Politics and public administration : the influence of electoral motives and ideology on the management of local public services

Zoé Le Squeren

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Politics and Public Administration

The Influence of Electoral Motives and Ideology on the Management of Local Public Services

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Foreword

This Ph.D dissertation, entitled "*Politics and Public Administration: The Influence of Electoral Motives and Ideology on the Management of Local Public Services*", brings together three essays in the field of Public Administration. Each essay corresponds to one chapter. The links between the chapters and the underlying logic of the whole dissertation are exposed in the General Introduction, in which we also provide a review of related literature, and define the research questions we address. Nevertheless, chapters can be read separately. This implies the presence of redundant information across chapters.

Abstract

This dissertation offers an empirical investigation of the links between the political sphere and the management of local public services in France. When they administer public services, local governments can decide either to provide a service in-house, or to externalize its management, and therefore conclude contracts with private entities. First, these public-private contracts are analyzed, and the major influence of mayors' electoral motives on contractual renegotiations is revealed. Second, the drivers of the choice between internal provision and externalization of public services are studied. The political affiliation of successive mayors is found to be a major determinant of the proportion of public services provided in-house. Finally, the decision to provide one public service using simultaneously in-house provision and externalization is studied, and it appears that this choice is more motivated by pragmatism rather than ideology. This dissertation contributes to add knowledge to the understanding of the management of local public services, and highlights the importance of political factors in the study of the latter.

Keywords: Public Services, Public Administration, Public Management, Organizational Choices, In-house Provision, Externalization of Public Services, Public Contracts, Contractual Renegotiation, Political Cycles, Ideology.

Résumé

La présente thèse de doctorat propose une étude empirique des liens existant entre la sphère politique et la gestion des services publics locaux en France. Les municipalités sont confrontées à un choix lorsqu'elles doivent administrer leurs services publics : elles peuvent fournir un service en régie ou l'externaliser, et ainsi conclure des contrats avec le secteur privé. Dans un premier temps, ces arrangements conclus entre des entités publiques et privées sont analysés, et l'influence des motivations électorales des maires sur les renégociations contractuelles est révélée. Dans un second temps, les facteurs influençant les choix des maires entre gestion directe et externalisation sont étudiés. L'idéologie des maires successifs d'une ville apparaît comme un déterminant fondamental de la proportion de services publics gérés en régie. Enfin, le recours simultané à la régie et à l'externalisation pour un même service public est analysé, et il apparaît que ce choix est davantage stratégique que politique. Cette thèse de doctorat contribue à améliorer notre compréhension de la gestion des services publics locaux, et établit l'importance des facteurs politiques dans l'étude de cette dernière.

Mots-clés : Services Publics, Administration Publique, Gestion Publique, Choix Organisationnels, Régie, Délégation de Services Publics, Contrats Publics, Renégociations Contractuelles, Cycles Politiques, Idéologie.

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General Introduction

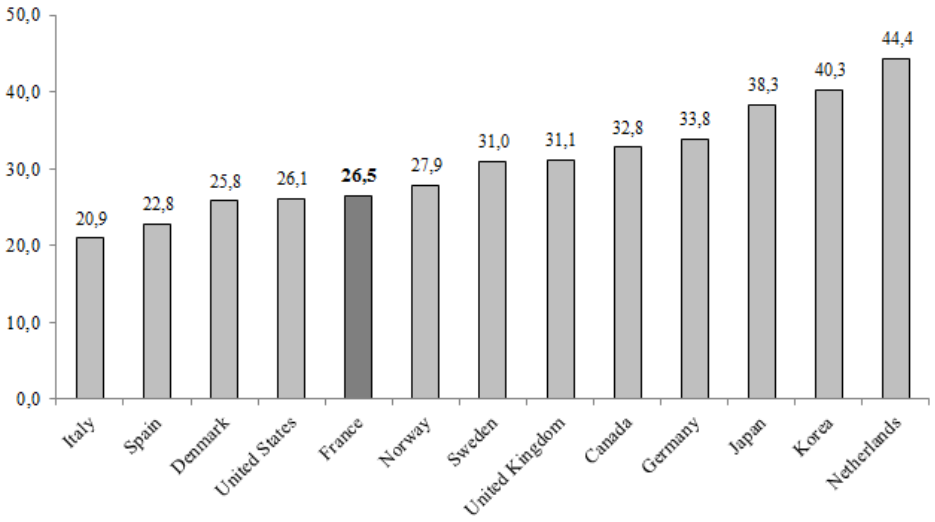
The Importance of Local Public Procurement

Public procurement is the process by which government departments or agencies purchase goods and services from the private sector. It constitutes a large part of states' provision of goods and services. In 2013, public procurement represents around 30% of total government expenditure among OECD economies (27.5% in France – see Figure 1), and 13% of Gross Domestic Product (15.1% in France – see Figure 2) [OECD, 2015]. In the case of France, as the Gross Domestic Product (GDP) in 2013 was of 2,117.3 billions Euros, public procurement represented more than 319 billions Euros. Beyond the fact that public procurement represents large amounts of money, it is crucial to study the latter because of its key role in the functioning of economic activities and social policies. Governments seek to produce policy outcomes (that is desired "deliverables", like a tolerant and safe society, well-educated citizens, etc.); and they develop policies and engage in operational activities to meet those outcomes. In that perspective, public procurement can play an *indirect* or a *direct* role. Let us take the example of a city, for which one of the desired outcomes is cleanliness. The city can rely on public procurement to deliver this outcome, by buying garbage trucks on the market (public procurement is then an *indirect* support: procured trucks are needed to clean the city, but the

private sector does not directly deliver the desired outcome); or the city can delegate the entire refuse collection services to a private firm (public procurement then plays a *direct* role, since the market provides the outcome and delivers the latter to citizens). Therefore, the price payed and the quality obtained through public procurement are crucial in maximizing overall welfare; this is the responsibility of the central state, but also of local entities.

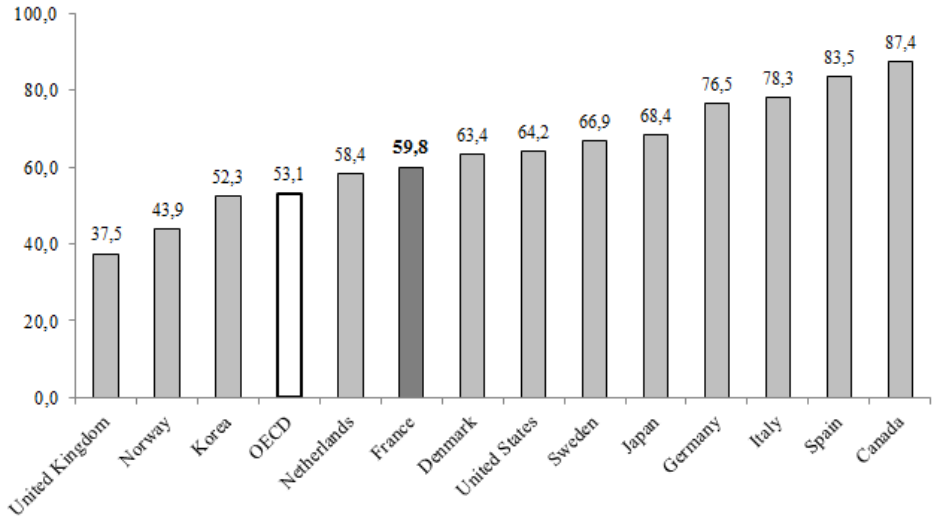
Indeed, public procurement takes place both at a central (national) level, and at a sub-central (local) level. The weight of local procurement in total public procurement is on average equal to 53.1% among OECD economies (see Figure 3). However, this average hides significant disparities between countries. For instance, the weight of sub-central procurement equals 37.5% in the United-Kingdom and 43.9% in Norway, while it reaches 83.5% in Spain and 87.4% in Canada. This weight is determined by the number of public services that are decentralized by the central government to local authorities. In this respect, in France (59.8%), as well as in countries like Netherlands (58.4%) or the United States (64.2%), local procurement plays a greater role than for the average of OECD countries. Recall that French public procurement was of 319 billions Euros in 2013: sub-central public procurement then represents almost 191 billions Euros, making local authorities the first investor of the country.

Figure 1: Public procurement (in % of total government expenditure) – 2013



Source: OECD [2015]

Figure 2: Public procurement (in % of GDP) – 2013

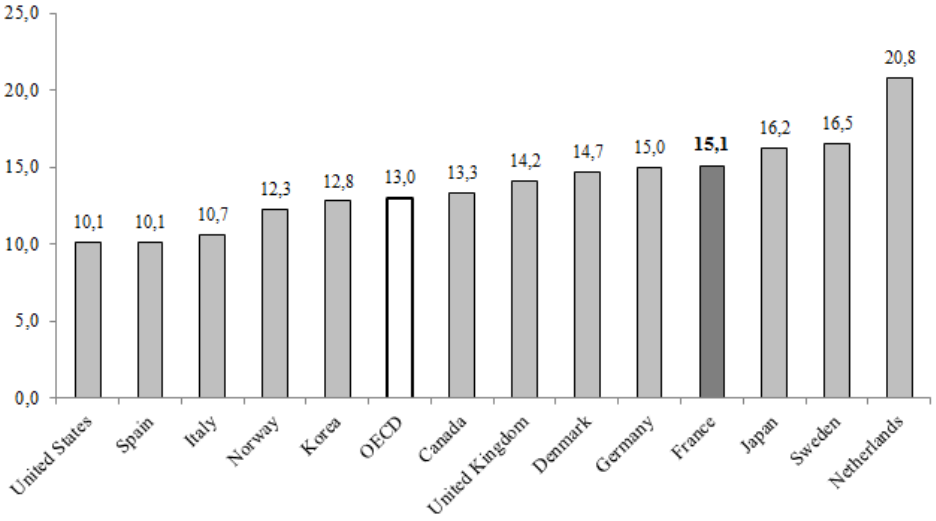


Source: OECD [2015]

The investigation of the evolution of local procurement over time also gives useful insights. Figure 4 displays the evolution of French local procurement in percentage of total procurement, between 1950 and 2013. Over this 63-years period, the weight of local procurement doubles. This dramatic increase is largely attributable to the progressive decentralization process, that is the transfer of decision-making

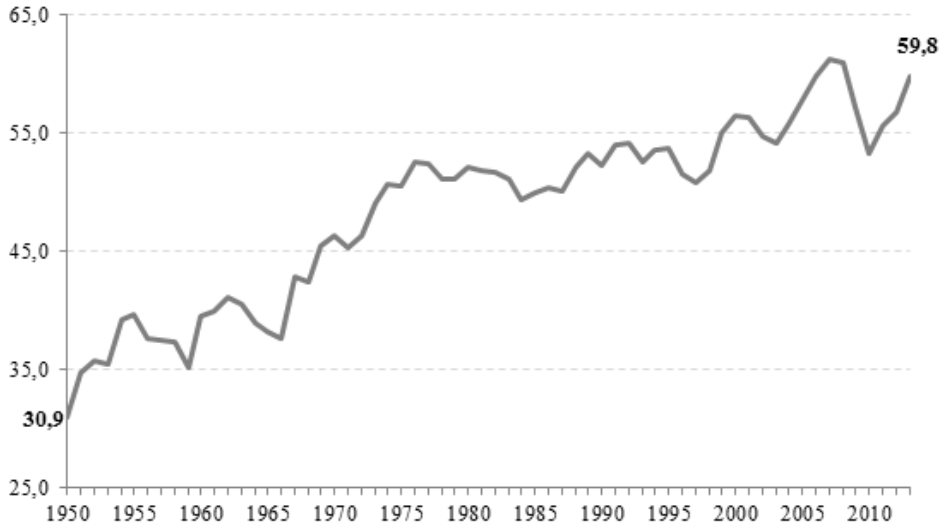
powers and administrative competences of the State to local authorities. Economic considerations can explain why many public services are provided at the local level.

Figure 3: Local public procurement (in % of total public procurement) – 2013



Source: OECD [2015]

Figure 4: Local public procurement (in % of total public procurement) – France (1950-2013)



Source: INSEE

The production of public goods is part of public actions that aim at correcting market failures. Decentralizing the production of public goods can be advantageous since it allows, under certain conditions, to achieve a more efficient allocation of resources. Let us recall that "pure" public goods are produced by public authorities because of their two key properties: the *non-rivalry* and the *non-exclusion* [Samuelson, 1954]. The production of this type of goods is optimal only if the amount that each individual is willing to pay to have an additional unit of public good is equal to the cost involved in the production of this additional unit. Private production does not fulfill this condition: given the inherent properties of the good, individuals are able to consume it without contributing to its funding, that is behave as free-riders. As a consequence, it is the responsibility of the State to produce public goods.

Nonetheless, in reality, it is rare that public goods strictly comply with non-rivalry and non-exclusion. Much of them are, in fact, *divisible* (non-exclusion is not "perfect"), or induce *congestion effects* (implying rivalry in consumption). This is precisely why Tiebout [1956] emphasizes that certain public goods are inherently "local". For instance, a parking lot, a swimming pool, or a theater all combine a degree of rivalry (it can be really difficult to find a parking space or to swim during peak hours) and exclusion (access to parking and swimming pools have to be paid). Tiebout [1956] shows that for such local public goods, municipalities engage into a competition, as they face individuals who vote "with their feet". Tiebout [1956]'s argument is that individuals choose their place of residence on the basis of the tax/expenditure ratio proposed by local authorities. The migrations of people will therefore lead to an efficient allocation of resources. Following the work of Tiebout [1956] on the optimal production of local public goods and services, Hamilton [1975] assumes that taxpayers are "perfectly mobile", and choose the city in which they live according to their preferences for public services. As a consequence, decentralization allows for "better fit" to agents' preferences.

Even if the theory developed by Tiebout [1956] and Hamilton [1975] is based on strong assumptions, it highlights that the local production of public goods reveals agents' preferences. The strongest assumption of the authors is to consider that citizens are perfectly mobile. Such an assumption has been criticized, and more especially in Europe where geographic mobility is lower than in the United States.[1] As a consequence, it is more relevant to consider that citizens do not vote with their feet but that they use local elections to reveal their preferences. This statement calls to take politics into account when studying local public services. It also calls for a clear understanding of the determinants of local authorities' expenditure.

Local expenditure allows to meet local needs, but it is subject to the constraint of available resources. The principle of free administration of public services implies that local communities can determine their own level of public services. However, this level is constrained by the financial resources of each municipality. Let us note that public spending is usually financed through taxation; and cities which suffer from high levels of debt and/or low levels of income have a limited ability to raise taxes. This leads to important disparities among local governments concerning the level of public services they produce. However, as exposed above, those disparities can also be the result of differences in citizens' preferences. Based on long statistical series, Gilbert and Guengant [2010] propose to measure the main determinants of disparities in local governments spending. Their results explain public spending disparities among municipalities in the following way: 59% are due to differences in resources, 26% are due to disparities in terms of specific requirements (for instance, depending on the geographic location, snow removal is of very, secondary or no importance), and 15% are due to "preferences" disparities. Let us note that those disparities raise two issues, in terms of equity and efficiency. In terms of equity, it appears that every citizen does not have access to the same level of quality of public services; and in terms of efficiency, it appears that the level of public services is

[1] In the United States, between 2% and 2.5% of inhabitants changed of Federal State of residence in 2005. The mobility index only lies between 0.1% and 0.2% for inhabitants of EU-15 countries in the same year [French Treasury Department, 2015]. French workers' mobility is moreover known to be particularly low [Lemoine and Wasmer, 2010].

partially determined by citizens' purchasing power, and does not perfectly meet the needs and/or preferences of local taxpayers. Gilbert and Guengant [2010]'s work highlights three key characteristics that must be taken into account when studying local services: (i) the characteristics of local communities (population, geographic area, income, level of debt, etc.), (ii) the characteristics of services that are provided (complexity, needs in terms of assets or skills, etc.), and (iii) the political and ideological dimensions (mayors' and citizens' preferences). Those three elements will be discussed throughout the present dissertation.

The Organization of Public Services: Theoretical Overview

Because of the major importance of public procurement, many scholars have investigated municipalities' choices regarding the management of their public services, using different theoretical approaches. Before to go through the differences and complementarity of those theoretical approaches, let us first highlight that they all have one point in common : all the theories described below were initially developed to analyze private-private relationships, and they were then extended to the analysis of public services management. We will go back to this fundamental point later in this General Introduction.

