to simple regulation by law or through independent regulatory commissions. Regulatory contracts (written documents setting limits to unilateral regulatory changes and detailing the scope of action of the signatories) should ensure the credibility of the commitments and of the institutional environment in which the investments are carried out (Cruz and Marques 2012a). Traditionally, the malfunction of long-term regulatory contracts has three well-known origins (Marques and Berg 2010): problems during the preliminary stages of the projects (this includes the initial decision-making rationale

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and the market access conditions), a faulty risk management framework, and the lack of performance monitoring. Therefore, the case studies are analyzed through these three fundamental lenses.

The purpose of this paper is to investigate the rationale behind the governance structures devised by local governments, assess the quality of the contracts signed with operators, and discuss which institutional capacities should be strengthened to protect the public interest. Thus, it makes a contribution to the literature on the contracting and governance of urban transport services. The quality of the contracts formed in the urban transportation sector in Portugal are analyzed in six case studies: two municipal companies, two mixed companies, and two concessions. A review of the market structure and current sector regulations is also provided to clarify the framework of the analysis. The findings are relevant at the European level and might also be useful for planners and decision makers considering their options regarding urban transportation in other countries.

The remainder of this paper is organized as follows. In the second section, the governance issues of urban transport utilities are discussed and the literature on the subject is reviewed, particularly on the three pillars of the case-study analysis. The third section presents and debates the urban transportation sector in Portugal. The fourth section describes the methodology, whereas the analysis and discussion of the selected case studies are provided in the fifth section. The review of the findings and the concluding remarks are presented in the sixth and final section.

Urban Transportation Governance

This section addresses the theoretical issues regarding urban transportation governance. First, the ideal-typical governance models of service delivery are discussed. Then, the best practices are reviewed in terms of the initial decision process and market access conditions, risk management framework, and performance monitoring mechanisms. These three lenses provide a suitable framework for scrutinizing the contractual relations between the local governments and the operators.

Models of Service Delivery

Traditionally, the provision of urban transport services is a competence of subnational governments. Fig. 1 shows the different stylized models available to local governments for the production of urban transportation, ranging from direct (internal) production to full divestiture. Direct production is usually carried out by

municipal departments or by semiautonomous structures. Nevertheless, if local decision makers opt for the delegation of the services to a distinct entity, the range of options increases. First, if local governments pursue a more entrepreneurial and flexible approach for the delivery of urban transportation while avoiding the hurdles of public-private partnership (PPP) contracts, the municipal (public) company model should be considered. The objective of corporatization (Bilodeau et al. 2007) is to create a governance structure capable of “fighting with the same weapons” as private companies in terms of corporate values, human resource management, and procurement procedures. Second, the municipal (mixed) company model consists of a complex PPP agreement where the public and private partners are equity owners of the company in charge of delivering the services (i.e., a public-private joint venture). Accruing to the goals mentioned for the previous model, with this institutionalized PPP (iPPP), the public partner aims at benefiting from the private partner’s know-how and lessening the burden for the public treasury while ultimately keeping control of the services (for political reasons). And third, the contractual PPP (cPPP) is a governance model where the rights and duties of the partners are solely defined in a contract, setting up a more “transactional” relationship, in contrast to the “relational” contracting approach that characterizes the previous governance structures (Rahman and Kumaraswamy 2008). Despite the growing interest in iPPP arrangements (Cruz and Marques 2012b), cPPP agreements are more widely known at an international level (Papajohn et al. 2011).

Although the delivery of the services can be delegated to a public, mixed, or private entity, the responsibility regarding the availability of public transportation remains with local governments. The duties of local authorities do not end by making a judgment on the optimal governance model for their municipalities or choosing the right partner in the case of a PPP agreement, two very difficult tasks per se (Koch and Buser 2006). They still have to monitor the performance and apply rewards or sanctions when it is appropriate (Coelli et al. 2003).

When local governments opt to contract out the services, there are three types of payment schemes that have been used in the urban transportation sector (Roy and Yvrande-Billon 2007). In cost-plus contracts, the transfers made from the authority to the operator cover all the costs of the service plus a prespecified profit rate. Gross-cost contracts specify a fixed transfer from the authority; in some cases it can suffer minor adjustments linked to the quality of service. Net-cost contracts include two components: a fixed transfer from the authority and the revenue resulting from operation.

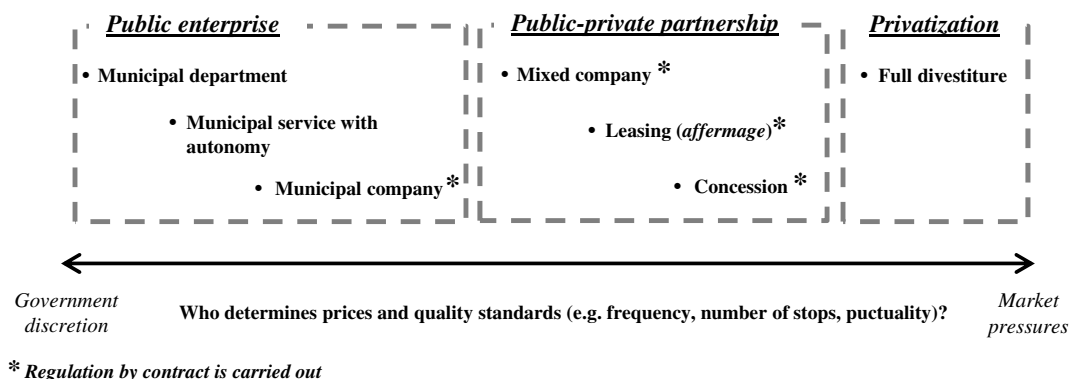


Fig. 1. Governance models available for production of urban transport services (simplified)