One of the main theoretical framework that is employed to analyze public procurement is the transaction cost theory. This theory arose in the early seventies with O. E. Williamson's desire to operationalize the seminal work of Coase [1937]. In the article *The Nature of the Firm*, Coase [1937] attempts to define firms' boundaries: he aims at explaining why the economy is populated by a number of firms instead of a multitude of independent self-employed people who contract with each other. Coase [1937] claims that firms exist because of the existence of transaction costs. Even if the market is (often) a powerful coordinating device, it incurs a range of transaction costs, and under certain circumstances the costs of the market exceed its

benefits (that is economies of scale, access to specialized competences and/or technologies, etc.). As a consequence, firms arise when they are able to organize internal production for the goods or services they need, and avoid transactions costs. The size of a firm (that is the number of "internal" transactions) is the result an optimal balance between production costs and transaction costs. Even though the work of Coase [1937] is of a fundamental importance, it also received criticisms, notably on the fact that it does not provide any clear and operational definition of the firm and of transaction costs. The contribution of Williamson [1975] is then to consider the transaction as the unit of analysis, and to develop an idiosyncratic terminology to establish a theory of the boundaries of the firm, known as the "make-or-buy" trade-off.

Williamson [1975] first provides a clear definition of transaction costs, distinguishing between *ex ante* and *ex post* transaction costs. The former correspond to the costs associated with: (i) the collection of information on future partners (reputation, litigation history, etc.), on future states of nature (contingencies), etc.; (ii) the elaboration of contracts (time and resources dedicated to think about and draft a contract); and (iii) eventual guarantees (deposit until product/service delivery). *Ex post* transaction costs correspond to the costs associated with (i) monitoring (that is the supervision of the performance of suppliers); (ii) enforcement (to compel obedience to contractual obligations); (iii) adaptation (renegotiations due to unanticipated contingencies and/or contractual mal-adaptations); and (iv) potential litigation.[2]

Then, Williamson [1975] defines a set of assumptions for his theory. Those assumptions are of key importance, because they determine the set of feasible contracts. Williamson [1985] therefore defines a "contracting man" (as opposed to the "ra-

[2]It is important to note that those transaction costs are defined as "direct" by opposition to "indirect" transaction costs which correspond to the necessary legal and institutional conditions to ensure transactions like arrangements for trade (organized markets, etc.), and the production of information concerning the goods and services (quality signals, prices, normalization systems, control systems, regulation). See North [1987].

tional man"), who has a bounded rationality (people are "*intendedly rational, but only limitedly so*", Simon [1961, page 24]) and can behave opportunistically.[3] Put together, those two assumptions imply that every feasible contract is incomplete (bounded rationality prevents from anticipating all future contingencies and writing them in a formal contract), and contractual incompleteness opens room for opportunistic behaviors. Nonetheless, contract incompleteness and opportunism are only problematic for certain types of transactions. Indeed, Williamson [1975] defines transaction characteristics, which influence the level of transaction costs. Transactions differ along three dimensions, namely uncertainty, frequency, and asset specificity. The degree of uncertainty refers to the conditions which will prevail during the execution of the contract. Uncertainty can relate to *behavioral uncertainty* (that is uncertainty about partners' behaviors), or *environmental uncertainty* (that is the future evolutions of the environment); and those uncertainties impact positively the level of transaction costs. Frequency corresponds to the frequency of transactions between the two same partners, and increases the level of transaction costs, since partners have more occasions to behave opportunistically.[4] Finally, and most importantly, transactions differ according to the level of specificity of the investments they incur.

As underlined by Williamson, asset specificity is "*the most critical dimension for describing transactions*" [Williamson, 1985, page 30]. Asset specificity refers to the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrificing its productive value (*i.e.* without some loss in productivity and/or adjustment costs).[5] Relationship-specific assets give rise to a *fundamental*

[3]Opportunism is defined by Williamson [1975] as self-interest seeking with guile, that is efforts to mislead, disguise, and confuse.

[4]Let us note that there is no consensus on that point since, for instance, Masten [1996] argues that frequent transactions lead to the development of mutual understandings, reputation effects, routines, contractual habits and trust. Frequency consequently provides incentives to behave well, because partners anticipate future business opportunities, and the need for formal mechanisms of coordination is lowered.

[5]Asset specificity can take many forms identified by Williamson [1983]: site specificity (natural resource available at a certain location and movable only at great cost, process that has to be located close to other assets), physical asset specificity (specialized machine tool or complex computer system designed for a single purpose), human asset specificity (highly specialized human

transformation, since an initial transaction between partners creates a transaction residual (or "quasi-rent") that favors a continued trading relationship. In other words, when a firm acquires specialized assets (capital, knowledge, skills) through a transaction, it is better prepared than other firms for further transactions. This fundamental transformation is a source of quasi-rent appropriation issues [Klein et al., 1978]. This quasi-rent can be defined as the difference between the revenue the seller would normally receive according to the original terms of the contract; and the revenue it must receive in order not to exit the relationship after an investment in a specific. The quasi-rent increases with the degree of specificity of investments, and parties behave opportunistically in order appropriate the latter ("hold-up").

Altogether, those elements lead to the two main propositions of the transaction cost theory: the more a transaction requires investments in specific assets, and the higher the degree of uncertainty, the more outsourcing strategies are be difficult implement. The appropriate governance structure therefore depends on transactions characteristics (*alignment principle*). For low levels of specificity and uncertainty, spot contracts on the market are preferred. For intermediary levels, hybrid forms encompassing safeguard clauses[6] can be chosen. Then, for high levels of uncertainty and asset specificity, integration is preferred.

The transaction cost framework is frequently employed to investigate the management of public services. Indeed, by analogy, this theory can allow to study the the choice of public authorities between the externalization of a public service ("buy") or in-house provision for the latter ("make"). Crocker and Masten [1996] therefore generate a decision-tree for the management of public services, based on the

skills, arising in a learning by doing fashion, that can only be used in a particular firm), dedicated assets (discrete investment in a plant that cannot readily be put to work for other purposes) and time specificity (an asset is time specific if its value is highly related to its ability to reach the user within a specified, relatively limited period of time).

[6] Ménard et al. [2003] define safeguard clauses as mechanisms assuring a minimum of security to the contracting parties, generating some confidence between partners, and allowing the parties to adapt to unexpected contingencies. Those mechanisms can take several forms and are not always included in the contract.

framework of transaction cost theory (see the left-hand part of Figure 5). First, governments have to consider the degree of asset specificity: if the latter is low, a public service can easily be contracted out, using spot contracts on the market. Conversely, when asset specificity is high, governments have to evaluate the uncertainty and complexity of the environment. When uncertainty is low, the service can still be contracted out, but using long-term contracts awarded through call for tenders [Demsetz, 1968]. Finally, when asset specificity and uncertainty are high, in-house provision should be preferred.

Let us note that if transaction cost theory offers an appropriate theoretical framework to study the make-or-buy question, this theory *a priori* does not explain why organizations sometimes decide to split the total volume of a good, and produce a portion internally, while buying another portion on the market (that is, to resort to "plural governance"). Following the transaction cost framework, plural governance would result from distinct decisions made for distinct transactions, and the organizations would not seek to put two modes of governance together [Pénard et al., 2004]. However, some authors argue that plural governance is a way to decrease *ex post* transaction costs associated with externalization [Dutta et al., 1995]. The reasoning is that by maintaining a level of in-house production, organizations have a better ability to measure and monitor the costs and performance of their suppliers, because they can judge the latter against theirs (in other words, plural sourcing can be used in benchmarking strategies). Moreover, maintaining in-house provision can be a way to circumvent the issues linked to the "fundamental transformation" described above [Williamson, 1985], because it reestablishes the credibility of backward integration in case of opportunistic behaviors [Dutta et al., 1995].

Transaction cost theory is the framework which is the most frequently employed to analyze public services, but other theoretical frameworks, initially developed in private settings, were also extended to the analysis of public procurement. In the following, we will therefore briefly describe the contributions of the incentive theory,

the incomplete contracts theory, and the resource-based view. The differences and complementarity between those theories and the transaction cost framework will be discussed.

The incentive theory focuses on the difficulties associated with information asymmetries in contractual relationships. While the assumptions of this theory are very different from the ones derived in the transaction cost framework (agents are considered as perfectly rational and the environment is risky rather than uncertain, which leads to complete contracts), the recommendations of the two theories are close. In the incentive theory perspective, the asymmetry of information leads to the existence of an informational rent, that the better informed party can use to maximize its own interests. More specifically, this theory identifies two types of opportunistic behaviors due to asymmetric information: adverse selection and moral hazard. Adverse selection occurs before the signature of contracts, when an unalterable characteristic of the good or service provided, and/or of the supplier, is unobservable. Buyers who cannot distinguish between "good" and "bad" suppliers bear the risk of choosing an inappropriate partner [Akerlof, 1970]. Moral hazard occurs after of the signature of a contract: once a seller has been selected, the latter can use his informational advantage (often due to his better knowledge of the information and/or to his greater expertise) to reduce his level of effort, at the expense of the buyer. Therefore, unlike transaction cost theory which investigates the most appropriate governance structure for the supervision of different types of transactions, the central question of the incentive theory is to determine what types of mechanisms have to be implemented in order to encourage the parties to reveal their private information, and to provide the optimal level of effort. The objective of the contract is therefore to develop monitoring, control, and incentive mechanisms to allow information disclosure and compliance to the revealed information (see for instance Laffont and Tirole [1993]). When this framework is extended to the study of public services, it allows to investigate when services should be externalized, and the types of safeguard mechanisms that should be included in delegation contracts. For high levels of information asymmetry, and when the mechanisms which allow

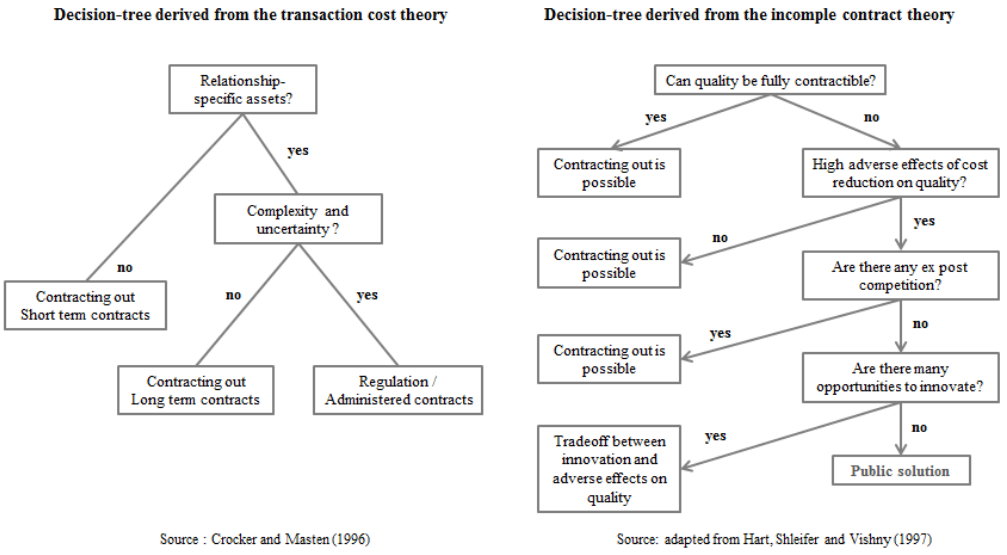
to circumvent the asymmetries are very complex and costly (or even nonexistent), in-house provision should be preferred. It is possible to build bridges between transaction cost theory and incentive theory, as specific investments (notably in terms of specialized expertise) and behavioral uncertainty are major sources of information asymmetries and, consequently, of monitoring difficulties.

The motivations which gave rise to the incomplete contracts theory [Grossman and Hart, 1986; Hart, 1995] are the same than the ones which motivated the elaboration of the the transaction cost theory: the authors intend to propose a good formalization of Coase [1937]'s theory of the firm. Nonetheless, those two theories rely on very a different set of assumptions. The incomplete contracts framework indeed considers perfectly rational agents, and explains integration strategies by the concept of ownership (or property rights) and control. Both theories assume that contracts are incomplete, but the source of contractual incompleteness differs among the two frameworks. In the incomplete contracts theory perspective, incompleteness does not come from the parties' inability to anticipate all future contingencies, but from the inability of third parties to verify some aspects of the relationship. Indeed, the incomplete contracts theory defines "unverifiable" actions (as opposed to "observable" actions), that parties cannot always observe and verify, and that they cannot to describe in a contract. Those unverifiable actions cannot be enforced by a third-party (for instance, a judge). For example, it is not possible to contract on the willingness to innovate. However, *ex post* innovations which were not foreseen by the initial contract can increase the surplus of the relationship. In such a case, and like in the transaction cost theory, contractual incompleteness leaves room for opportunistic behaviors, as parties may try to appropriate the surplus, and adapt the contract to their benefit. By backward induction, this situation leads to a sub-optimal level of investment. The incomplete contracts theory shows that this problem can be solved by an adequate distribution of *ex ante* ownership.

Again, this framework initially developed to study private relationships was extended to the analysis of public services, notably in the seminal article of Hart et al. [1997]. The authors describe two types of effort/investment that can be made by the manager of a service (who can be a private manager, or a civil servant). On the one hand, "cost reduction" investments enhance the manager's benefit, but deteriorates service quality. On the other hand, "quality improvement" investments increase the costs while improving the quality. When those two types of effort are perfectly contractible, an optimal level of investment can be achieved. However, when the investments are non verifiable, the choice of the governance structure impacts the level of effort. More precisely, Hart et al. [1997] find that the externalization to a private firm leads to stronger incentives to reduce costs than the management by a civil servant; and it can also lead to stronger incentives to improve quality if property rights are effectively distributed. Hence, the outsourcing of public services can allow to tackle the issue of public managers' weak incentives. Therefore, Hart et al. [1997]'s reasoning allows to obtain a decision-tree for the management of public services. First, if the efforts of parties are fully contractible (that is, verifiable), externalization should be preferred. Conversely, if there are non-verifiable dimensions, the potential adverse effects of cost reduction on quality should be considered. At this point, the sensitivity of citizens becomes a key parameter: if citizens do not care about the adverse effects on quality (or, at least, prefer a lower price-quality ratio), externalization is still preferred. Hart et al. [1997] illustrate that point with the example of prisons management in the United States; a sector in which many quality dimensions are not contractible, for instance the use of violence. The authors show that private prisons are almost exclusively youth correctional facilities (for which citizens care less about escapes), while maximum security prisons are always public (citizens care a lot about escapes). Hart et al. [1997] therefore find that direct public management is the best alternative in well-identified cases, namely when there is little opportunity to improve the quality and when the adverse effects of cost reductions on quality are important. Furthermore, although this effect is not directly mentioned by the authors, public provision may also be preferred when the competition between operators is low, since low levels of

competition decreases the incentives to improve quality (see Figure 5). Let us note that the importance of market competition is also underlined in the transaction cost works which analyze public services. For instance, Demsetz [1968] and Williamson [1976] argue that the possibility to use "competition for the field" depends on the characteristics of the transaction (*i.e.* the level of uncertainty about technology or demand), but also on the industry's characteristics: insufficient market competition lowers the expected benefits associated to externalization, and increases the likelihood of collusive behaviors.

Figure 5: Decision-trees for the choice of public services governance structure



The various assumptions derived by the theories described above lead to very different testable propositions when they are applied to the analysis of public services. Let us take the example of contractual renegotiations, which is the topic of the first chapter of the present dissertation. At one end of the theoretical spectrum, incentive theory focuses on the adverse selection and moral hazard issues, and the principal (that is, the party who detains less information) must commit not to renegotiate, and to accept *ex post* inefficiencies. *Ex post* rent seeking should be tackled through renegotiation-proof contracts [Dewatripont, 1989], since renegotiations induce inefficiencies [Gagnepain et al., 2013]. At the other end of the spectrum, incomplete

contracts theory suggests that renegotiations are not only unavoidable, but also beneficial when parties need compensation for investments which were not foreseen by the initial agreement (that is, *ex ante*), and which become verifiable *ex post* [Grossman and Hart, 1986; Hart, 1995]. Renegotiations are then necessary adaptations, which fill in contractual blanks; but they can lead to appropriations of the surplus ("hold-up"). Finally, transaction cost theory offers a more balanced view, by recognizing that contracts are inefficient governance structures which must be adapted to the environment, because of the bounded rationality of parties. Renegotiations are then necessary because of contractual mal-adaptations, even though they remain a risky adaptation process because of potential opportunistic behaviors [Crocker and Masten, 1991, 1996; Crocker and Reynolds, 1993; Saussier, 2000]. Conversely to the incomplete contracts approach, renegotiations in a transaction cost framework do not only happen when additional investments are realized.