Decision Process and Market Access

The decision on the appropriate governance model and ownership structure for operation is crucial for the success of urban transportation (Touran et al. 2011). There are two main decision-aid tools that should be devised in the initial stages of all infrastructure services projects (Cruz and Marques 2012a): the affordability cap (to ensure the long-term economic sustainability of the project) and the public sector comparator (PSC). The aim of the PSC calculation is to estimate the risk-adjusted cost of the project life cycle considering public sector delivery in order to compare it with the cost of delivery through a PPP scheme and determine which of the two main alternatives provide better Value for Money (VfM). If the VfM test demonstrates that public sector delivery is preferred, or if the private sector bids are higher than the calculated PSC, a best practice would be to contract the services with a public operator (Vincent-Jones 2006). These contracts should establish clear and measurable objectives and discourage political patronage (Díaz and Sánchez 2011). Otherwise, if the studies demonstrate that the delegation of tasks and transference of risks to the private sector reduces the life-cycle costs of the project, the PPP model should be selected. Note, however, that the expected benefits of private sector participation can only be achieved if effective “competition for the market” occurs (Demsetz 1968).

In PPP arrangements, the definition of qualification and awarding criteria is the key aspect during the procurement phase. For comparability reasons, and to avoid *ex post* opportunism, the business model (e.g., assumptions, demand forecasts, duration of the contract) should be the same for all bidders, and the awarding criteria must be objective and with an output orientation. To avoid the drawbacks of contract renegotiation (e.g., triggered by unrealistic demand forecasts), the equity internal rate of return required by each bidder could be one of the parameters evaluated (Marques and Berg 2010). It is difficult for municipalities to encompass all of the skills needed in the procurement phase (Griffis and Choi 2013). Thus, after a first stage of competitive bidding, the authorities should negotiate details with (at least) the two best-positioned bidders.

Finally, an environment that facilitates public awareness, scrutiny, and participation is crucial for the good governance of public services (Hira et al. 2005). During the planning, development, and procurement phases, municipalities ought to create conditions for public involvement (e.g., customer boards or consumer advocates). Users should be consulted not just for the definition of the routes and schedules but also for other issues such as rate design and amounts, methods of payment, type of vehicles, and accessibility aspects (Wei and Kao 2010). This effort might assist local authorities in devising the optimal criteria for the tenders (and indicators for contract management), and it should be regarded as an investment and an opportunity to share the burden of dealing with the multiple objectives that characterize complex transport systems (Flyvbjerg et al. 2003).

Risk Management

To ensure successful outcomes, the risk-management framework should be devised in the early stages of the projects (Tang et al. 2013). In fact, the economic cost of risk-bearing is considered in the PSC calculation. The risk-management framework of infrastructure services encompasses three phases: risk identification, risk allocation, and risk mitigation (Marques and Berg 2011). This is a dynamic process that should be implemented throughout the whole life cycle of the projects, starting at the preparation and design stages and encompassing the operation and maintenance stages (Boussabaine and Kirkham 2004).

In the case of urban transportation, the sources of risk are numerous (Estache and Gómez-Lobo 2005). For instance, the management of road infrastructure, road signs, and public parking has an impact in urban transportation management. Metered parking can influence the demand for urban transportation, and bundling (or unbundling) of these services needs further consideration by the literature. Whether to keep the discretionary power over these responsibilities (changes in these parameters can lead to contract renegotiation with transport operators) or to transfer these responsibilities to the hands of the operators is, therefore, a dilemma.

When the operator is a public enterprise (Fig. 1), the public sector bears all risks involved. Nevertheless, some risks may be mitigated if the proper governance rules are devised. Establishing management contracts between the local governments and the operators setting clear targets to be attained (e.g., financial and quality indicators), the financing mechanisms (due to the fulfillment of certain public-service obligations), the powers and competences of managers (operator) and regulators (local government), and other relational guidelines might insulate “management” from “politics.”

In the case where the urban transport services are delivered through a PPP contract, local governments ought to provide a risk matrix in the tender documents showing the intended allocation of the various risks identified. This matrix (or a new one, after the negotiation of the draft contract and the writing of the final agreement) should be part of the PPP contract, allowing for effective and explicit risk transference (Touran et al. 2011). This is an extremely important best practice because successful PPP arrangements are contingent upon the efficient transference and allocation of risks to each partner (Lemos et al. 2004). To minimize the overall economic cost of the project and improve the outcomes, each risk should be allocated to the partner that is better able to manage and control it (Doloi 2013). Moreover, the Eurostat rules state that assets (and associated debt) can only be registered off the government’s balance sheet if there is an effective transference of “most of the project risk” to the private partner (Cruz and Marques 2012b). Note that the off-balance-sheet treatment is a determining factor for local governments that must comply with strict debt limits.