Finally, the resource-based view of the firm [Penrose, 1959; Wernerfelt, 1999; Teece, 1982; Poppo and Zenger, 1998; Leiblein and Miller, 2003] focuses on firms' relative resources and capabilities to explain their organizational choices. Following that approach, the capabilities needed to produce a good or a service at low cost are costly to develop. Organizations therefore focus on the activities they are "good at": when they have the capabilities to produce at low cost, compared to their competitors, organizations will prefer in-house provision. Conversely, when their capabilities to produce at low cost are lower than those of their competitors, organizations resort to the market. This approach is highly different than the one proposed by the transaction cost theory, as the unit of analysis is not the transaction, but the firm. However, some authors argue that the two theories share strong similarities. Firms' capabilities indeed do not only refer to their ability to produce at low cost, but it also refers to their ability to write contracts that protect them from contractual hazards [Mayer and Salomon, 2006]. The authors indeed claim that *"strong technological capabilities improve a firm's ability to govern transactions, making outsourcing feasible despite certain contractual hazards"* [Mayer and Salomon, 2006, page 942]. O.E. Williamson himself recognizes that transaction cost

theory and resource-based view *"deal with partly overlapping phenomena, often in complementary ways"* [Williamson, 1999b, page 1098]. The mix of both theories therefore enables to better understand the chosen organizational forms [Silverman, 1999; Leiblein and Miller, 2003]. This statement is also true for the analysis of public entities' choices, and some empirical studies simultaneously take into account the characteristics of transactions and the capabilities of governments to explain make-or-buy choices for public services (see for instance Porcher [2016]).

Let us conclude this section with some comments about the New Public Management approach. As highlighted before, the theories described above have in common the fact that they were developed in private settings first, and then applied to public settings. However, none of the theoretical arguments has so far been derived specifically for public entities. The application of private theories to public settings finally refers to arguments developed in the New Public Management literature [Savas, 1989]. The authors in New Public Management indeed minimize differences between public and private management. Following that approach, governments are encouraged to promote competition and consumer responsiveness in service delivery, and to import management rules from the private sector; which relates to a "citizen-as-consumer" approach, where citizens are only considered as consumers of public services [Savas, 1989; Hood, 1991; Dunleavy and Hood, 1994]. More recent theories challenge this view, and the latter will be described later in this General Introduction. For now, let us describe recent empirical investigations of local public services.

The Organization of Public Services: Recent Empirical Developments

Those theoretical corpus gave rise to a large set of empirical studies, that analyze make-or-buy choices of local governments in the United States (see for instance Brown and Potoski [2003], Levin and Tadelis [2010], and Hefetz and Warner [2012]), but also in France (see for instance Porcher [2016]). The renegotiation of public contracts is also of major interest in the empirical literature [Beuve et al., 2015]. Recent empirical studies usually test hypotheses derived from the various theories described above. In this subsection, five recent empirical works are depicted [Brown and Potoski, 2003; Levin and Tadelis, 2010; Hefetz and Warner, 2012; Porcher, 2016; Beuve et al., 2015], in order to highlight the fact that they include theoretical explanations of the transaction cost theory, the incomplete contracts theory, and the resource-based view.

Brown and Potoski [2003] investigate the choices of United States local governments, using data issued by the International City/County Management Association (ICMA). The authors distinguish between complete public provision, complete externalization to private firms, joint contracting (that is both public and private provision, or complete externalization to several vendors), externalization to non-profit companies, and contracting with other governments. Both the transaction cost theory and the incomplete contracts theory are mobilized to construct testable hypotheses. For instance, the level of specificity of assets is positively associated with the likelihood to rely on internal provision.[7] The argument typically refers to the transaction cost framework, as the level of asset specificity increases the costs associated to externalization. However, some arguments refer more to the incomplete contracts theory. For instance, the authors hypothesize (and empirically find) that services which are extremely difficult to measure (that is, when contract

[7] More specifically, internal provision increases with asset specificity, but for very high levels of specificity, governments reduce internal production. Brown and Potoski [2003]'s argument is that highly asset-specific services are also associated with high fixed costs that some municipalities cannot handle.

outcomes are not measurable and governments cannot monitor activities) are more likely to be produced in-house.[8] This argument is therefore in line with the incomplete contracts theory, which key argument refers to the verifiability of information, as exposed in previous subsection. Those two types of hypotheses, issued from two distinct bodies of theoretical literature, are empirically supported in Brown and Potoski [2003].

Levin and Tadelis [2010] use data issued by the ICMA, as Brown and Potoski [2003]. The authors distinguish between contracting with private companies, contracting with public companies, and in-house provision of public services. Again, this empirical investigation is based on arguments developed by the transaction cost theory and the incomplete contracts theory. For instance, the authors find that a higher level of contracting difficulties is associated with a lower level of externalization. Their index measuring contracting difficulties mixes transaction cost and incomplete contracts approaches. Indeed, in order to construct that index, public managers are asked to assess services according to (i) provider scarcity or lock-in effects that can be due to asset specificity, and (ii) the difficulty to measure and monitor the quality of service provision.[9] While the first dimension (asset specificity and lock-in effects) clearly refers to a transaction cost argument, the second one (contracting difficulties) is based on the incomplete contracts approach. Moreover, the authors use measures of "resident sensitivity" of services. This aspect relates to the argument developed by Hart et al. [1997] in their adaptation of the incomplete contracts theory to a public setting. Levin and Tadelis [2010] find that a greater level of sensitivity is associated to less private sector contracting, and more in-house provision.

[8] The authors find that the probability of joint contracting increases with the difficulty to measure services; and that for very high levels of difficulty, governments prefer in-house provision.

[9] This survey will be discussed in detail in Chapter 2.

Hefetz and Warner [2012]'s empirical investigation is again based on the ICMA survey, and as Levin and Tadelis [2010] it compares externalization to private firms, externalization to public companies, and in-house provision of public services. Like Brown and Potoski [2003] and Levin and Tadelis [2010], the authors include measures of asset specificity and contract management difficulties. As exposed above, the combination of those measures reflects a combination of transaction cost and incomplete contracts theories. Interestingly, the authors also include a measure of public interest in service delivery. If this measure can be compared to Levin and Tadelis [2010]'s index of "resident sensitivity", the authors claim that their index captures citizens' willingness to engage and participate in the process of local service delivery. The assertion of the authors is that citizen interest must be taken into account by local governments, in order to preserve opportunities for citizen engagement. Surprisingly, Hefetz and Warner [2012] do not find that greater citizen interest is associated with higher levels of in-house provision; but their results indicate that it leads to lower levels of externalization to private firms, and higher levels of outsourcing to public companies.

Porcher [2016] combines two theoretical approaches (the transaction cost theory and the resource-based view) to analyze the resort to concurrent sourcing by French municipalities in the water sector. The author defines concurrent sourcing as the ratio of water bought by a city i to other neighboring municipalities over the total volume of water provided by city i. The first hypothesis investigated by Porcher [2016] typically refers to a transaction cost argument. He indeed finds that the greater a municipality's level of complexity in producing directly the good, the larger the level of concurrent sourcing. The rationale behind this hypothesis is that the level of complexity increases the cost of in-house production compared to the cost of the resort to the market. A city will then buy more water when the cost of in-house provision increases, other things being equal. However, the author also claims that the level of concurrent sourcing can be explained by resource-base view's theoretical arguments. For instance, he finds that the greater a municipality's cost-efficiency, the smaller the level of concurrent sourcing. The rationale here is that municipal-

ities prefer in-house provision when their capabilities are high, that is when the cost of internal provision is low. As exposed before, this argument is based on the resource-based view approach.

Finally, Beuve et al. [2015] investigate the occurrence of public contract[10] renegotiations in the French parking sector. The authors highlight that there is no consensus about the determinants of renegotiations, as the latter can be motivated by necessary adaptations, or by rent-seeking behaviors. According to the incentive theory, renegotiations represent a lack of compliance with the initial contractual terms; renegotiations then reduce the strength of incentives, and lead to a loss of overall surplus. Similarly, the transaction cost approach states that renegotiations imply losses, because of opportunistic behaviors (that is, because of the efforts of parties to evade the initial contractual terms); however, this approach also highlights that there exists an optimal renegotiation rate. According to the incomplete contracts theory, renegotiations are welfare-improving as they allow the parties to incorporate contingencies revealed *ex post*. Consistently with the transaction cost approach, Beuve et al. [2015]'s results highlight that there exists an optimal frequency of renegotiation, suggesting that renegotiation should not necessarily be interpreted as a sign of the failure of the relationship. They also find that the scope of renegotiations (that is, the number of dimensions targeted by renegotiations) influences the probability of contract renewal. Finally, the authors argue that only some renegotiations seem to be welfare-improving (since they increase the probability of renewing a contract).

Recent developments in the empirical literature therefore provide useful insights about municipalities' management of their public services. As highlighted throughout this section, empirical investigations usually mix theoretical approaches, and find support for arguments developed in the transaction cost theory [Brown and Potoski, 2003; Levin and Tadelis, 2010; Hefetz and Warner, 2012; Porcher, 2016;

[10] That is, outsourcing contracts concluded between a municipality and a private firm.

Beuve et al., 2015], the incomplete contracts theory [Brown and Potoski, 2003; Levin and Tadelis, 2010; Hefetz and Warner, 2012; Beuve et al., 2015] and the resource-based view [Porcher, 2016]. In the same way, the empirical studies conducted in the chapters of the present dissertation will often refer to various assumptions from those theories. However, the major claim of this dissertation is that the specificity of public management is generally under-studied, or even minimized, in recent empirical works. Next subsection therefore emphasizes the major differences between public and private management, and insists on the key role of political factors in explaining the attitudes of public managers.

The Specificity of Public Management

While the literature in New Public Management asserts that the public sector should import management rules from the private sector to solve its inefficiencies [Savas, 1989; Hood, 1991; Dunleavy and Hood, 1994], another strand of literature in strategic management investigates the differences between the two sectors. For instance, Ring and Perry [1985] argue that the public sector cannot be judged against normative models developed in the private sector, because public and private organizations are inherently different.

Before exploring the differences between those two sectors, it is worth providing a definition of what shall be referred as "public organizations" as opposed to "private organizations". There is no clear-cut answer to that question. "Publicness" has first been defined as the extent to which an organization is affected by political authority [Bozeman, 1987]. Nonetheless, Bozeman [1987] highlights that, under this definition, every organization is public: even a private firm operates under a set of rules established by a government. The degree of publicness being difficult to determine on the basis of this definition, authors in strategic management have relied on three criteria to distinguish between public and private organizations: ownership, funding and control [Perry and Rainey, 1988]. As a matter of fact, when a govern-

ment judges that a sector serves a public purpose, it can decide either to own the organizations of the sector, or to contract with private companies, or to establish a regulatory governance system [Meier and O'Toole, 2011]. Meier and O'Toole [2011] recommend to adopt a unique operational definition of publicness in a given study, as none of the three criteria fully enfold the concept of publicness, and each of them leads to measurement errors. In this dissertation, we will therefore oppose public contracts to private contracts (in Chapter 1), and in-house provision to externalization to companies (in Chapters 2 and 3).

Meier and O'Toole [2011] expect the organizations which are located closer to the "publicness" pole of any chosen metrics to differ from those locate less close to that pole. One should now understand why these organizations differ. Ring and Perry [1985] explain that the differences between public and private sectors arise from the fact that they operate in highly different environments. The authors notably argue that public organizations are much more permeable to the external environment: they must cope with the scrutiny of media and of constituents. Moreover, public managers are subject to more artificial time constraints (*e.g.* elections) than private managers. More recently, Spiller [2008] and Moszoro et al. [2016] put forward the same type of argument: public contracts differ from private ones because the contracting partners are subject to an additional type of opportunism, namely third-party opportunism. This notion of third-party opportunism is very close to the one of permeability to the external environment: interested external groups (for instance political competitors) have incentives to challenge public contracts, and have the means to do so.

These different environments lead to intrinsic differences between the two sectors. Publicness will, for example, theoretically impact organizational structures (public organizations suffer from more bureaucracy and red tape), and organizational goals (public organizations are characterized by multiple, complex, and vague goals) [Rainey and Bozeman, 2000; Boyne, 2002]. Several empirical studies have tested

these organizational differences,[11] and found mixed evidence of the impact of publicness on organizations. In the same vein, Moszoro et al. [2016] are the first to empirically investigate the difference between public and private contracts, and find that public contracts are less "flexible" than private agreements.

Those recent developments clearly call for an investigation of political factors in order to grasp the specificities of public management. Rather than focusing on the observed or perceived organizational differences themselves [Boyne, 2002], we aspire to demonstrate the direct impact the political environment has on organizations characterized by high degrees of publicness. This dissertation therefore studies two specific mechanisms: the political manipulations of mayors when elections draw near, and the effect of the ideology of mayors on their sourcing decisions.

The political cycles literature highlights why and how politicians manipulate economic outcomes when elections draw near, in order to enhance their reelection perspectives. The theoretical literature has built upon different sets of assumptions to establish that policy makers have incentives to use economic policy to increase their reelection chances. The idea is that voters will base their electoral choice on recently observed economic outcomes. First, the seminal work of Nordhaus [1975] shows that the political tradeoff between inflation and unemployment is impacted by policy makers' electoral concerns, if voters' expectations are backward looking. This last theoretical assumption being contrary to the paradigm of rational expectations, a more recent wave of literature reached the same conclusions with rational expectations and asymmetric information. Rogoff and Sibert [1988] and Rogoff [1990] build an adverse selection model to argue that efficient incumbents use taxes, spendings and money growth to signal their type to voters before elections. The assumption is then that voters are rational and forward looking, but imperfectly informed about the incumbent governments' competence level. Policy manipulation is used as a

[11] See Rainey and Bozeman [2000] and Boyne [2002] for a review and a discussion of the empirical literature on goal complexity and ambiguity, organizational structure, and work-related attitudes and values; and Rainey and Jung [2015] for further evidence on goal ambiguity.

signal by the more competent governments to indicate their type to voters before elections. Persson and Tabellini [2002] and Shi and Svensson [2006] use the same assumptions within a moral hazard framework and show that incumbents still engage in pre-electoral policy manipulations before elections. These moral hazard models contrast with the adverse selection ones in the sense that all governments (*i.e.* high and low competence level) manipulate the budgets before elections. Martinez [2009] introduces politicians' reputation concerns in his model to explain why politicians have stronger incentives to influence election results when elections get closer. Finally, Baleiras and da Silva Costa [2004] construct a model of public budget cycles with ultra-rational agents and full symmetric information.[12]

A large number of empirical studies has attempted to test these theoretical predictions. A first strand of literature supported these forecasts at the national level in industrialized countries,[13] as well as in developing economies.[14] At the local level, Blais and Nadeau [1992] and Petry et al. [1999] find that electoral cycles impact the spendings of Canadian provinces. On the same subject, Baleiras and da Silva Costa [2004], and Veiga and Veiga [2007], assess the presence of pre-electoral increases in local expenditure before Portuguese municipal elections. Veiga and Veiga [2007] not only show that total municipal expenditure increases before elections, but also that its composition changes, favoring items that are highly visible. Likewise, several studies have been conducted on French municipal data. Binet and Pentecôte [2004] and Foucault et al. [2008] find that French local governments increase their spendings prior to municipal elections. But the budget is not the only variable that governments are prone to influence. Hence, Mayer [1995] finds that before presidential elections, contract awards significantly increase in the United States. In France, Chong et al. [2014] show that electoral considerations of mayors influence the timing of public procurement. Importantly, Chong et al. [2014] find that elec-

[12] In this model, political cycles still arise when policy makers maximize a utility function which takes into account the income they could earn in the private sector in case of electoral defeat.

[13] See for example Tufte [1980] and Alesina et al. [1992]

[14] See Schuknecht [1996], Schuknecht [2000], Kraemer [1997], Gonzalez [2002], Brender and Drazen [2005], Shi and Svensson [2006]

toral cycles are stronger for projects that are highly visible to the voters, following the assessment of Veiga and Veiga [2007].

However, and to the best of our knowledge, electoral cycles have never been investigated by public administration scholars. The first chapter of this dissertation therefore focuses on this particular aspect, and proposes to investigate how mayors' political considerations (that is, their desire to be reelected) affect their management of outsourcing contracts concluded with private companies. But the proximity of elections is not the only political factor of interest when studying the behavior of elected mayors: their "ideology" may also play a role in explaining their decisions.

The ideology of elected officials is a concept that is challenging to measure, because it requires to perfectly understand what shall be called "ideology". In order to better comprehend this concept, Kalt and Zupan [1984] distinguish between "pure" and "impure" ideology. The manifestations of pure ideology give the individuals the satisfaction of knowing that they have improved the situation of others. In contrast, impure ideology implies that political representatives may serve their own interests, for instance their desire to be reelected; politicians may then rely on the dictates of an ideology as a shortcut to the service of their constituents' goals. When public administration scholars include a measure of ideology, they usually consider the political affiliation of mayors [McGuire et al., 1987; Lòpez-de Silanes et al., 1997; Warner and Hebdon, 2001; Levin and Tadelis, 2010; Brown et al., 2008]. This type of ideology must be seen as "impure" in Kalt and Zupan [1984]'s categorization, and measures the willingness of mayors to please the constituents that belong to their political affiliation. This idea is further developed in Chapter 2.