Performance Monitoring

The responsibility of local authorities does not end with the selection of the preferred delivery model (and the award of the contract, in the case of a PPP), according to the technical and viability studies. Long-term contracts of local infrastructure services are unavoidably incomplete due to the inability to predict all possible future outcomes, i.e., due to problems of bounded rationality (Bajari et al. 2009). To avoid gold-plating practices and *ex post* opportunism an effective contract management must be enforced.

Monitoring urban transportation contracts (a responsibility of local governments) is similar to the activity undertaken by an external regulator (Marques and Berg 2010). However, with regulatory contracts, the discretion of the regulator (i.e., the contract manager) is limited to the clauses negotiated *ex ante* by the parts. To be credible a regulatory contract must be stable and establish how the regulator and regulatee should proceed in the presence of an unpredictable event.

Including several output-oriented (quantity, complexity, and quality of service) performance indicators in urban transport contracts is one objective way to effectively monitor the performance of the operators and apply rewards or sanctions accordingly. In the case of public sector operators, these indicators can be linked to the remuneration schemes of the appointed managers. This set of indicators is intended to provide a framework of incentives and a tool for contract management (Yuan et al. 2010).

Urban Transportation in Portugal

This section briefly describes the rules of the game for the urban transportation sector in Portugal. It also presents an overview of the market structure in this country, pointing out the major stakeholders and the most common governance models adopted by local governments.

Regulatory Environment

Within the European Union (EU), public transportation services are labeled as services of general economic interest. These services are regarded as economic activities of particular importance to citizens and society and would not be produced (or would be produced under different conditions) if there was no intervention by the competent public authorities. However, this intervention must not hinder the “competition for the market” (Demsetz 1968). In fact, a new (proliberalization) European regulation entered into force in December 2009 binding all member states. This law provides a transitional period (until December 2019) during which competent authorities will have to update the current urban transportation contracts and procurement procedures. Internal production (direct or indirect production via municipal or mixed companies) will still be allowed in some circumstances, but a public service contract must be formed between the operator and the competent authority (otherwise, any financial compensation due to public service obligations will be considered illegal). The maximum duration of urban transportation contracts will be 10 years (or 15 for services by rail or other track-based modes) and, if necessary (due to the conditions of asset depreciation), they can be extended up to a maximum of 50% of the initial duration (see regulation No. 1370/2007 of the European Parliament and of the Council of 23 October 2007).

In Portugal, the regulator for the transportation sector, the Institute for Mobility and Land Transport (IMTT in the Portuguese acronym), was created in 2007. This entity is responsible for supervising road and rail transportation. However, the IMTT's core activities consist of the approval, licensing, and inspection of vehicles, as well as other activities such as issuing driving licenses, licensing driving schools, and training professional drivers.

Regarding the particular case of urban transportation, the IMTT is a rather weak regulator. Several factors contribute to the current state of affairs. Due to the constitutional principle of local autonomy, the central state cannot interfere nor have any sort of economic power over the competencies of local governments. In addition to this shield provided by the law, the regulator lacks resources and local decision makers lack the know-how needed to design, procure, and monitor complex transport systems. Thus, the IMTT has the responsibility to monitor and discipline the sector, but the law does not provide the regulator with the power to effectively pursue its mission. Finally, although a major change in the national legal framework is expected (presumably in 2014), the law that currently regulates all bus and rail services is from 1948. This legislation has been amended throughout the years, although it still provides a great deal of protection to the current lessees, precluding other players from entering the market. Moreover, this law promotes the division of the territory among operators (the so-called areas of preference, envisaging market concentration). The IMTT has the power to award concessions of interurban bus services. These concessions, working as simple permits that give exclusive rights to the operator, have been awarded since 1948 for 10-year periods (with automatic extensions of five years) and were mainly driven by private initiative. Nonetheless, because the concept of urban transportation is poorly constructed in the law and because some urban areas experienced a

rapid expansion over the years, it is very common to have operators delivering urban transport services (a competence of local governments) while holding an “IMTT concession” for historical reasons. All these facts show that the regulatory framework of urban transportation in Portugal is quite underdeveloped (though the same conclusion is valid for several other countries, e.g., Ponti 2010).

Market Structure

In the EU, over 60% of the population lives in urban areas. Usually, research on the governance and management of urban transportation primarily focuses on major cities [especially case-study research, drawing attention to the large infrastructure investments involved in metro and light-rail modes, e.g., Shaoul (2002); for an exception see Stanley and Hensher (2008)]. Nevertheless, the biggest problems might occur in medium-sized municipalities, where central governments rarely provide financial and technical assistance. Smaller municipalities have their options on the mode of transport confined to buses (other modes require massive demand and major up-front costs).

The governance models, the types of contracts formed between local authorities and operators, and even the market structure of the Portuguese urban transportation sector are similar to the French case. In fact, most of the problems of urban transportation identified in France also apply to Portugal, e.g., excessive discretionary power of the authorities during procurement procedures, little competition for the market, and little transference of risk to operators, among other deficiencies (Yvrande-Billon 2006).