The influence of mayors' ideology on their decisions regarding the management of public services is under-studied; and when ideology is taken into account, it is most of the time found to be non-significant (see Bel and Fageda [2007]). However, a

recent set of studies finds that right-wing mayors may favor the externalization of public services to the private sector [Picazo-Tadeo et al., 2010; Sundell and Lapuente, 2012; Gradus et al., 2014]; but the left-wing affiliation of mayors does not explain in-house provision. This dissertation proposes to contribute to those recent works, and investigates the influence of municipalities' history of ideology on their propensity to produce public services in-house (Chapter 2), and on their propensity to rely on plural sourcing for one public service (Chapter 3).

Summary of Chapters

As presented in this General Introduction, the aim of this dissertation is to empirically investigate the influence of political factors (pre-electoral manipulations and mayors' ideology) on the management of local public services. This investigation is conducted at two stages of public service delivery. The first chapter indeed studies political manipulations of public contracts; that is, the contracts concluded with the private sector once a municipality has decided to outsource the management of a public service. In other words, this first chapter investigates *ex post* (after the externalization decision) political manipulations. The second and third chapters focus on the *ex ante* influence of ideology; that is, this impact of mayors' political affiliation on their sourcing decisions.

The remainder of this dissertation is organized as follows. First, we provide a concise summary of each chapter. The first chapter investigates the political cycles of public contracts renegotiations. The second chapter studies the influence of mayors' political affiliations on their make-or-buy decisions. The third chapter focuses on "make-an-buy" situations, that is the simultaneous resort to the market and to internal provision for a same public service. A final section concludes, and highlights the main contributions of this dissertation, the limits of our works, and the avenues for future research.

The externalization of local public services to the private sector induces long-term agreements with companies. This first chapter empirically investigates a fundamental difference between those public contracts (that is, contracts that are concluded between a public authority and a private firm) and private contracts (that is, agreements that are concluded between two private parties): public contracts are, unlike their private counterparts, permeable to their political environment. We indeed advocate that, to grasp the specificity of public contracting, the influence of political factors should be investigated.

A recent strand of literature attempts to test the differences between the *ex ante* design of public and private contracting [Beuve et al., 2014; Moszoro et al., 2016]. These works show that public contracting features more rigidity clauses than private contracting in their *ex ante* setting. Our study contributes to this growing literature by comparing the two types of contracting, focusing on *ex post* adjustments of contracts, that is renegotiations. Renegotiations are, indeed, at the core of the success of transactions, and their determinants should be studied with care. We particularly aim to demonstrate that mayors manipulate public contract renegotiations before local elections to please the electorate and enhance their probability of being reelected. We thus test the presence of political cycles in the patterns of public contract renegotiations. In that sense, our study directly tests the hypotheses derived by Ring and Perry [1985] and Boyne [2002], who postulate that public sector managers' attitudes are influenced by the artificial times constraints they face.

This chapter employs on an original and exhaustive dataset comprising every renegotiation from the entire set of contracts (public and private) signed by the French leader of the parking industry between 1968 and 2008. The set of public contracts consists of every contract signed by this firm with a municipality. But this firm

also forms agreements with private parties for similar services . For each contract and for every year, we have information on the total number of renegotiations, and we know which aspect of the initial contract was renegotiated (price, work, finance and others). Therefore, we use an exhaustive dataset consisting of 650 public and private contracts with 1,110 amendments over a 50-year period.

We use a difference-in-difference (DiD) methodology to show that public and private contracts are differently affected by electoral periods: compared with private contract renegotiations, public renegotiations significantly increase before local elections. These pre-election renegotiations in particular modify end-user fees or the financial dimensions of the contracts (*i.e.* the remuneration of one of the parties). Moreover, this chapter investigates the determinants of public renegotiations, and finds that political competition plays a crucial role in explaining pre-electoral manipulations.

In other words, we show that otherwise similar transactions differ based on the identity of one of the partners (public vs. private). This result not only confers additional support to Spiller [2008], but also contributes to the strategic management literature. Our study is indeed the first to empirically test the permeability of public organizations to their political environment [Boyne, 2002; Ring and Perry, 1985]. Our results also go further, and show that public managers favor their personal goals (that is their personal political ambitions) over the organizations' goals.

Chapter 2. When does Ideology Matter to Explain Make-or-Buy Choices?

The second Chapter focuses on the influence of mayors' ideology (that is, their political affiliation) on their make-or-buy decisions for local public services. The existing literature identifies a range of factors that influence how governments choose to produce services, and the latter can be grouped into four categories: economic efficiency, fiscal restrictions, interest groups, and ideological attitudes [Bel and Fageda, 2007].

Curiously, Bel and Fageda [2007] find that the ideology of mayors in office is the less studied motive. Moreover, its impact is most of the time found to be non-significant, and the authors conclude that the debate over privatization has moved from ideology to pragmatism [Hefetz and Warner, 2004; Bel and Fageda, 2007]. This result is surprising, and especially in European contexts, as it is part of collective imagination that left-wing governments generally fight for greater state intervention. Therefore, a recent set of studies challenges Bel and Fageda [2007]'s statement, and some authors do find a role of ideology in explaining externalization decisions [Picazo-Tadeo et al., 2010; Sundell and Lapuente, 2012; Gradus et al., 2014]. Picazo-Tadeo et al. [2010] indeed highlight that most previous studies use cross-sectional data, and do not measure ideology at the time the externalization decision was taken. However, while the papers that use more accurate measures of mayors' ideology find that right-wing mayors conclude more contracts with the private sector, they surprisingly do not find any impact of left-wing affiliations on the propensity to (re-)integrate public services Gradus et al. [2014]. This finding is puzzling: if right-wing mayors prefer externalization, why don't left-wing mayors try to re-integrate public services?

The aim of this chapter is to show that the management of public services is path-dependent, *i.e.* strongly connected to choices made by previous politicians. We

investigate how the history of cities' ideology explains the way they allocate contracting out and in-house provision in the present. The reasoning is that once a public service has been externalized, current mayors' hands are tied for two reasons: first, because of the length of delegation contracts concluded with the private sector, and second because of the loss of competencies that externalization implies.

The dataset employed in this chapter describes the mode of provision of a range of 7 services (childhood care, collective catering, parking lots, street lighting, waste collection, water distribution and water treatment) for 156 French municipalities of more than 10,000 inhabitants. Our work includes a careful examination of the impact of successive mayors' ideology (number of left-wing mayors over a 26-year period, which represents 5 elections) on the propensity to produce services internally. We also investigate the impact of the sensitivity of residents (that is the degree to which citizens are sensitive to problems that might be encountered in the provision of each service) on in-house provision. We indeed replicated Levin and Tadelis [2010]'s survey and methodology to assess the characteristics of the 7 public services. We finally control for the impact of economic factors (population and density of cities), fiscal stress (level of debt per capita), and the presence and strength of interest groups (unemployment and income per capita) – all these variables being measured over the 2006-2013 period.

Our results indicate that today's proportion of public services produced in-house is positively associated to the extent to which municipalities have been governed by left-wing mayors in the past. Moreover, we find that the impact of ideology is more important for services that are characterized by high levels of resident sensitivity. Finally, we highlight that it is more important to measure ideology over long periods of time when services are characterized by long-term contracts on the market.

Chapter 3. Plural Governance for Local Public Services: a Strategic Choice?

The last chapter focuses on a particular sourcing mode for local public services: plural governance. Most of the studies conducted on local data compare direct public provision (*i.e.* in-house provision, when governments produce public services themselves, with their own equipments and employees) to contracting out. But governments actually face a more complex set of choices than the simple make-or-buy dichotomy. In particular, a city can simultaneously opt for the "make" and "buy" alternatives for the provision of the same public service, and thus produce a portion of the service themselves, while contracting with external (public or private) companies. This "plural alternative" has actually been studied in private settings first, and especially in the context of franchising. The literature based on private settings opposes two approaches. On the one hand, some scholars consider the plural alternative as a second-best choice, and organizations would normally prefer one of the two polar solutions in the absence of constraints [Caves and Murphy, 1976]. Following that approach, plural governance is not sought *per se*, and is not stable over time [Pénard et al., 2004]. On the other hand, some studies claim that plural governance is a strategic decision, that can enhance efficiency [Bradach and Eccles, 1989; Bradach, 1997], mainly because it allows to decrease transaction costs associated with externalization [Dutta et al., 1995]. According to that approach, organizations intentionally choose to mix internal and external delivery, and plural governance is an abiding phenomenon [Pénard et al., 2003; Lafontaine and Shaw, 2005; Pénard et al., 2011].

More recently, public administration scholars took on the subject of plural governance. Various theoretical grounds are mobilized by the literature to explain local governments' use of plural sourcing; the most common being the Transaction Cost Theory (TCT; *e.g.* Brown and Potoski [2003]) and the Resource-Based View (RBV; *e.g.* Porcher [2016]). Various designations are also used, both in private and public settings, to refer to this phenomenon: concurrent sourcing [Parmigiani, 2007;

Hefetz et al., 2014; Porcher, 2016], plural strategies [Puranam et al., 2013], mixed delivery [Warner and Hefetz, 2008; Pénard et al., 2003], partial monitoring [Pénard et al., 2011], or dual distribution [Gallini and Lutz, 1992]. In empirical studies, the phenomenon is measured in various ways. This myriad of approaches, designations, and measurements, reflects the fact that the investigation of plural sourcing is new, especially in public settings.

This Chapter contributes to this literature by opposing three potential explanations for local governments' resort to plural sourcing. We build a first set of propositions on the approach that considers plural governance as a second-best choice, or as the aggregation of distinct decisions made for distinct transactions (plural governance is not desired *per se*). The second set of propositions is built on the approach that considers plural governance as a strategic organizational choice, which allows to decrease the cost of service delivery. Finally, we consider a third set of propositions, based on an approach that has been understudied in previous literature: we take into account the political history of local governments. We therefore investigate how political factors can explain plural governance.

Our empirical analysis employs data about the practices of 97 municipalities regarding the management of their parking lots, in 2010. We use a multinomial logit to compare three distinct alternatives: total internal provision, complete externalization, or plural sourcing. An investigation of contracting out to public companies is also included in our analysis. Our results clearly indicate that plural sourcing is a strategic choice. Among the propositions built on literature, one in particular allows to test for this argument: the likelihood to use plural sourcing should increase with the level of fiscal stress of local governments, since when municipalities suffer from high levels of fiscal stress, their desire to decrease the cost of service delivery is stronger. This proposition is empirically verified, indicating that plural governance is used in strategies designed to decrease costs.

Table 1: Summary of chapters - Part 1

Chapter	Methodology (and Data)	Main results
• **Chapter 1.** The Political Cycles of Public Contract Renegotiation: Evidence from the French Parking Industry. • **Research Question.** What makes public contracting different from private contracting? Are public contracts permeable to their political environment?	• Econometric analysis (Differences - in - Differences, OLS, Poisson regressions, Linear Probability Models, SUR model, Propensity Score Matching). • Entire set of renegotiations of the contracts concluded by the French leader of the parking industry between 1968 and 2008. • 1,100 renegotiations of 676 agreements (including 557 public contracts and 119 private contracts). • Focus on the differences between public and private renegotiations; and on the determinants of public renegotiations. • ***Source:*** Original database manually coded by the authors, INSEE, CDSP.	• Public contracts are permeable to their political environment: they are more renegotiated before local elections than private contracts. This feature suggests political manipulations of mayors in order to please their constituents. • Pre-electoral renegotiations of public contracts relate to financial items, that is the price charged to users, and the remuneration of the parties. • Political competition influences mayors' propensity to renegotiate public contracts before local elections.
• **Chapter 2.** When Does Ideology Matter? An Empirical Analysis of French Municipalities' Make-or-Buy Choices • **Research Questions.** What is the impact of ideology on cities' propensity to provide public services in-house? How should ideology be measured?	• Econometric analysis (OLS and logit estimations). • Investigation of the observed sourcing modes (in-house provision or externalization) of 156 French municipalities in 2015, for seven public services. • Ideology measures constructed over a long period of time (1989 - 2014): number of left-wing mayors, number of left-wing majorities during the first round of presidential elections; longevity of the left. • Survey addressed by the authors to French general directors of local public services to assess the characteristics of services. • ***Sources:*** IGD, CDSP, INSEE, original data based on a survey addressed by the authors.	• The extent to which a municipality has been governed by consecutive left-wing mayors in the past explains today's proportion of public services provided in-house. • The influence of ideology on make-or-buy decisions is stronger for services that are characterized by high levels of resident sensitivity. • It is more important to measure ideology over long periods of time for services that are characterized by long-term contracts on the market. • The results suggest that backward integration may not be possible, because of the length of contracts and the loss of competencies externalization induces.

Table 2: Summary of chapters - Part 2

Chapter	Methodology (and Data)	Main results
• **Chapter 3.** Plural Governance for Local Public Services: a Strategic Choice? An Empirical Investigation based on the French Parking Industry • **Research Question.** Is plural governance a second-best choice, a choice motivated by efficiency concerns, or the result of political considerations?	• Econometric analysis (multinomial logit estimations). • Investigation of the sourcing decisions (in-house provision, complete externalization to public or private firms, plural sourcing) of 97 French municipalities in 2010, for their parking services. • Independent variables about the characteristics of municipalities (population, density, unemployment, income, debt) and the political affiliations of successive mayors (1989-2010). • ***Sources:*** CEREMA, CDSP, INSEE.	• Plural governance is motivated by efficiency concerns, that is by the desire to decrease the cost of service delivery. • Larger cities, cities which suffer from fiscal stress, and high-income cities are more likely to resort to plural governance for parking services. • Plural governance seems to be a stable choice over time. • Cities' political history do not explain their use of plural governance.

Chapter 1

The Political Cycles of Public Contract Renegotiation: Evidence from the French Parking Industry*

1.1 Introduction

While the New Public Management literature asserts that the public sector should import management rules from the private sector to solve its inefficiencies, public administration scholars investigate the inherent differences between the two sectors. Ring and Perry [1985] argues that the public sector cannot be judged against normative models developed in the private sector. In the same vein, Spiller [2008] claims that "*the perceived inefficiency of public or governmental public contracting*

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is simply the result of contractual adaptation to different inherent hazards, and such is not directly remediable" [Spiller, 2008, page 1].

A recent strand of literature attempts to test the differences between the *ex ante* design of public and private contracting [Beuve et al., 2014; Moszoro et al., 2016]. These works show that public contracting features more rigidity clauses than private contracting in their *ex ante* setting. Our study contributes to this growing literature by comparing the two types of contracting, focusing on the *ex post* adjustments of contracts, that is their renegotiations. Renegotiations are, indeed, at the core of the success of transactions, and their determinants should be studied with care. We particularly aim to demonstrate that mayors manipulate public contract renegotiations before local elections to please the electorate and enhance their probability of being reelected. We thus test the presence of political cycles in the patterns of public contract renegotiations. In that sense, our study directly tests the hypotheses derived by Ring and Perry [1985] and Boyne [2002], who postulate that public sector managers' attitudes are influenced by the artificial times constraints they face.

Susarla [2012] notices that research on contract renegotiations is hampered by the lack of appropriate data. Our study relies on an original and exhaustive dataset comprising every renegotiation from the entire set of contracts (public and private) signed by the French leader of the parking industry between 1968 and 2008. The set of public contracts consists of every contract signed by this firm with a municipality. But this firm also forms agreements with private parties (for instance, shopping centers, private pool complexes, and amusement parks) for similar services (*i.e.*, construction, exploitation or renovation of car parks). For each contract and for every year, we have information on the total number of renegotiations, and we know which aspect of the initial contract was renegotiated (price, work, finance and others). Therefore, we use an exhaustive dataset consisting of 650 public and private contracts with 1,110 amendments over a 50-year period.

The French parking sector is especially suitable to investigate the political cycles of contract renegotiations. Reading the French press before municipal elections provides useful lessons about the salience of the parking policy for voters. For instance, the daily newspaper "Le Figaro" published an article "The top list of cities that like cars"[1] one week before the latest municipal elections in France. Likewise, the newspaper "Libération" printed "Is Nantes the most expansive city in which to park in France?"[2] one week earlier. The price of parking is one of the front-page topics before local elections in France. Since local governments often choose to delegate the construction and/or exploitation of parking infrastructures to the private sector, parking policy decisions often induce renegotiations with the private sector.

We use a Differences-in-Differences (DiD) methodology to show that public and private contracts are differently affected by electoral periods: compared with private contract renegotiations, public renegotiations significantly increase before local elections. These pre-election renegotiations in particular modify end-user fees or the financial dimensions of the contracts (*i.e.* the remuneration of one of the parties). Moreover, this article investigates the determinants of public renegotiations, and finds that political competition plays a crucial role in explaining pre-electoral manipulations.