Only around 50 municipalities (of a total of 308) provide urban transportation in Portugal. However, these municipalities include more than 61% of the country's population (just above 6,500,000 inhabitants). Table 1 shows the different types of governance models found in Portuguese municipalities. In the metropolitan areas of Lisbon and Oporto, urban transport services are produced by public companies owned by the central state (for example, the case of CARRIS in Lisbon and STCP in Oporto). These organizations are anomalous governance structures because the central state is providing services that are the responsibility of local governments. In truth, this may be an inequitable and unfair situation for the municipalities that do not have this type of support from the central government. Thus far, CARRIS is the only public company in the transport sector that has contracted the services with the public authority. In fact, there are five contracts directly binding each member of the board of directors. These recently formed contracts (2009) represent a step forward and a best practice regarding the definition of clear objectives for public transport companies. The contracts set 12 indicators to account for the level of fulfillment

Table 1. Portuguese Market Structure of Urban Transportation

Mode	Governance model	Number of municipalities	Population
Bus	Municipal service	5	825,447
	Municipal company	2	249,254
	Mixed company	1	54,780
	Concession	45	5,129,577
	Public company (central state)	5	1,328,504
Metro, tram, and light rail ^a	Mixed company	1	172,021
	Concession	2	382,183
	Public company	1	489,562
Inland waterways	Municipal company	1	73,100
	Public company (central state)	3	743,292

^aFunicular railways and elevators are not included.

of the targets (plus the methodology for the measurement of the quality of service and the reporting procedures), and the remuneration of the managers is indexed to these indicators.

Some municipalities have more than one governance structure operating in their territory. For instance, Lisbon is supplied by one public company, one municipal service, and one concessionary company producing bus services, plus two other public companies for metro and transportation by inland waterway. It is interesting to note that municipalities do not seem to be able to produce transport by rail on their own and, to some extent, must rely on the assistance of private investors or the central state.

Three major private players divide the Portuguese territory between them and dominate the market (bus and metro). In fact, Barraqueiro operates in 13 municipalities (1,608,320 inhabitants), Transdev operates in nine municipalities (1,028,684 inhabitants), and Arriva, which owns 31.5% of Barraqueiro, operates in six municipalities (381,262 inhabitants). Together they cover almost half the population with access to urban transport services. Because municipalities with urban transportation are nodes in the interurban network, the geographical placement of these three players is also related to their coach service coverage areas.

Alongside the three major players, there are only 12 different private investors producing urban bus services, and most of them are very small—only two of these companies have a total fleet over 50 buses (IMTT 2009). Indeed, competition for the market is not intensive, and, usually, municipalities rely on the companies operating in the area to outsource services such as school transport and other occasional services. Some authors claim to have found scale economies in urban bus services and that having small and fragmented operators might lead to low efficiencies (Farsi et al. 2007; Hirschhausen and Cullmann 2010). Nevertheless, technical inefficiencies due to the lack of competition for the market seem to be more significant (Amaral et al. 2009; Estache and Gómez-Lobo 2005). Hence, there is a trade-off between having larger operators and higher competition for the market.

In Portugal, there is a disconnection between the mobility policy and the contracting policy. Contiguous municipalities seldom gather to jointly plan networks, tariffs, quality standards, the proper governance structures, and contracting schemes. The panorama seems to be the following: sparsely populated municipalities (less than 50,000 inhabitants) do not provide urban transportation; in major municipalities (more than 200,000) the central state somehow assists in the provision of these services; medium-sized municipalities provide urban transport services relying on their own resources and struggling with regulatory contracts [these struggles have also been observed elsewhere; see Koch and Buser (2006)]. In these municipalities the heterogeneity of governance structures and contractual arrangements is puzzling. There are cases where local governments produce the services directly while renting the buses. In other cases municipalities own the buses but private companies operate them. Occasionally, local governments do not issue tenders for the selection of the operator and set 12-month simple agreements, which are prone to political maneuvering.

Methodology

As Posner (2010, p. 3) puts it, “the study of institutions necessarily places heavy emphasis on the case study in preference to econometric studies.” Accordingly, to assess the institutional capacity, the quality of the contracts signed, and the rationale behind each governance structure (Touran et al. 2011), the authors examine governance models that entail a contractual relationship between

the operators and the competent authorities, i.e., the municipal company, mixed company, and concession models (Fig. 1).

By the time of this analysis there were only two municipal companies [MoveAveiro and Transportes Urbanos de Braga (TUB)] and two mixed companies [Sistema Integrado de Transportes e Estacionamento de Évora (SITEE) and Sistema Automático de Transporte Urbano (SATU)] delivering urban transport services in Portugal. Thus, the research strategy was to analyze two case studies for each governance model. The operators were contacted to request all of the relevant regulatory documents. For the case of the concessionary companies, the operators from the 10 most populous municipalities were contacted. Information was received from three of these operators [Transurbanos de Guimarães (TUG), Transportes Urbanos de Loulé (TUL), and Transportes Urbanos de Azeméis (TUAZ)], and the two largest concessions were chosen for analysis (also, the TUL and TUAZ contracts were very similar). Table 2 highlights the most important features of the case studies (details will be discussed in the next section). The following data were used in the analysis:

- Municipal companies: statutes and management contracts;
- Mixed companies: statutes and shareholder agreements (there was no call for tenders); and
- Concessions: call for tenders and PPP contracts.

To complement the analysis of the regulatory documents, other public documents were also consulted, for instance the annual financial reports of the municipal companies and mixed companies for 2010 and several minutes of municipal meetings. Finally, to assist in the planning stages of the current research and to gather input from a key stakeholder, an extensive semistructured interview was conducted in May 2010 with two IMTT representatives from the Department of Authorization of Public Transport Services and the Department of Contracting and Tariffs (the previous section draws extensively on this discussion).

Municipal companies (100% public or mixed) were intentionally designed to work as private companies. As one of the by-products of the New Public Management paradigm (Osborne and Gaebler 1993), these governance structures should operate under private law (with some additional restrictions). However, to ensure the dominant influence of local governments, these entities are regulated by two main documents. The statutes define the internal rules of the entities, whereas the management contracts should set the objectives of the company and specify the conditions for any financial transactions between the operator and the respective authority.

In principle, in addition to the statutes and the management contracts, mixed companies are also governed by shareholder agreements (the actual PPP contracts), which set the rights and duties of each partner and the remuneration scheme of the private investors. The mixed company model is an extremely complex governance structure (still puzzling both to practitioners and academics) involving high contracting costs, and therefore it should only be implemented in extremely complex and uncertain public infrastructure investments (Cruz and Marques 2012b). These institutional arrangements appear when local decision makers wish to retain control of the services while keeping them at arm's length (Ghavamifar and Touran 2009).

As contractual PPPs, concessions are not so complex in institutional terms. Furthermore, this form of PPP agreement has a stronger tradition among local governments. However, because the “letter of contract” is what guides the relationship between operators and local authorities [whereas in other governance models mutual trust, altruism, and strategic alliance can be more significant (Rahman and Kumaraswamy 2008)], the likelihood of success is contingent upon the level of contract completeness (i.e., the degree

Table 2. Case Studies Summary

Case studies	MoveAveiro	TUB	SITEE	SATU	TUG	TUL
Municipality	Aveiro	Braga	Évora	Oeiras	Guimarães	Loulé
Population	73,100	176,154	54,780	172,021	162,636	65,444
Year of creation	2005	1999	2000	2002	2001	2005
Governance model	Municipal company	Municipal company	Mixed company	Mixed company	Municipal concession	Municipal concession
Services produced	Bus, inland waterway, bicycle, and public parking	Bus	Bus and public parking	Light rail	Bus	Bus
Procurement procedure	Internal operator	Internal operator	Internal operator (direct award to private partner)	Internal operator (direct award to private partner)	Competitive tendering	Competitive tendering
Type of contracting	Cost-plus ^a	Cost-plus ^a	Cost-plus ^b	Cost-plus ^c (capped)	Net-cost	Gross-cost
Duration of the contract	Yearly management contracts (unlimited)	Yearly management contracts (unlimited)	10 years (renewable)	Not specified	10 years (renewable)	10 years (renewable)
Public service compensation	Not calculated	Not calculated	Not calculated	Not calculated	Not calculated	Not calculated
Private partner	None	None	Rodoviária do Alentejo (Barraqueiro)	Teixeira Duarte	Arriva	EVA (Barraqueiro)

^aThe local authorities did not set a fixed transfer for the internal operators; instead they reimburse all of the operating deficits on a yearly basis.

^bThe contract formed between the operator (SITEE) and the local authority sets several cases where the municipality has to undertake compensation; the partners are essentially remunerated through the payment of shareholder loans using a fixed interest rate (in accordance with the shareholder agreement).

^cThere is no contract formed between the operator (SATU) and the local authority; two shareholder agreements specify the remuneration scheme of the private partner.

to which the concession contract is able to take into account all possible future outcomes or events with economic impact over the services). The loss of control of the services to the private partner might also be troublesome for local politicians. Usually, municipal concessions seem to have a much narrower scope when compared with other governance structures (Table 2 also suggests this). This fact is intimately related to the difficulty of crafting a complete transactional contract bundling several services.

In the following section, the best practices (extracted from the literature and discussed in the “Urban Transportation Governance” section) are compared and contrasted with the real-world practices of the six case studies. The normative analysis follows the three main pillars of infrastructure services delivery: decision-making rationale and market access conditions, risk management framework, and performance monitoring mechanisms.

Case Studies: Analysis and Discussion

In this section the case studies are analyzed through the three lenses discussed previously. Each subsection begins with a general assessment. Afterwards, details are presented for the municipal companies, the mixed companies, and the concessions (in that order).

Decision Process and Market Access

According to Portuguese law, all of the public tender documents and the contracts awarded by public entities should be available for public scrutiny. Complying with these transparency requirements is a good practice because the general public (and academia, and competitors) would be able to supervise the procurement practices and the quality of the agreements and assess to what extent local governments have been enforcing the contractual clauses (Siemiatycki 2009). Nevertheless, the essential regulatory contracts (management contracts, shareholder agreements, and concession contracts) were not publicly available for any of the case studies. Upon request, two operators refused to provide these documents (MoveAveiro and SATU). The contracts were only made available

after a complaint was submitted to the Commission for Access to Administrative Documents. After a few months this entity advised the urban transportation operators to provide the contracts.

In addition to the lack of transparency, some other negative aspects cut across all governance models. Currently, local authorities make ad hoc decisions regarding the governance models of urban transportation. The PSC and affordability cap calculation was not carried out for any of the case studies. Moreover, municipalities did not consult with each other to consider the possibility of a large-scale integration, neither were the users involved in the decision-making process. In fact, the IMTT representatives stated that even the sector-specific regulator is usually informed of new urban transportation systems by the local press rather than by the municipalities that choose to go it alone. Finally, market consultation was only carried out for the two concession contracts.