In other words, we show that otherwise similar transactions differ based on the identity of one of the partners (public *versus* private). This result not only confers additional support to Spiller [2008], but also contributes to the strategic management literature. Our study is indeed the first to empirically test the permeability of public organizations to their political environment [Boyne, 2002; Ring and Perry, 1985].

[1] "Le palmarès des villes qui aiment la voiture", Le Figaro.fr, March 17, 2014.

[2] "Nantes est-elle la ville la plus chère de France pour se garer?", Libération.fr, February 25, 2014.

Our results also go further, and show that public managers favor their personal goals (that is their personal political ambitions) over the organizations' goals.

The investigation of local political cycles of contract renegotiations is all the more relevant given that most public investment is made at the municipal level, often through public-private agreements (in France, municipalities are the first public investor and handle approximately 60% of the total public investment, which represents 9% of French GDP).[3]

The remainder of the article is organized as follows. Section 1.2 derives the four propositions tested in this article based on the existing literature. Section 1.3 provides details about the French parking industry and the data. Section 1.4 presents the empirical methodology and our results on the difference between public and private renegotiation patterns. Section 1.5 further investigates the determinants of public renegotiation. The last section discusses the results, their limitations, and their implications for policy.

1.2 Related literature and testable propositions

1.2.1 The difference between the renegotiation of public and private agreements

The consequent theoretical and empirical literature on transaction cost theory and incomplete contracts theory (see *e.g.* Bajari and Tadelis [2001], Bajari et al. [2014]; Guasch [2004]; Hart and Moore [1988]; Klein et al. [1978]; Masten and Saussier [2000]; Susarla [2012]; Williamson [1979]) has brought to light the major impor-

[3]Source: OECD.

tance of renegotiations in contractual relationships: this phenomenon stands at the core of the success (or failure) of transactions. Because of their incomplete nature, contracts must be renegotiated as the states of nature realize, in order to adapt their initial terms to new contingencies. Renegotiations can thus be Pareto improving [Masten and Saussier, 2000; Plambeck and Taylor, 2007; Susarla, 2012], but they always come at a cost, and leave room for opportunistic behaviors from rent-seeking parties [Guasch, 2004].

Therefore, it is of prime interest to study and better understand the determinants of renegotiations. First, and regardless of the identity of the parties, the probability to renegotiate a contract depends on the degree of uncertainty of the environment, and on the characteristics of the transaction [Guasch et al., 2003, 2006; Ariño and Reuer, 2002, 2004; Williamson, 1975, 1979]. However, in the specific case of public contracts (when the buyer is a public entity), studies on Latin American data show that political features, as corruption and elections, impact the frequency of renegotiation [Engel et al., 2009; Guasch et al., 2003, 2006; Guasch and Straub, 2009]. For instance, in Chile, the government has been found renegotiate public contracts in order to increase public spending and shift the burden of payments to future administrations [Engel et al., 2009].

This last strand of literature suggests that the determinants of renegotiations differ depending on the identity of the buyer (public or private). If the renegotiation processes of public contracts are influenced by the electoral considerations of their public signatories, private contracts should not suffer from the same flaws, as none of the two parties is elected and accountable to the citizens. This hypothesis of a difference between the two types of agreement relates to the work of public administration scholars, who describe some major dissimilarities between public and private organizations. Despite the fact that organizations' degree of "publicness" is arduous to measure [Bozeman, 1987; Bozeman and Bretschneider, 1994; Meier and O'Toole, 2011; Perry and Rainey, 1988], authors highlight that public organizations suffer

from more bureaucracy and red tape, and their managers face multiple, complex and vague goals [Boyne, 2002; Rainey and Bozeman, 2000; Rainey and Jung, 2015]. In the same vein, but focusing especially on contracts, Spiller [2008] maintains that public contracting is characterized by formalized, standardized, bureaucratic and rigid procedures.

The reasons why these two types of organization differ are examined by only a small number of studies. Most of the studies on the subject have indeed been dedicated to prove that public organizations suffer from more red tape [Bozeman, 1993; Boyne, 2002; Pandey and Kingsley, 2000], or alternatively to investigate the impact of red tape or goal ambiguity on the performance of organizations, and on public managers' attitudes [Chun and Rainey, 2005; DeHart-Davis and Pandey, 2005; Rainey and Jung, 2015]. However, the origins of such characteristics are understudied.

Ring and Perry [1985] postulate that public and private managers differ in their behaviors and choices because they operate in highly different contexts. The authors assume that public organizations' openness to the media and to a great number of interest groups, as well as artificial time constraints created by the electoral calendar, account for the specific attitudes of public managers. The primary constraints of public managers are, indeed, imposed by the political rather than the economic system [Boyne, 2002]. Yet, none of the two authors does empirically test this assertion.

On that subject, a recent set of articles finds that public contracts include more clauses than private contracts, because they are subject to third-party opportunism [Spiller, 2008; Moszoro et al., 2016]. Interested third parties, as political contesters and interest groups, have the incentives and the means to challenge public contracts. Beuve et al. [2014] further show that higher levels of political competition, which reflect higher risks of opportunistic behaviors from political challengers, increase

the rigidity of public contracts, as the signatory parties intend to protect against third-party opportunism. The overall political environment, and more specifically political competition, thus influences the general writing of public contracts (that is impacts public managers' *ex ante* attitudes). However, the specific impact of the electoral calendar on *ex post* attitudes of public managers (*i.e.* renegotiations), remains unknown.

Our article aims to fill this gap by directly testing the impact of public managers' electoral concerns [Boyne, 2002] on their behavior, and more specifically on their propensity to renegotiate public contracts. We specifically argue that, regardless of the characteristics of transactions and the economic conditions, the only forces that should have a different impact on public and private contract renegotiations are political variables. The electoral calendar, and particularly the proximity of elections, should only have an influence on public contract renegotiations and not on private contract renegotiations. This leads us to our first proposition:

Proposition 1. *(a) The electoral calendar affects the pattern of renegotiations in public contracts, where the buyer is a public party.*
(b) The electoral calendar does not affect the pattern of renegotiations in private contracts, where the buyer is a private company.

1.2.2 The political cycles

The first proposition, which puts forward the idea that elections influence the pattern of public contract renegotiations but not of private contract renegotiations, is quite general. We now delve into the political business cycles literature to predict more precisely how elections could affect parties' propensity to renegotiate contracts.

The theoretical research has shown that politicians have incentives to manipulate economic variables to enhance their reelection perspectives. The different theoretical models of political cycles are built on various types of assumptions regarding voters' expectations: electoral cycles appear when voters' expectations are backward looking [Nordhaus, 1975; Rogoff and Sibert, 1988; Rogoff, 1990; Persson and Tabellini, 2002; Shi and Svensson, 2006], but also with ultra-rational agents and full symmetric information [Baleiras and da Silva Costa, 2004]. A first strand of literature supports those forecasts at the national level in industrialized countries [Alesina and Roubini, 1992; Tufte, 1980] and in developing economies [Brender and Drazen, 2005; Gonzalez, 2002; Kraemer, 1997; Schuknecht, 1996, 2000; Shi and Svensson, 2006].

At the local level, most of the studies focus on public spending, and show that the latter increase before elections, at the provincial level in Canada [Blais and Nadeau, 1992; Petry et al., 1999], as well as at the municipal level in Portugal [Baleiras and da Silva Costa, 2004; Veiga and Veiga, 2007], and in France [Binet and Pentecôte, 2004; Foucault et al., 2008]. However, the budget is not the only variable that governments are prone to influence. Contract awards also significantly increase before presidential elections in the United States [Mayer, 1995]. Correspondingly, a study on French data finds that mayors' electoral considerations influence the timing of public procurement [Chong et al., 2014]. Therefore, local governments increase public spending, and adapt the timing of public procurement when elections draw near. We argue this mechanism also applies to renegotiations of public contracts. The latter are indeed means for mayors to please the electorate, as they can for instance be used to decrease the price of public services, and thus enhance incumbents' reelection perspectives. As our study uses French data, it is important to note that in the country's legal system, public signatories can renegotiate their public agreements as far and as often as they wish. The only constraint they face is that renegotiation should not result in major disturbances of the financial equilibrium of the initial contract. We can thus develop our second proposition:

Proposition 2. *The probability to renegotiate public contracts increases before local elections.*

In addition, manipulations of public contracts should relate to items that are visible for the voters, in order to influence their voting decisions. In that vein, Veiga and Veiga [2007] show that the composition of Portuguese municipal expenditure changes before elections, favoring items that are highly visible. Chong et al. [2014] also find that French electoral cycles at the municipal level are stronger for projects that are very apparent. Therefore, we claim that the renegotiations induced by the proximity of elections should also relate to visible items. In the case of parking lots, we argue that renegotiations of end-user fees are the more likely to be manipulated. Despite the fact that public works (*e.g.* renovations) are also visible to voters, we do not expect this variable to play an important role for two reasons. First, renegotiations which add work to the initial contract take longer to implement, and should thus not be concluded just before the elections. Moreover, public works often come with costs and delays overruns [NAO, 2003] and can potentially elicit citizens' anger (for example because they induce closed car parks, or traffic congestion).

Naturally, all the hypotheses and findings of the political cycles literature do not apply to the framework of purely private contracts, for which neither of the two parties have electoral concerns, as postulated by Proposition 1. This leads us to our third proposition:

Proposition 3. *The renegotiations of public contracts which are concluded before local elections relate to items that are visible to voters, particularly end-user fees.*

Finally, the type of election is likely to influence the magnitude of political cycles. For instance, the latter differ across political systems [Persson and Tabellini, 2002]. Moreover, if politicians are partially driven by their will to be reelected [Alesina and Roubini, 1992], their incentives to manipulate economic outcomes will be stronger if

they fear of not being reelected. Induced political cycles are indeed costly because of their influence on both governments' reputation and future economic performance; the degree to which a government manipulates the economy is therefore positively associated to its political insecurity standing for reelection [Schultz, 1995]. In other words, the longer a party expects to control the policy agenda, the more it weights the future, and the less it wants to implement delicate policy measures [Franzese, 2002].

These assertions perfectly apply to our framework. As mentioned before, renegotiations are costly as they expose the parties to opportunistic behaviors; they should thus be implemented only when really needed. Moreover, renegotiations which are not required may harm the performance of the contract. As a consequence, we believe that political cycles of public contracts' renegotiations will be more important as the level of political competition increases: the higher the level of political competition, the more mayors feel challenged, and the more they engage in pre-electoral manipulations of public contracts. We then develop our fourth and final proposition:

Proposition 4. *The probability to engage into pre-electoral renegotiations is positively correlated with the level of political competition.*

1.3 Sector and data

1.3.1 The parking sector

In France and in most European countries, public parking policy is the responsibility of local authorities: local governments have to administer both off-street and on-street parking. Municipalities can choose either to directly manage this service or to contract it out, and form contracts with private companies. The contribution of the private sector is far from being anecdotal: since the first parking concession (1962), the outsourcing of parking services has been continuously increasing.

Between 1960 and 1980, thousands of lots were constructed by private operators under public contracts, which generally included the right of exploitation. In 2011, more than seventy percent of French lots were operated by semi-public or private companies.[4] Moreover, the parking market is a mature and competitive one, which faces increasing competitive pressure from both national and international companies [Baffray and Gattet, 2009].

Parking lots are highly visible infrastructures that partly determine constituents' satisfaction, and an adequate parking policy has many valuable implications. A sufficient number of lots, placed in judicious locations and with adapted pricing,[5] spares drivers from searching for parking spaces, reducing traffic congestion and air pollution. Moreover, parking lots contribute to the development of commercial activities. In other respects, the contribution of the parking sector to the economic and social development is undeniable. In 2010, the sector employed a total of 17,500 persons, creating revenues estimated at 1.3 billion euros.[6]

Because parking lots are highly visible infrastructures, which are under the responsibility of municipalities who often decide to contract them out, and whose management directly impacts voters' satisfaction, this sector is relevant to study the political cycles of renegotiations. Finally, parking companies do not only form contracts with public authorities: they also conclude agreements for similar services (*i.e.*, construction, exploitation, or renovation) with private parties (*e.g.* shopping centers, private pool complexes, amusement parks, and so forth). Private lots share strong similarities with public ones, and they also constitute a strategic resource for private cocontractors, as the number of spaces and their location, quality, and price contributes to customers' satisfaction.

[4] Data from the French National Federation of Parking Activities.

[5] As mentioned before, citizens ask for cheap parking. However, it may not be optimal to maintain low prices (see Pierce and Shoup [2013]).

[6] Fédération Nationale des Métiers du Sationnement (FNMS).

1.3.2 Data collection

The data employed for this study were collected from the private company which is the leader of the French parking industry. This operator holds 42% of market shares among private operators, corresponding to 30.6% of the total market shares. We had access to every contract, and its renegotiations (in PDF format), signed by the company between 1968 and 2008. Our data thus relate to 676 agreements (557 public and 119 private contracts contracts). Table 1.1 presents statistics on the duration of each type of contract, and shows that public contracts last on average longer (almost eighteen years) than private ones (slightly more than ten years). However, the exclusion of concession contracts, which are overrepresented in the set of public contracts, decreases this difference.[7] Our empirical analysis will tackle this issue. A renegotiation corresponds to an additional document (*i.e.* an amendment), which modifies the initial contract, and is never predicted in the latter. This phenomenon is very common, as 438 public contracts (78.6%) and 88 private ones (73.9%) were renegotiated at least once. But most agreements are renegotiated more than once, and our data comprises a total of 1,100 amendments.

Our analysis also employs political data, collected from the Center for Socio-Political Data (CDSP). We collected the score obtained by each party for seven French municipal elections, from 1971 to 2008. We completed this political dataset with the names of every mayor at office during the period of interest, for each of the 189 cities of our dataset.

[7]The statistics of the first row of Table 1.1 are computed on the entire set of contracts, without distinguishing between traditional procurement contracts and concession contracts. The latter last on average longer and can be associated to more complex projects, and/or higher levels of investment.

1.3.3 Coding process and variables

1.3.3.1 Renegotiation variables

The information contained in each of the 1,100 amendments was coded manually; this subsection described the way this coding work was carried out. Before the coding of the renegotiations, an inspection of the initial agreements has been conducted. This inspection was eased by the fact that all the contracts, both public and private, are standardized in their structure. A first chapter is always devoted to: (i) a legal description of the two contracting partners, (ii) a description of the general object of the contract (for instance, construction and operation of the parking infrastructure), (iii) a description of the existing or future parking infrastructure (geographic position, number of parking spaces), and (iv) the total duration of the contract (which varies between a few months and ninety-one years, see Table 1.1). In the following chapters, one section always further describes the obligations of the parking company and the financial conditions of the contract (*e.g.* remuneration of the parties, end-user fees). We found these contracts to be very similar in their object (construction and/or exploitation of parking infrastructures, renovation) and structure, motivating a further analysis of their renegotiations. A renegotiation is structured as a short contract, which length varies from 2 to about 20 pages. For each amendment, we scrolled through the entire PDF document to note every dimension of the initial contract that the renegotiation modifies. Let us illustrate this coding work with two specific renegotiations.

The first example is an amendment modifying the fees charged to users. In 2006, a big city decided to offer specific subscriptions to some categories of users, in order to encourage them to leave their vehicles parked, and use public transport. This decision resulted from a modification of the city's parking policy, designed to improve traffic conditions.

Consequently, the city renegotiated her contract with the parking company, and the seven-pages renegotiation is structured as follows: (i) one page is dedicated to the legal presentation of the two contracting partners, (ii) one page describes the general object of the renegotiation (modification of end-user fees because of the city's new parking policy), (iii) three pages are dedicated to a description of every new subscription to be implemented by the parking company (special annual subscription for the inhabitants of the district, for electric vehicles, for small vehicles, and for two-wheeled vehicles), and (iv) one page implements lower royalties, in order to *"maintain the general economic balance of the contract, despite the new subscriptions"*. In this specific example, the renegotiation specifies that the new subscriptions have to be implemented within three months. This amendment is coded as a "financial renegotiation" because it modifies financial aspects of the initial contract (user fees and royalties).

The second example is an amendment adding work to the initial contract. In 1989, because of high levels of demand for parking spaces in a district of a big city, the parking company and the city jointly decided to construct an additional level in an existing infrastructure. The five-pages amendment is structured as follows: (i) one page is again dedicated to the legal description of the parties, (ii) one page describes the object of the renegotiation, (iii) one paragraph describes the new infrastructure, (iv) one paragraph is devoted to the estimation of the additional costs supported by the parking company, and (v) one paragraph defines the additional royalties received by the city because of the exploitation of the additional level. This amendment is coded both as a "work renegotiation" (because of the construction of an additional level) and a "financial renegotiation" (because of the higher royalties).