TUB started to operate in 1999, assuming the services that were previously delivered through a “municipal service with autonomy” (Fig. 1). It currently operates 83 bus routes. In December 2011, TUB had 182 civil servants (employees from the preceding services that were incorporated into the new company) and 137 employees hired under private sector labor law. MoveAveiro started to operate in 2005, also succeeding a municipal service with autonomy. Currently, this operator delivers eight bus routes, an inland waterway (four vessels), and public bicycle and public parking services. In December 2011, MoveAveiro had 71 civil servants and 79 employees hired under private sector labor law. As has been seen, a PSC should have been calculated to determine which governance model was likely to deliver the best VfM (public sector management or a PPP arrangement). Evidently, with the municipal company model, private investors do not have access to the market. Nevertheless, the decision for in-house production could have been taken after the VfM test and a preliminary phase of market consultation.

Soliño and Santos (2010) concluded that open (competitive) procedures minimize transaction costs in transport PPPs. However, both mixed companies negotiated the contracts directly with a private investor. The municipality of Oeiras even sought legal advice to support its decision regarding the selection of Teixeira

Duarte (a major construction company) as the private partner. The absence of competitive tendering for the selection of private partners clearly harms the public interest. In fact, the lack of transparency and customer participation hindered the success of the projects. In Oeiras, SATU runs huge deficits nowadays (the net loss was 2,988,900.68 Euro in 2010), and the second and third phases of the light railway expansion have been stalled for several years. The lack of adherence to good governance practices led to public contestation and to litigation between the partners, which prompted an investigation by the Inspectorate General of Finance (report no. 1842/2009, case 2009/26/26/A8/1116). This investigation concluded that the public partner had been in default and should proceed with the injection of capital into the company so that the partnership could achieve financial sustainability. For the case of SITEE, there is no clear technical justification for the selection of this governance model (because bundling bus services and public parking does not seem to be a highly complex infrastructure service). In 2009 the net loss of this operator was 286,725.46 Euro, and during 2010 the municipality of Évora decided to issue a call for tenders for the concession of the 17 bus lines that were managed by SITEE. After the award of the urban transport services to a concessionary company (incidentally, the concession contract was awarded to Rodoviária do Alentejo, the private partner in SITEE), the only competence of the mixed company has been managing the public parking. Quite recently (2012), the local government decided for the dissolution and extinction of this municipal company.

Considering the existence of public calls for tenders, the market access in the cPPP arrangements was better handled in comparison to the other case studies. However, for the TUL concession, only one bid was submitted (the one by EVA), and, therefore, there was no effective competition for the market (Bajari et al. 2009). The TUG concession was initially awarded to a consortium of several small companies that were later acquired by Arriva between 2003 and 2005. Although, in theory, the existence of competitive tendering protects the public interest, the potential benefits were curbed due to the limitations of the bid evaluation models. For instance, consider the model used to evaluate the proposals of the bidders of the TUL contract tender in the most recent concession (Official Journal of the Portuguese Republic 2004). The criteria for awarding the concession were as follows (in decreasing order of importance):

1. Annual price of service delivery,
2. Technical features of the buses and their adequacy regarding the services to be delivered,
3. Location and operational features (human resources and equipment) of the maintenance facilities, and
4. Location and operational features (human resources and equipment) of the ticket selling service.

This type of evaluation model is highly discretionary. The weights of each criterion were not disclosed (this is currently illegal in the EU) and, apart from the first criterion, the absence of quantitative indicators (or qualitative scales) in the model produces a subjective scoring system. Finally, all PPP arrangements analyzed had clauses for contract extension with no limitation (denying access to new investors). Indeed, during 2011 the municipality of Guimarães decided to extend the concession contract and to delegate the services to Arriva for a period of five years without consulting the market.

Risk Management

All of the PPPs in the case studies had a poor transference of risks to private partners (Table 3). The unbalanced risk allocation between the partners is partially due to the lack of key performance indicators in the contracts connected with the remuneration

schemes of the private partner (e.g., demand risks). Furthermore, several risks related to urban transportation are unmentioned in the contracts formed between the partners (e.g., environmental risks). Nonallocated risks are prone to be transferred to taxpayers (Lemos et al. 2004).

In theory, as has been seen, most production and commercial risks involved in infrastructure services should be transferred to private partners. Supported by a comprehensive literature review on the subject, Marques and Berg (2011) argue that design, expropriation, construction, maintenance, operation, and performance risks (production aspects), as well as collection, capacity, financial, and inflation risks (commercial aspects) should be preferably allocated to the private partners to minimize the economic cost of infrastructure projects. Note that some risks should be preferably allocated to the public partner, such as legal or unilateral changes risks (when ever the public sector is able to control the sources of risk).

As mentioned in the theoretical section, in public enterprises the public sector bears all risks involved. Nevertheless, good governance practices (and the EU law) establish that internal operators should be subjected to controls that are similar to the ones implemented in other delivery models (e.g., the use of fixed-price contracts). The main difference is that incentives may also be linked to the remuneration of the managers of municipal companies. One should note, however, that this strategy might entail additional difficulties in developing countries (Devapriya 2006).

As Table 3 shows, the private partners of iPPP arrangements are rarely solely responsible for managing a given risk. This is expected because cost-plus remuneration schemes do not promote the allocation of either production risks (costs) or commercial risks (revenue) to the operators (Margari et al. 2007). These operators do not have any incentives to deliver the services efficiently.

Table 3. Risk Allocation in the Case Studies

Risk	iPPP model		cPPP model	
	SITEE	SATU	TUG	TUL
Network planning	Public	Shared	Public	Public
Expropriation and licensing	?	Public	?	?
Environmental	?	?	?	?
Construction	—	Private	—	—
Maintenance of infrastructure	Public	Shared	Public	Public
Maintenance of vehicles	Shared	Shared	Private	Private
Operation (energy costs, availability)	Shared	Shared	Private	Private
Technological (innovations in the sector)	?	?	Private	?
Performance (reliability, customer satisfaction)	Public	Public	Public	Public
Demand	Public	Public	Private	Public
Capacity	Public	Public	Public	Public
Financing	Shared	Private	Private	Private
Inflation	Customer	Customer	Customer	Customer
Legal/regulation	Public	Public	Public	Public
Unilateral changes (frequency, timetables, routes)	Public	Public	Public	Public
Public contestation	Public	Public	Public	Public
Force majeure	?	?	?	?

Note: Case studies are PPP arrangements only. ? = risks unmentioned in the contracts.

Moreover, shared risks are prone to be transferred to users because, as an active participant in the management of the companies, local governments have disincentives to apply sanctions to the mixed capital firms.

The duties and accountabilities of the local governments are laid down with much more detail in the complex web of contracts that regulate the behavior of the partners in mixed companies (statutes, management contracts, and shareholder agreements) than are the responsibilities and accountabilities of the private investors. For instance, the annexes III and IV of the management contract of SITEE include formulas to calculate the financial compensation owed by the municipality of Évora whenever the local government makes a decision that affects the number of paid parking places (definitively or temporarily, respectively). Similar mechanisms to calculate financial sanctions for the cases where the private partners fail to meet their commitments (e.g., in terms of time or quality) were not devised for any of the mixed companies.

Overall, concessionary companies bear more risks than mixed companies. Some authors argue that operators under gross-cost agreements (i.e., allocating demand risks to the public sector) are more efficient than the ones under net-cost arrangements (Roy and Yvrande-Billon 2007). Nevertheless, aligning the remuneration of the private partner with the market share (relative to the use of private transportation) may increase the utilization of public transport services (which has positive externalities).

The risk management framework could, however, be improved also for the cPPP arrangements. To promote user satisfaction and enhance the outcomes, some financial incentives regarding quality levels such as reliability and punctuality should also have been built into the contract.

Performance Monitoring

The quality of contract management and performance monitoring is directly connected with the quality of the clauses and incentives negotiated *ex ante* and included in the regulatory contracts. The existence of output-oriented performance indicators linked to the private partner (or the operator's managers) is key to effective contract monitoring.

Municipal companies were the worst in this regard because the one-year management contracts formed fail to provide incentives for accountable and efficient management. Currently, these documents simply specify the financial transfers made by the authorities to ameliorate the operating deficits (which consists of an input-oriented approach). In 2010, the municipality of Braga transferred 4,017,463.25 Euro to TUB, and the municipality of Aveiro transferred 1,440,000.00 Euro to MoveAveiro without imposing any measurable targets or counterparts to the companies. Because the local governments hold the discretionary power to appoint and exonerate the board of the company (and there is no requirement to provide an objective reasoning to make any of these decisions), political will is imposed informally. Obviously, this is not in line with the theoretical reasoning of corporatization. As discussed previously, there should not be significant differences between the management contracts formed with municipal companies and the agreements signed with private investors.

For mixed companies, the performance of the private partner is very hard to determine. Furthermore, local authorities have disincentives to apply sanctions against themselves because they are involved in the management of the services. For both SATU and SITEE, the shareholder agreements specify the remuneration scheme of the private partners that consists of the amortization of the additional paid-in capital (i.e., the remuneration is not contingent upon performance). In addition, several "lateral contracts"

were awarded to the private partner. These additional difficulties represent another indication that the mixed company model should only be implemented in very special cases where high levels of complexity and uncertainty are present. Crafting relational contracts and monitoring structures that are able to protect the public interest in the long term would involve outstanding *ex ante* costs (in the drafting of the contract, the corporate governance rules, the transparency and accountability mechanisms, and so on).

The unsuccessful outcomes of relational contracting in both case studies are evident. The public and private partner of SATU entered into litigation regarding the responsibility of injecting capital into the company, and only the first phase of the project (around 1.5 km, covering three stations) was completed in 10 years. SITEE was terminated during 2012, and the new cPPP arrangement was awarded to the same partner.

Concessionary companies operate under fixed-cost contracts that by themselves provide a high-powered incentive for cost efficiency. Although the TUG contract includes some good practices, such as the recruitment of a contract manager paid by the municipality and the inclusion of symbolic financial sanctions connected with the condition of the buses (2,500.00 Euro per month), both concession contracts are quite underdeveloped (the TUG contract has 11 pages and the TUL contract has only four pages). To support contract management, these documents should incorporate small adjustments to the financial transfers based on the quality of service attained (Díaz and Sánchez 2011).