Every renegotiation was inspected in the same way, and we finally distinguished between: (i) financial renegotiations, (ii) work renegotiations, and (iii) other renegotiations. Financial renegotiations include modifications of remuneration of one of the parties, of end-user fees, and of the duration of the contract. Amendments are

coded as work renegotiations when additional work, which was not foreseen by the initial contract, is required. Finally, other renegotiations concern changes in the name of the private operator.[8] We computed the number of each type of renegotiation per year and per contract. We also derived the total number of amendments per year and per contract; in our sample, contracts are renegotiated from zero to five times per year. Finally, our categories are exhaustive: every amendment was coded as one (or several) of the three dimensions described above. Table 1.1 presents general statistics on these four renegotiation variables.

Of note, despite the fact that the contracts and amendments are standardized in their structure, they also exhibit some differences. For instance, the most ancient contracts, which are written on a typewriter, are sometimes less clear and understandable. Indeed, as the development of parking activities increased across the country and the parties became more accustomed to signing these types of contracts, the documents became more standardized. Nonetheless, it was always possible to note all the dimensions at stake in each renegotiation. In other respects, some transactions are more complex than others (for example, we sometimes had a case in which infrastructures had to be built on very "challenging" grounds or that archeological digs had to be held). Moreover, the initial and renegotiated prices for parking and the parties' remunerations sometimes appeared to be very complex. For instance, an entire list of prices (sometimes containing more than twenty different fees) could be described. The financial terms of the contracts were sometimes very opaque and difficult to understand given that we did not have access to any information about the exploitation of the infrastructures, except the contracts and amendments. However, for each amendment, we coded the date of signature and every single dimension of the initial contract that was renegotiated.

[8] Every time the name of the operator changes, an amendment called "changement de dénomination sociale" has to be drawn up.

Table 1.1: Descriptive statistics - Aggregated and non-aggregated datasets

	Public					Private				
	N	Mean	St.Dev.	Min.	Max.	N	Mean	St.Dev.	Min.	Max.
Statistics on Contracts										
Duration	557	17.910	18.231	0	91	119	10.050	13.732	0	78
Duration (concession contracts excluded)	413	11.499	15.010	0	76	118	10.076	13.787	0	78
Statistics on the non-aggregated dataset										
Renegotiation variables										
Tot_Reneg	6 672	0.193	0.471	0	5	834	0.107	0.317	0	2
Financial_Reneg	6 672	0.131	0.387	0	4	834	0.071	0.261	0	2
Work_Reneg	6 672	0.070	0.278	0	3	834	0.030	0.171	0	1
Other_Reneg	6 672	0.033	0.183	0	2	834	0.012	0.109	0	1
Control variables										
Ct_Cycle	6 672	0.449	0.322	0.011	2	834	0.541	0.377	0.013	2
Ct_Cycle^2	6 672	0.305	0.458	0	4	834	0.435	0.595	0	4
Statistics on the aggregated dataset										
Renegotiation variables										
Tot_Reneg	878	0.193	0.289	0	2.33	174	0.130	0.270	0	2
Financial_Reneg	878	0.133	0.243	0	2	174	0.081	0.196	0	1
Work_Reneg	878	0.062	0.143	0	1	174	0.034	0.128	0	1
Other_Reneg	878	0.035	0.110	0	1	174	0.020	0.117	0	1
Remun_Reneg	878	0.091	0.207	0	2	174	0.077	0.187	0	1
Price_Reneg	878	0.060	0.135	0	1.11	174	0.012	0.087	0	1

1.3.3.2 Political cycle variables

Political cycle variables are constructed to investigate the impact of the electoral calendar on renegotiation patterns. Most studies on local political cycles define the pre-election period as the election year and the prior year [Baleiras and da Silva Costa, 2004; Binet and Pentecôte, 2004; Chong et al., 2014]. By contrast, we opt for pre-electoral periods of three years because the dates of renegotiations were coded as their date of signature. However, amendments typically do not apply immediately, and it would be more relevant to consider the implementation date. As this information is often missing, only the date of signature could be considered, and our analysis thus includes an extra year in the pre-electoral periods: amendments completed two years before local elections can be implemented the year before elections to influence voters' decision.

Between 1968 and 2008, seven municipal elections took place in France, and six years separate two successive elections. As all elections except one were held in March, the "election years" are defined as the calendar year preceding each election. Table 1.2 summarizes all the years of the dataset, considered as "pre" or "post" elections (elections took place in March 1971, 1977, 1983, 1989, June 1995, and March 2001 and 2008).[9]

Table 1.2: Elections cycles

Pre	y-2	1968	1974	1980	1986	1992	1998	2005
	y-1	1969	1975	1981	1987	1993	1999	2006
	y	1970	1976	1982	1988	1994	2000	2007
Post	y+1	1971	1977	1983	1989	1995	2001	2008
	y+2	1972	1978	1984	1990	1996	2002	-
	y+3	1973	1979	1985	1991	1997	2003	-
	y+4	-	-	-	-	-	2004	-

1.3.3.3 Contract life variables

Our empirical strategy includes two control variables: *Ct_Cycle* is defined as the ratio between the current year and the total duration of the contract, and Ct_Cycle^2, is the square of *Ct_Cycle*. These two variables allow to control for the linear and nonlinear effects of the period of the contract life on renegotiations. Indeed, we expect contracts to be differently renegotiated at the beginning and at the end of their life. These two variables will also be crossed with the variable *Pre* when examining the determinants of public renegotiations to consider the potential interaction of these two terms. This analysis will then include two additional variables, *Ct_Cycle* * *Pre* and Ct_Cycle^2 * *Pre*.

[9]The municipal elections of 2008 were initially programmed in 2007. However, due to the overloaded electoral calendar, this election was deferred until 2008. Therefore, we take 2004 as a post-electoral year of the 2001 election.

1.3.3.4 Political competition

Political competition is measured by the margin of victory (hereafter, margin), defined as the difference between the percentage of votes received by the winner and the percentage of votes received by the second place candidate, during the latest election. This measure of political competition is very common among political economics studies (see, *e.g.*, Solle Olle [2006], Ferreira and Gyourko [2007]; Beuve et al. [2014]). Political competition is inversely correlated with the margin. When the margin is very large, mayors may feel less challenged and may be less inclined to engage in pre-electoral manipulation of public contracts. Our analysis in Section 1.5 will then include the variables *Margin*, $Margin^2$, and their interactions with the dummy identifying political cycles. We will therefore investigate a potential non-linear effect of the margin on the inclination to renegotiate. This will capture, for instance, the fact that mayors may be more responsive to very low or very high levels of margins but less responsive to intermediate values of political competition.

1.3.3.5 Mayors' personal characteristics

When investigating the determinants of public contract renegotiations before elections, we control for the characteristics of mayors (gender, age and political affiliation). Three additional variables thus appear: *Age* represents the age of the mayor in year t, *Male* is a dummy that equals one if the mayor is a male, and *Right* equals one if the mayor belongs to a right-wing party. The interaction terms of these three variables with the variable Pre are also included in our regressions to investigate the potential impact of mayors' personal characteristics on their probability to carry out pre-electoral renegotiations.

Even if we do not expect age or the gender to play a significant role in our analysis, some studies on corruption interestingly highlight that women and older individuals are more averse to corruption [Gatti et al., 2003] and that males have a higher propensity or tolerance for illicit activity [Mocan, 2006; Mocan and Rees, 2005]. Even if this article does not study corruption *per se*, we want to control for these potential effects. The variable *Right* * *Pre* tests for the existence of partisan effects, that is the fact that the ideology of incumbent governments could impact the conduct of renegotiations (see, *e.g.*, Alesina and Roubini [1992], for evidence of partisan effects in political cycles in OECD countries).[10]

1.3.3.6 Past and current interactions between the partners

The investigation of the determinants of public renegotiations finally includes two additional variables, to control for the past and current experience of municipalities with the operator. *Nb_Current_Contracts* is a count variable of the number of contracts a municipality holds with the private company, and tests for the "shadow of future" [Baker et al., 2008; Bull, 1987; Desrieux et al., 2013; Gil and Marion, 2009; Klein, 2007; Poppo and Zenger, 2002]. This variable accounts for the fact that the private company might be more prone to accept contractual renegotiations to preserve its perspectives of future business with a particular city. The variable *Nb_Past_Contracts* counts the number of contracts the municipality held with the company and that are expired in year t. This variable measures the "shadow of the past" [Argyres et al., 2007; Ariño and Reuer, 2004; Corts and Singh, 2004; Gulati, 1995; Parkhe, 1993; Ryall and Sampson, 2009], and controls for the fact that past interactions can create close ties, trust and mutual understandings between the parties, facilitating renegotiations. The crossed variables *Nb_Current_Contracts* * *Pre* and *Nb_Past_Contracts* * *Pre* will investigate the potential impact of the relational experience on the propensity to conclude renegotiations before elections.

[10]The influence of mayors' ideology on their decisions regarding the management of public services is further investigated in chapters 2 and 3.

1.4 Comparison of public and private renegotiation patterns

This section describes the empirical methodology used to test for Propositions 1 and 2; the results of the comparison between public and private contract renegotiation patterns; and the robustness checks implemented to confer additional confidence in these results.

1.4.1 Empirical methodology

The first and main goal of this article is to empirically investigate the inherent differences between public and private contractual renegotiations, and to show that the execution phase of these two types of agreements is differently impacted by electoral cycles. To this end, we use a DiD method to compare public renegotiations (treatment group) to private renegotiations (control group) before and after municipal elections (treatment). The estimated equation is as follows:

$$\begin{aligned} Type\_Reneg_{it} = \beta_1.Pre_t + \beta_2.Public_i + \beta_3.(Pre_t * Public_i) + \\ \beta_4.Ct\_Cycle_{it} + \beta_5.Ct\_Cycle_{it}^2 + \alpha_i + \gamma_t + \epsilon_{it} \end{aligned} \tag{1.1}$$

Where $Type\_Reneg_{it}$ corresponds to the different types of renegotiations, Tot_Reneg_{it}, $Financial\_Reneg_{it}$, $Work\_Reneg_{it}$ and $Other\_Reneg_{it}$, that is the number of total, financial, work, and other renegotiations that contract i included in year t. Political cycles are identified by the variable Pre_t, which is a dummy that equals 1 for the three years preceding municipal elections. Our variable of interest is Pre_t * $Public_i$, which is the interaction term of Pre_t and a binary variable indicating

whether the contract is a public contract (=1) or a private contract (=0). The coefficient β_3 indicates whether public contracts exhibit different renegotiation patterns (than private contracts) before local elections. As described in previous section, the variables Ct_Cycle_{it} and $Ct\_Cycle_{it}^2$ account for potential renegotiation cycles in the life of contracts (for instance, renegotiations may be more frequent in the first years of a contract if the contract did not correctly specify the needs of the parties; or when reaching the end of a contract, for example to extend its duration).

α_i corresponds to contract fixed effects. These fixed effects are used to absorb the special features of each contract. For instance, the statistics on contract duration presented in Table 1.1 indicate that public contracts, on average, last longer (approximately 18 years) than private contracts (approximately 10 years). If the contracts differ on observable factors such as duration, they are also likely to differ on unobservable factors. Consequently, to account for observed and unobserved heterogeneity between contracts, and particularly between public and private contracts, we use contract fixed effects.[11] Moreover, because there may also be unobserved heterogeneity in time, we include the variable γ_t in our specification, which is a set of dummies identifying each political cycle. These variables are equal to one for the three years preceding and the three years following municipal elections (see Table 1.2). Finally, ϵ_{it} is the error term.

We alternatively estimate equation 1.2, in which dependent variables are dummies indicating whether renegotiation occurred or did not occur for each year.

$$\begin{aligned} Dum\_Type\_Reneg_{it} = \beta_1.Pre_t + \beta_2.Public_i + \beta_3.(Pre_t * Public_i) + \beta_4.Ct\_Cycle_{it} \\ +\beta_5.Ct\_Cycle_{it}^2 + \alpha_i + \gamma_t + \epsilon_{it} \end{aligned} \tag{1.2}$$

[11] Note that these contract fixed effects absorb the dummy $Public_i$, which does not vary within contracts.

The results are presented in the next subsection.

1.4.1.1 Results

The results of the specifications following equation 1.1 are displayed in the first eight columns of Table 1.3. Models 1 to 4 are estimated using the Ordinary Least Squares (OLS) method, while Models 5 to 8 are estimated using Poisson regressions, which are typically used for non-negative count dependent variables. Finally, the last four columns of Table 1.3 display the results of the specifications following equation 1.2, which were estimated using Linear Probability Models (LPM).

The results on the total number of renegotiations (Models 1, 5 and 9) validate Proposition 1. The crossed variable of interest, which identifies public contracts in pre-election periods, is indeed associated with significant coefficients across the three specifications, indicating that the electoral calendar affects public and private renegotiation patterns differently. Furthermore, the positive sign of the coefficients imply that public contracts are more renegotiated than their private counterparts before elections, validating Proposition 2. Results on financial renegotiations (Models 2, 6 and 10), and on work renegotiations (Models 3, 7 and 11) corroborate Proposition 3. They indeed indicate that pre-electoral renegotiations of public contracts concern financial aspects of the initial agreements, and not additional work. The "financial" category includes renegotiations of end-user fees, which are the most visible for citizens and the most likely to impact their satisfaction. Finally, the results on other renegotiations (Models 4, 8 and 12) must be seen as a first range of robustness checks, which yield support for our empirical methodology. The "other" group indeed includes renegotiations that are not visible at all, and should not be impacted by the conduct of elections.

Table 1.3: Public-private comparison - Non-aggregated dataset

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
	Tot _Reneg	Financial _Reneg	Work _Reneg	Other _Reneg	Tot _Reneg	Financial _Reneg	Work _Reneg	Other _Reneg	Dum_Tot _Reneg	Dum_Financial _Reneg	Dum_Work _Reneg	Dum_Other _Reneg
	OLS FE	OLS FE	OLS FE	OLS FE	Poisson FE	Poisson FE	Poisson FE	Poisson FE	LPM FE	LPM FE	LPM FE	LPM FE
Pre	-0.033	-0.025	-0.001	-0.004	-0.336	-0.405	-0.084	-0.370	-0.035	-0.023	-0.003	-0.004
	(0.027)	(0.020)	(0.018)	(0.010)	(0.232)	(0.292)	(0.422)	(0.726)	(0.026)	(0.020)	(0.018)	(0.010)
Pre * Public	0.068**	0.059***	0.013	0.004	0.513**	0.642**	0.257	0.391	0.061**	0.053**	0.011	0.002
	(0.029)	(0.022)	(0.019)	(0.011)	(0.238)	(0.299)	(0.433)	(0.736)	(0.027)	(0.021)	(0.019)	(0.011)
Ct_Cycle	0.030	0.102	-0.023	-0.040	0.116	0.663	-0.613	-0.957	-0.019	0.056	-0.017	-0.040
	(0.094)	(0.080)	(0.042)	(0.029)	(0.431)	(0.535)	(0.870)	(1.058)	(0.067)	(0.056)	(0.040)	(0.029)
Ct_Cycle^2	0.044	0.013	0.022	0.018	0.283	0.174	0.689	0.449	0.061*	0.031	0.014	0.018
	(0.053)	(0.047)	(0.021)	(0.015)	(0.245)	(0.296)	(0.569)	(0.624)	(0.036)	(0.030)	(0.019)	(0.015)
Constant	0.215***	0.117***	0.097***	0.037***					0.186***	0.102***	0.088***	0.036***
	(0.041)	(0.031)	(0.022)	(0.013)					(0.029)	(0.024)	(0.020)	(0.013)
N	7,506	7,506	7,506	7,506	6,023	5,377	4,248	2,901	7,506	7,506	7,506	7,506
Adj. R2	0.125	0.108	0.070	0.029					0.186	0.175	0.144	0.114
AC Tests	0.890	0.021	0.987	0.357	0.890	0.021	0.987	0.357	0.398	0.009	0.322	0.651

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. Under AC tests, we report the p-values of the Wooldridge tests for autocorrelation in panel data (H_0: no first-order autocorrelation). All the specifications (Models 1 to 12) include contract and political cycles fixed effects. Models 1 to 4 present the results of the OLS regressions in which the dependent variables are the number of renegotiations per year (Total, Financial, Work and Other). Models 5 to 8 present the results of the Poisson regressions in which the dependent variables are the number of renegotiations per year. Models 9 to 12 present the results of the Linear Probability Models in which the dependent variables are dummies indicating whether a renegotiation occurred or did not occur for each year.