Concluding Remarks

Entering a postcrisis environment, it seems that governments are moving toward an age of economic regulation. However, when compared with other public utilities, urban transportation falls behind in terms of the completeness and robustness of the regulatory framework. As an exception, one could mention the Transport for London case, which can be seen as a best practice in terms of good governance (Amaral et al. 2009). This does not mean that privatization (and incentives for effective competition in the access to the market) is the only way to go for this sector. There are some lessons that should be applied irrespective of the organizational models in charge of the services. Nonetheless, in the authors' opinion, the existence of sound public service contracts (agreements establishing ambitious yet reasonable targets for the structures in charge of delivery) is essential for true accountability and the improvement of the services.

For the case of Portugal, despite having no jurisdiction over the rates and adequate quality standards for each municipality, the sector-specific regulator could strive for the transparency of the processes (facilitating access to documentation such as viability studies, financial statements, risk matrices, demand forecasts, and also the reasoning of the decisions and measures taken), and new legislation could be passed to strengthen the information duties of local authorities.

As has been seen, there is a high level of market concentration in Portugal. This market failure imposes limits to competition, and prices tend to detach from production costs (Bajari et al. 2006). In fact, local authorities could consider the possibility of allowing the submission of bids for individual routes or combinations of routes to enhance competition for the market. To foster intermunicipal cooperation the IMTT could promote the creation of supramunicipal authorities for transportation whenever network integration should be made in a larger scale (Rouboutsos and Kapros 2008).

Regardless of the model, municipalities try to retain discretionary power over the services because public service obligations are hard to determine and their cost is difficult to measure. Local decision makers prefer to have the power to steer urban transport services according to political cycles. Every governance structure analyzed in this paper has shortcomings in terms of contract design, mainly because performance indicators that would allow matching the objectives with the results were not devised for any case. The careful definition of public service obligations should be made on a case-by-case basis. Contrary to what was done by local authorities, the breakeven point for the delivery of urban transport services should be determined (the level of service that could have economic sustainability). Subsequently, the costs of increasing frequency, network length, and number of stops could be estimated. This amount should correspond to the public service compensation. The same methodology could be implemented in future adaptations of the systems during contract execution.

The sector-specific regulator could have a more proactive role on this subject matter. Indeed, the IMTT could develop guidelines for the creation of standard financial reports, and these should be submitted to them on a yearly basis. Moreover, the standardization of contracts and procedures might be a turning point for the effectiveness of regulation in this sector.

Concerns with contract design should be a priority in the agenda of all local governments. However, the “perfect contract” itself would not solve all the problems at hand. Whenever private delivery is preferred (a PSC should determine this), local governments ought to consider the proper ways of enforcing the contractual clauses while avoiding dispute. If the choice is public delivery, then the right level of autonomy should be secured by means of fixed-price contracts. From a governance perspective, it is difficult to suggest either public or private delivery as the right choice. It is worthwhile to conduct further research on this topic (and on the trade-offs between added competition and scale economies regarding the route-by-route versus whole-network tenders). However, all governance models may be viable if some precautions are taken. Perhaps local governments can make a more informed decision after the current models are improved and start operating at full capacity. The following guidelines are highlighted:

- Enhance competition for the market and within the market. There are benefits in adopting open tenders as the procurement procedure for urban transportation (especially for bus services). Yardstick regulation could be used to create a “virtual” competitive environment for bus services, regardless of ownership; if it exists, the sector-specific regulator could be in charge of this evaluation.
- Share the burden of organizing optimal urban transportation. Local authorities must consult with stakeholders, including other municipalities, exploring the possibility of developing an integrated network. High levels of transparency during the process are crucial to engage with the community and potential customers, who should actively participate from the planning phase onward. Public hearings, open access to plans, and feasibility studies or Web-based platforms for citizen participation should be considered.
- Know the options. To make an informed decision, local councilors need to understand the strengths and limitations of each governance model; a cost-benefit analysis or the calculation of a PSC could be helpful in this regard. Nevertheless, the added discretionary power offered by internal production models should be gradually replaced by credible contracting.
- Use the contract as a tool. The proper incentives and mechanisms to cope with uncertainty and prevent opportunism must be devised in the procurement phase; to secure a proper risk

sharing (which leads to lower economic cost and facilitates risk mitigation), PPP contracts should contain a risk matrix with the explicit allocation of all the risks of the project. Furthermore, the contracts should include appropriate performance indicators linked with the remuneration schemes (including rewards and sanctions) of private partners (fixed-price contracts with output-oriented incentives).

- Appoint a contract manager. To ensure accountability and adherence to the contract clauses (or to the “spirit of the contract” in relational agreements), the local authority should allocate a project manager who would be personally responsible for the commitment of all parties at all times.
- Adopt a whole life-cycle approach. The contracts and governance structures crafted by local authorities for urban transportation must consider whole life-cycle costs. Investment outlays (and the associated debt) must always safeguard the economic sustainability of the systems. To do this in a transparent and efficient way, public service compensations should be calculated in advance; authorities and operators must agree on what is commercial service and what precisely are the public service obligations and measure them accurately.

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