1.4.1.2 Robustness checks

Correlation between the different types of renegotiations

First, as indicated before, a unique amendment can modify several dimensions of the initial contract. To correct for this potential bias, we ran Seemingly Unrelated Regressions (SUR) on the three types of renegotiations. The results are shown in Table 1.4. Model 1, which relates to financial renegotiations, is the only model for which the variable of interest exhibits a positive and significant coefficient, indicating that this only category of renegotiation is subject to pre-electoral manipulations. As the SUR regressions do not include contract fixed effects, the variable $Public_i$ now appears in the table of results. The latter indicates that public contracts are more renegotiated than public contracts on the three dimensions, but the interaction term $Pre * Public_i$ has an impact only on financial renegotiations.

Table 1.4: Robustness check 1. Seemingly unrelated regressions

	Model 1 Financial_Reneg SUR	**Model 2** Work_Reneg SUR	**Model 3** Other_Reneg SUR
Pre	-0.039	-0.010	-0.006
	(0.026)	(0.019)	(0.012)
Public	0.044**	0.031**	0.018**
	(0.019)	(0.014)	(0.009)
Pre * Public	0.062**	0.018	0.006
	(0.027)	(0.020)	(0.013)
Ct_Cycle	-0.042	-0.090***	-0.035**
	(0.037)	(0.026)	(0.017)
Ct_Cycle^2	0.041*	0.028*	0.014
	(0.024)	(0.017)	(0.011)
Constant	0.035	0.046**	0.017
	(0.031)	(0.022)	(0.015)
N	7,506	7,506	7,506
Adj. R^2	0.012	0.010	0.006

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. Models 1 to 3 present the results of the Seemingly Unrelated Regressions (SUR) accounting for potential correlations between Financial, Work and Other renegotiations. The model includes political cycles fixed effects.

Serial correlation bias

Bertrand et al. [2004] argue that DiD estimations with a substantial number of years may be plagued by serially correlated outcomes and, thus, inconsistent standard errors. Therefore, we reported the results of Wooldridge [2002]'s test for serial correlation in Table 1.3 (line "AC Tests"). As feared, regressions outcomes appear to be serially correlated (see Models 2, 6 and 10). Two of Bertrand et al. [2004]'s suggested corrections are applied. First, all our regressions in Table 1.3 are computed using cluster robust standard errors at the contract level to allow for within-contract error correlation and heteroscedasticity. Second, we collapse our data into a "pre" and "post" period and re-estimate the equation 1.1. The dataset was aggregated as follows. First, to avoid over- (or under-) representing any observation, we eliminated all years that could not be associated with two other years to form a complete pre- or post-election period. This resulted in the elimination of the years 2004 (because of the 7 years between the 2001 and 2008 elections) and 2008 (because we lack data from 2009 and 2010 to form a complete "post" period for the 2008 election, see Table 1.2). Second, for each contract, we averaged all variables over one "pre" and one "post" period.[12] Aggregating our data in this way has a second advantage because we can now consider "sub-sub" categories of renegotiations. In other words, rather than limiting our disaggregation of data to financial renegotiations, we can now distinguish between *Price_Reneg* (renegotiations of end-user fee) and *Remun_Reneg* (renegotiation of the remuneration of one of the parties, or of the duration of the contract). These sub-categories could not be considered at the disaggregated level because of their relatively rare occurrences. The descriptive statistics for this aggregated dataset are displayed in the last lines of Table 1.1. The results for this robustness check are shown in Table 1.5.

[12]This type of aggregation has a drawback. Indeed, whether the initial contract covered one or more "pre" (or "post") periods, the aggregation yields one "pre" (and one "post") period. This is likely to put relatively more weight on observations from contracts with few periods. To avoid this bias, our regressions will be weighted by the number of "pre" and "post" periods covered by the contract in our initial dataset.

Our results (Models 1 to 4) are qualitatively similar to those in the previous tables. The results on the two sub-categories of financial renegotiations are shown in Model 5 (for remuneration renegotiations) and Model 6 (for end-user fee renegotiations). We find positive and significant coefficients for the interaction terms when analyzing these two sub-types of financial renegotiations, indicating that both the remuneration of the parties and end-user fees are statistically more renegotiated in public contracts in pre-election periods. This result suggests that "win-win" renegotiations are made before elections. For instance, a mayor can renegotiate with the private company to decrease the price of parking to please constituents. In return, the private company may secure a decrease in the royalties it has to pay to the municipality.

Table 1.5: Robustness check 2. Results on the aggregated dataset - Decomposition of the financial renegotiations

	Model 1 Tot _Reneg OLS FE	**Model 2** Financial _Reneg OLS FE	**Model 3** Work _Reneg OLS FE	**Model 4** Other _Reneg OLS FE	**Model 5** Remun _Reneg OLS FE	**Model 6** Price _Reneg OLS FE
Pre	-0.028	-0.022	-0.008	-0.003	-0.025	-0.008
	(0.034)	(0.023)	(0.021)	(0.016)	(0.024)	(0.010)
Pre * Public	0.063*	0.058**	0.017	0.001	0.051**	0.030**
	(0.037)	(0.026)	(0.023)	(0.017)	(0.026)	(0.013)
Constant	0.165***	0.104***	0.059***	0.033***	0.075***	0.046***
	(0.007)	(0.006)	(0.004)	(0.003)	(0.005)	(0.004)
N	2,508	2,508	2,508	2,508	2,508	2,508
Adj. R^2	0.709	0.686	0.620	0.545	0.660	0.675

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. All the regressions are run on the aggregated dataset (which was aggregated into one unique "Pre" and one unique "Post" election period). All the specifications (Models 1 to 6) include contract and political cycles fixed effects. Models 1 to 4 present the results of the OLS regressions in which the dependent variables are the number of renegotiations per year (Total, Financial, Work and Other). Models 5 and 6 present the results on the sub-categories of *Financial_Reneg*, *i.e.*, remuneration renegotiations (Model 5) and end-user fee renegotiations (Model 6).

Comparability of the treatment and control groups

The DiD methodology relies on the assumption that the treatment and control groups share a common trend. We argue that public and private contracts, and their renegotiations, are highly comparable, and our assumption is that renegotiation trends should differ only because public parties have political considerations,

while private parties do not have such considerations. Nonetheless, public and private contracts differ on observable dimensions, such as duration (see Table 1.1). Thus, we ran our regressions on a dataset that excludes concession contracts, as such contracts are over-represented among public contracts.[13] This exercise did not change the main results: we still find a positive and significant coefficient associated with $Pre * Public$ for financial renegotiations and no significant effect for work and other renegotiations.[14]

We also used a matching technique to select the private contracts that are the most comparable to the public contracts. This Propensity Score Matching (PSM) was implemented on the aggregated dataset as follows. First, we computed the difference between the average number of renegotiations in the pre-election period and the average number of renegotiations in the post-election period. We then used four variables to match the public renegotiations group and the private renegotiations group: the year of signature of the initial contract, the total duration of this contract, the total number of renegotiations during the life of the contract, and the fact that a right-wing mayor was in office on the date of signature of the contract. We then computed the average treatment effect (public *versus* private) on the difference between pre- and post-election renegotiations. We matched contracts with their nearest neighbor, and the technique implemented computes Abadie and Imbens standard errors [Abadie and Imbens, 2007]. The results are shown in Table 1.6. The average treatment effect (public *versus* private) on the difference between pre- and post-election renegotiations is positive and significant only for total and financial renegotiations. This confers additional confidence in our results.

[13] After the exclusion of concession contracts, the average duration of public contracts (11.49 years) is not statistically different from that of private contracts (10.08 years).

[14] See Table 1.11 in Appendix.

Table 1.6: Robustness check 3. Propensity score matching

	Model 1 Diff_Tot _Reneg PSM	**Model 2** Diff_Financial _Reneg PSM	**Model 3** Diff_Work _Reneg PSM	**Model 4** Diff_Other _Reneg PSM
ATE (Public vs. Private)	0.067*	0.136***	0.032	-0.036
	(0.039)	(0.019)	(0.032)	(0.031)
N	311	311	311	311

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses. All the regressions are run on the aggregated dataset (which was aggregated into one unique "Pre" and one unique "Post" election period). Models 1 to 4 present the results of the Propensity Score Matching on the difference between the number of renegotiations in the "Pre" election period and the number of renegotiations in the "Post" election period. *ATE* corresponds to the Average Treatment Effect (public contracts vs. private contracts). The year of signature, the total duration of the contract, the total number of renegotiations during the life of the contract, and whether a right-wing mayor was in office when the contract was signed are the variables used to match the two groups.

Common trend assumption

The last robustness check focuses on the common trend assumption. This assumption postulates that after controlling for covariates included in equation 1.1, no other force should differently affect our control and treatment groups in pre- and post-treatment periods. We believe that including both contract fixed effects and time dummies helps satisfy this assumption by removing the effects of time-invariant and time-variant characteristics. Nonetheless, we provide a last additional robustness check: we re-estimate the regressions on the aggregated dataset with different election years (we virtually moved election years to t-2 and t+2).[15] The results are reported in Table 1.7. In all the specifications, we find that the coefficients associated with the interaction term are not significantly different from zero, lending further credibility to our fulfillment of the common trend assumption.

[15]Because we perform these robustness checks on an average number of renegotiations over three years (for our pre and post periods), delaying the elections by one year may not be sufficient to perform a satisfying robustness check. We thus choose a delay of two years.

Table 1.7: Robustness check 4. Different election dates (t+2 and t-2)

	Model 1 Tot _Reneg OLS FE **t + 2**	**Model 2** Financial _Reneg OLS FE **t + 2**	**Model 3** Work _Reneg OLS FE **t + 2**	**Model 4** Other _Reneg OLS FE **t + 2**	**Model 5** Tot _Reneg OLS FE **t - 2**	**Model 6** Financial _Reneg OLS FE **t - 2**	**Model 7** Work _Reneg OLS FE **t - 2**	**Model 8** Other _Reneg OLS FE **t - 2**
Pre	0.019	0.028	0.018*	-0.006	0.028	0.018	-0.013	0.008
	(0.027)	(0.024)	(0.009)	(0.010)	(0.030)	(0.026)	(0.011)	(0.008)
Pre * Public	-0.042	-0.041	-0.018	-0.011	-0.041	-0.029	0.008	-0.004
	(0.029)	(0.027)	(0.012)	(0.011)	(0.033)	(0.028)	(0.014)	(0.010)
Constant	0.188***	0.123***	0.062***	0.039***	0.187***	0.129***	0.066***	0.028***
	(0.006)	(0.005)	(0.003)	(0.002)	(0.006)	(0.005)	(0.004)	(0.002)
N	3,041	3,041	3,041	3,041	2,994	2,994	2,994	2,994
Adj. R^2	0.666	0.631	0.627	0.567	0.692	0.676	0.613	0.625

Significance levels: *** p<0.01, ** p<0.05, * p<0.1.Cluster robust standard errors in parentheses. All the regressions are run on the aggregated dataset (which was aggregated into one unique "Pre" and one unique "Post" election period). All the specifications (Models 1 to 8) include contract and political cycles fixed effects. Models 1 to 4 present the results of the OLS regressions in which the dependent variables are the number of renegotiations per year and the years of elections (t) are virtually moved two years later (t+2). Models 5 to 8 present the results of the OLS regressions in which the dependent variables are the number of renegotiations per year and the years of elections (t) are virtually moved two years earlier (t-2).

1.5 The determinants of public contract renegotiations

Previous section demonstrated that public contract renegotiation patterns differ from private contract renegotiation patterns in the sense that they are impacted by the proximity of elections (Propositions 1 and 2). This result is robust to the usual range of robustness checks that are performed after DiD estimations. Let us now dig further and investigate which variables impact the probability that a mayor will engage in pre-electoral manipulations of public contracts (Propositions 3 and 4). We first describe the model used to investigate that question and then present the results.

1.5.1 Empirical methodology

Public renegotiation determinants are investigated by restricting our dataset to public contracts. Descriptive statistics on this restricted dataset are displayed in Table 1.8. Let us note that an alternative way to study this question is to add crossed variables to the DiD estimations. For instance, the variables *Pre* * *Public* * *Margin* and *Pre* * *Public* * $Margin^2$ could have been added to test for Proposition 4. Nonetheless, coefficients of double-crossed variables are very difficult to interpret; we therefore chose to restrict the dataset to give more clarity to the tests and the results. The estimated equation is as follows:

$$\begin{aligned} Type\_Reneg_{it} = \beta_1.Pre_t + \beta_2.Margin_{it} + \beta_3.Margin_{it}^2 + \beta_4.(Margin_{it} * Pre) \\ +\beta_5.(Margin_{it}^2 * Pre) + Mayor\_Characteristics_{it}X + Experience\_Private_{it}Y \\ +Controls_{it}Z + \alpha_i + \gamma_t + \epsilon_{it} \end{aligned} \tag{1.3}$$

Where, as in the previous section, $Type\_Reneg_{it}$ is Tot_Reneg_{it}, $Financial\_Reneg_{it}$, $Work\_Reneg_{it}$ and $Other\_Reneg_{it}$, that is the number of total, financial, work, and other renegotiations that contract i included in year t. As described in Section

1.3.3.4, the variable $Margin_{it}$ is the percentage points difference between the score of the winner and the score of the runner-up candidate during the latest election. $Margin_{it}^2$ represents the potential nonlinear effect of the margin variable. The variables $Margin_{it}$ * Pre and $Margin_{it}^2$ * Pre, which are the interaction terms of the margin variables with the dummy identifying pre-election periods, allow to test for Proposition 3.

Our models also contain the set of variables $Mayor\_Characteristics_{it}$, as described in Section 1.3.3.5: $Male_{it}$ (note that 97% of the mayors in the dataset are males), Age_{it}, and $Right_{it}$ (to control for potential partisan effects). The interaction terms of these three variables with the dummy Pre_t allow to examine whether younger, male or right-wing mayors are more likely to renegotiate contracts before elections. As previously mentioned, our analysis additionally encompasses variables that account for the current and past experience of the city with the private operator. $Experience\_Private_{it}$ contains four variables, $Nb\_current\_contracts_{it}$, $Nb\_past\_contracts_{it}$, and the interaction terms with the variable Pre_t, to investigate whether cities that have current or past experience with the private company engage in more renegotiations before elections. Finally, as in the previous section, we include the control variables Ct_Cycle_{it} and $Ct\_Cycle_{it}^2$. However, we also test for the potential interaction of these variables with Pre_t in this section.

Table 1.8: Descriptive statistics - Dataset restricted to public contract renegotiations

	N	Mean	Std. Dev.	Min	Max
Political Competition					
Margin	2 090	23.26	15.90	0.31	100
Margin^2	2 090	793.90	1060.32	0.10	10000
Margin * Pre	2 090	10.87	15.95	0	100
Margin^2 * Pre	2 090	372.62	855.10	0	10000
Mayor Characteristics					
Male	2 090	0.97	0.17	0	1
Age	1 726	56.83	8.02	28	81
Right	2 090	0.68	0.47	0	1
Male * Pre	2 090	0.46	0.50	0	1
Age * Pre	1 796	27.19	29.25	0	81
Right * Pre	2 090	0.32	0.47	0	1
Experience with the private operator					
Nb_current_contracts	2 090	3.86	2.80	1	11
Nb_past_contracts	2 090	0.34	0.78	0	5
Nb_current_contracts * Pre	2 090	1.81	2.67	0	10
Nb_past_contracts * Pre	2 090	0.19	0.62	0	4

1.5.2 Results on the determinants of public renegotiations

The results are shown in Tables 1.9 and 1.10. All models are estimated using OLS with contract and political cycles fixed effects. Models 1 to 4 present the results of the estimations that include the entire set of independent variables described in Section 1.3.3. Models 5 to 8 do not include the variables capturing experience with the private operator, and Models 9 to 12 do not include the set of variables capturing the mayors' characteristics.

As expected, we find that political competition plays a crucial role in explaining public contract renegotiation patterns. In the three alternative specifications, the variable *Margin * Pre* exhibits positive and significant coefficients, and *Margin*^{2} * *Pre* exhibits negative and significant coefficients for the total number of renegotiations and for the number of financial renegotiations (Models 1, 2, 5, 6, 9 and 10).

Recall that margin increases with the difference in the score between the winner of the election and the runner-up candidate. Our results highlight an inverse U-shaped curved that increases for low values of margin and decreases for high values. In other words, when political competition is relatively high (low values of margin), mayors will engage in pre-electoral renegotiations to widen the gap between themselves and their competitors. By contrast, when mayors feel less challenged (high margins, low political competition), they decrease the number of renegotiations, particularly financial renegotiations, in pre-election periods. This result is in line with the assumption that mayors use such renegotiations to artificially improve the economic conditions to raise their probability of being reelected (Proposition 2) and with the assumption that these political manipulations are more likely to occur when political competition is high (Proposition 4). Moreover, the variables $Margin_{it}$ and $Margin_{it}^2$ both exhibit positive and significant coefficients in Model 11. This result suggests that work renegotiations could also be subject to a political cycle, but our variable Pre_t may not capture the appropriate time lapse to explain such an effect. This result is consistent with our previous analysis: work renegotiations may occur earlier in the election cycle than financial renegotiations because they take longer to implement and to become visible to constituents. Nonetheless, this result does not seem to be robust across all specifications, as it does not appear in Models 3 and 7.

The set of variables capturing the mayors' characteristics do not seem to play a significant role in explaining the probability that mayors manipulate contracts: the age and political affiliation do not impact the probability to renegotiate before elections. The only significant coefficient is associated with the variable *Male * Pre* for Model 3, indicating that males might be more prone to engage in work renegotiations before elections. Nonetheless, this effect is not found to be robust (no significant impact in Model 6). Interestingly, the current number of contracts with the private operator does not increase the number of pre-electoral renegotiations, and we do not find any impact of the shadow of future.[16]

[16]The count of the number of current contracts may not correctly capture the shadow of future.

By contrast, the number of past contracts increases mayors' propensity to renegotiate on financial and work dimensions (Models 2, 3, 10 and 11). When a municipality has a substantial amount of past experiences with the company, it may be easier to agree on renegotiations. The result on work could be interpreted in two ways. On the one hand, as previously highlighted, work renegotiations might be challenging. These renegotiations take a long time to implement, and it is not unusual for additional work to result in delays or cost overruns. The more the municipality is accustomed to conducting contracts with a company, the more it might entrust that company to perform additional works before elections. On the other hand, this effect could also reveal cronyism between the public and the private partners. For instance, a mayor that had a long relationship with this company might attempt to do this company a favor in case he is not reelected to office.

Finally, let us note that the variables controlling for contract cycles do not interact with the pre-election periods, as shown in Models 1 to 12. We also performed the estimations with the same independent variables but replaced the dependent variables with dummies indicating whether contract i was renegotiated in year t. Again, the results are similar.[17]

[17] see Tables 1.12 and 1.13 in Appendix.

Table 1.9: Public-private comparison - Non-aggregated dataset - Part 1/2

	Model 1 Tot _Reneg OLS FE	**Model 2** Financial _Reneg OLS FE	**Model 3** Work _Reneg OLS FE	**Model 4** Other _Reneg OLS FE	**Model 5** Tot _Reneg OLS FE	**Model 6** Financial _Reneg OLS FE	**Model 7** Work _Reneg OLS FE	**Model 8** Other _Reneg OLS FE	**Model 9** Tot _Reneg OLS FE	**Model 10** Financial _Reneg OLS FE	**Model 11** Work _Reneg OLS FE	**Model 12** Other _Reneg OLS FE
Pre	0.047	0.043	-0.153	-0.070	0.062	0.061	-0.161	-0.049	0.009	0.061	0.034	-0.018
	(0.307)	(0.275)	(0.127)	(0.104)	(0.303)	(0.269)	(0.124)	(0.102)	(0.087)	(0.072)	(0.075)	(0.044)
Political Competition												
Margin	-0.001	-0.002	0.001	-0.000	-0.001	-0.003	0.001	-0.000	-0.001	-0.001	0.003*	-0.000
	(0.004)	(0.004)	(0.002)	(0.001)	(0.004)	(0.004)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)
Margin2	0.000	0.000	-0.000	-0.000	0.000	0.000	-0.000	-0.000	0.000	0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Margin * Pre	0.009***	0.009**	-0.002	0.002	0.009***	0.009**	-0.001	0.002	0.008**	0.007*	-0.001	0.001
	(0.003)	(0.004)	(0.002)	(0.001)	(0.003)	(0.004)	(0.002)	(0.001)	(0.003)	(0.004)	(0.002)	(0.002)
Margin2 * Pre	-0.000***	-0.000**	0.000	-0.000	-0.000***	-0.000**	0.000	-0.000	-0.000***	-0.000**	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mayor Characteristics												
Male	-0.253	-0.187	0.076	-0.083	-0.242	-0.173	0.088	-0.078				
	(0.205)	(0.176)	(0.101)	(0.054)	(0.202)	(0.174)	(0.102)	(0.053)				
Age	0.007	0.001	-0.007**	0.004***	0.007	0.001	-0.007**	0.004***				
	(0.008)	(0.008)	(0.003)	(0.001)	(0.008)	(0.008)	(0.003)	(0.001)				
Right	-0.101	-0.028	-0.019	-0.064**	-0.075	-0.002	-0.008	-0.064**				
	(0.084)	(0.069)	(0.039)	(0.027)	(0.079)	(0.065)	(0.037)	(0.026)				
Male * Pre	0.211	0.142	0.163*	0.102	0.179	0.107	0.142	0.097				
	(0.241)	(0.206)	(0.090)	(0.083)	(0.236)	(0.203)	(0.087)	(0.082)				
Age * Pre	-0.005	-0.003	-0.000	-0.001	-0.005	-0.003	-0.000	-0.002				
	(0.003)	(0.003)	(0.002)	(0.001)	(0.003)	(0.003)	(0.002)	(0.001)				
Right * Pre	0.013	0.012	0.041	0.002	0.012	0.009	0.042	-0.003				
	(0.049)	(0.041)	(0.028)	(0.021)	(0.049)	(0.041)	(0.027)	(0.021)				

See the notes below the second part of the table (next page).

Table 1.10: Public-private comparison - Non-aggregated dataset - Part 2/2

	Model 1 Tot _Reneg OLS FE	**Model 2** Financial _Reneg OLS FE	**Model 3** Work _Reneg OLS FE	**Model 4** Other _Reneg OLS FE	**Model 5** Tot _Reneg OLS FE	**Model 6** Financial _Reneg OLS FE	**Model 7** Work _Reneg OLS FE	**Model 8** Other _Reneg OLS FE	**Model 9** Tot _Reneg OLS FE	**Model 10** Financial _Reneg OLS FE	**Model 11** Work _Reneg OLS FE	**Model 12** Other _Reneg OLS FE
Experience with the Private Operator												
Nb_Current_Contracts	-0.013	-0.012	-0.001	0.003					-0.003	-0.007	-0.002	0.005
	(0.024)	(0.020)	(0.011)	(0.009)					(0.023)	(0.018)	(0.011)	(0.009)
Nb_Past_Contracts	-0.053	-0.049	-0.020	0.007					-0.024	-0.034	-0.006	0.016
	(0.038)	(0.032)	(0.015)	(0.015)					(0.034)	(0.028)	(0.015)	(0.013)
Nb_Current_Contracts * Pre	-0.007	-0.009	-0.003	-0.004					-0.006	-0.007	-0.001	-0.003
	(0.009)	(0.008)	(0.006)	(0.003)					(0.008)	(0.007)	(0.005)	(0.003)
Nb_Past_Contracts * Pre	0.056*	0.061**	0.042**	-0.002					0.029	0.046*	0.035*	-0.013
	(0.033)	(0.026)	(0.018)	(0.016)					(0.031)	(0.024)	(0.018)	(0.015)
Controls												
Ct_Cycle	0.460	0.500*	0.054	-0.162	0.456	0.500*	0.046	-0.154	0.313	0.407*	-0.004	-0.120
	(0.302)	(0.272)	(0.093)	(0.099)	(0.300)	(0.270)	(0.096)	(0.096)	(0.266)	(0.234)	(0.097)	(0.093)
Ct_Cycle2	-0.242	-0.261	-0.003	0.063	-0.256	-0.277	-0.006	0.059	-0.140	-0.186	0.030	0.041
	(0.209)	(0.194)	(0.044)	(0.055)	(0.206)	(0.191)	(0.045)	(0.054)	(0.183)	(0.169)	(0.047)	(0.050)
Ct_Cycle * Pre	-0.358	-0.380	0.101	0.006	-0.315	-0.339	0.133	-0.015	-0.239	-0.347	0.026	-0.036
	(0.313)	(0.278)	(0.154)	(0.094)	(0.306)	(0.267)	(0.154)	(0.094)	(0.280)	(0.250)	(0.170)	(0.100)
Ct_Cycle2 * Pre	0.241	0.252	-0.089	0.005	0.236	0.251	-0.090	0.019	0.165	0.223	-0.030	0.028
	(0.232)	(0.213)	(0.097)	(0.064)	(0.227)	(0.206)	(0.098)	(0.065)	(0.206)	(0.192)	(0.103)	(0.064)
Constant	0.017	0.173	0.295*	-0.043	-0.012	0.144	0.295*	-0.049	0.125	0.052	0.030	0.051
	(0.397)	(0.392)	(0.155)	(0.084)	(0.413)	(0.406)	(0.157)	(0.084)	(0.083)	(0.064)	(0.061)	(0.035)
N	1,791	1,791	1,791	1,791	1,791	1,791	1,791	1,791	2,085	2,085	2,085	2,085
Adj. R2	0.208	0.151	0.085	0.091	0.207	0.149	0.083	0.093	0.174	0.139	0.077	0.056

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. The dataset was restricted to public contract renegotiations. All the specifications (Models 1 to 12) include contract and political cycles fixed effects. Models 1 to 4 present the results of the OLS regressions on the number of renegotiations per year and include all the independent variables. Models 5 to 8 do not include the variables capturing the past experience with the private operator. Models 9 to 12 do not include the variables capturing the mayors' characteristics.

1.6 Conclusion

This article proposed to test a fundamental difference between public and private contracts. While public contract renegotiation patterns are impacted by the proximity of elections, private renegotiation does not appear to be subject to political cycles. In other words, otherwise similar arrangements differ according to the identity (public *versus* private) of one of the parties. This important finding contributes to the small but growing literature studying the differences between public and private arrangements [Beuve et al., 2014; Moszoro et al., 2016; Spiller, 2008]. More generally, this finding highlights that *ex post* attitudes of contracting parties are partly due to public actors' political concerns and to the artificial time constraints they face. Our findings also indicate that politicians manipulate public contracts to enhance their election perspectives before elections and, thus, contribute to the political cycles literature.

Some limitations must be pointed out. First, we are unable to assess whether these opportunistic renegotiations negatively impact social surplus and/or the quality of the relationship between the parties. For instance, we do not have sufficient information on the final prices paid by users an their evolution through time. The absence of such information prevents us from definitively concluding that operators sometimes maximize political connections rather that profit in particular contracts or that renegotiations of prices before elections are later rewarded through price re-increases and/or awards of new contracts. In the same vein, we lack information to delve deeper into the determinants of mayors' political manipulations. For instance, we do not have sufficient information to determine whether incumbents are running for reelection. While political competition leads to significant results, richer information about the political ambitions of municipal policymakers would be worthwhile. Other information concerning the personal connections between the mayors and the private operator would also be helpful in more carefully investigating the shadow of the future and the shadow of the past. In this study, we had to

approximate these features by the number of ongoing and past contracts between the municipality and the operator, but further information about potential cronyism between the two parties is lacking. Finally, we decided to focus on the *ex post* influence of the political cycles, which has not previously been done, rather than on the *ex ante* dimension, which is also understudied. Future studies should aim to simultaneously encompass these two dimensions to investigate how they interact in practice. All these limitations represent avenues for future research, illustrating the great number of studies that remain to be carried out to grasp the extent of the singularity of public contracting.

Despite those limitations, our study highlights important results for the public administration literature. We show that public-private relations are fundamentally different than private-private relations. More importantly, we demonstrate that the political considerations of mayors have a strong impact on the way they manage public contracts. We give further insights on mayors' manipulations, and show that the latter are more frequent when political competition increases. Consequently, this article points to important public policy recommendations. As suggested by our empirical analysis, renegotiations of public contracts before local elections might be a "win-win" game between sitting municipal policymakers, who aim to maximize their chances of reelection, and private operators, who aim to maximize political connections. As a consequence, the loser of the game should be the remaining economic actor, that is the constituents, which is not the focus of the current article. As underlined by Kivleniece and Quelin [2012], public-private partnerships require a critical examination of underlying value creation and distribution mechanisms to understand for whom they create value and how. As soon as consumers might be excluded from value creation in those settings, the way in which contractual renegotiations are achieved and the reasons why they occur should be made much more transparent to all the stakeholders. Our argument is perfectly in line with Saussier and Tirole [2015], who request extended possibilities to renegotiate public contracts with the essential counterpart of increased transparency to avoid wasteful public expenditure and political manipulations.

1.7 Appendix: Additional Tables

Table 1.11: Robustness check - Aggregated dataset with concession contracts excluded

	Model 1 Tot_Reneg OLS FE	**Model 2** Financial_Reneg OLS FE	**Model 3** Work_Reneg OLS FE	**Model 4** Other_Reneg OLS FE
Pre	-0.028	-0.022	-0.008	-0.003
	(0.037)	(0.025)	(0.023)	(0.017)
Pre * Public	0.071	0.082***	0.034	-0.020
	(0.044)	(0.031)	(0.027)	(0.020)
	(0.011)	(0.009)	(0.007)	(0.005)
Constant	0.167***	0.100***	0.046***	0.042***
	(0.011)	(0.009)	(0.007)	(0.005)
N	1402	1402	1402	1402
Adj. R^2	0.664	0.668	0.584	0.507

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. All the regressions are run on the aggregated dataset (which was aggregated into one unique "Pre" and one unique "Post" election period), and from which we excluded concession contracts. All the specifications (Models 1 to 4) include contract and political cycles fixed effects. Models 1 to 4 present the results of the OLS regressions in which the dependent variables are the number of renegotiations per year (Total, Financial, Work and Other)..

Table 1.12: Public-private comparison - Non-aggregated dataset - Part 1/2

	Model 1 Dum_Tot _Reneg LPM FE	**Model 2** Dum_Fin _Reneg LPM FE	**Model 3** Dum_Work _Reneg LPM FE	**Model 4** Dum_Other _Reneg LPM FE	**Model 5** Dum_Tot _Reneg LPM FE	**Model 6** Dum_Fin _Reneg LPM FE	**Model 7** Dum_Work _Reneg LPM FE	**Model 8** Dum_Other _Reneg LPM FE	**Model 9** Dum_Tot _Reneg LPM FE	**Model 10** Dum_Fin _Reneg LPM FE	**Model 11** Dum_Work _Reneg LPM FE	**Model 12** Dum_Other _Reneg LPM FE
Pre	-0.0019	-0.0847	-0.1599	-0.0703	-0.0065	0.0093	0.0335	-0.0247	0.0279	-0.0426	-0.1618	-0.0490
	(0.1945)	(0.1775)	(0.1239)	(0.1040)	(0.0695)	(0.0600)	(0.0634)	(0.0383)	(0.1965)	(0.1780)	(0.1206)	(0.1023)
Political Competition												
Margin	0.0006	-0.0012	0.0008	-0.0001	0.0013	-0.0004	0.0031**	-0.0004	0.0004	-0.0015	0.0006	-0.0000
	(0.0027)	(0.0026)	(0.0015)	(0.0012)	(0.0024)	(0.0020)	(0.0016)	(0.0012)	(0.0026)	(0.0026)	(0.0015)	(0.0012)
$Margin^2$	-0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.0000	-0.0000*	-0.0000	-0.0000	0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Margin * Pre	0.0065**	0.0074***	-0.0016	0.0018	0.0047	0.0057**	-0.0015	0.0015	0.0066**	0.0073***	-0.0012	0.0016
	(0.0031)	(0.0028)	(0.0017)	(0.0015)	(0.0030)	(0.0028)	(0.0020)	(0.0014)	(0.0031)	(0.0028)	(0.0018)	(0.0014)
$Margin^2$ * Pre	-0.0001**	-0.0001**	0.0000	-0.0000	-0.0001*	-0.0001**	0.0000	-0.0000	-0.0001**	-0.0001**	0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Mayor Characteristics												
Male	-0.1112	-0.1000	0.0625	-0.0828					-0.0935	-0.0831	0.0762	-0.0780
	(0.1289)	(0.1297)	(0.1001)	(0.0544)					(0.1253)	(0.1271)	(0.1004)	(0.0530)
Age	0.0034	-0.0014	-0.0062**	0.0038***					0.0035	-0.0012	-0.0063**	0.0039***
	(0.0040)	(0.0045)	(0.0027)	(0.0014)					(0.0041)	(0.0046)	(0.0027)	(0.0014)
Right	-0.0700	-0.0164	-0.0192	-0.0639**					-0.0531	0.0047	-0.0069	-0.0638**
	(0.0671)	(0.0541)	(0.0386)	(0.0273)					(0.0644)	(0.0524)	(0.0369)	(0.0262)
Male * Pre	0.1484	0.0988	0.1627*	0.1023					0.1163	0.0638	0.1394	0.0968
	(0.1881)	(0.1685)	(0.0892)	(0.0829)					(0.1859)	(0.1666)	(0.0863)	(0.0816)
Age * Pre	-0.0030	-0.0006	0.0001	-0.0014					-0.0035	-0.0013	0.0002	-0.0018
	(0.0024)	(0.0021)	(0.0021)	(0.0014)					(0.0022)	(0.0019)	(0.0019)	(0.0014)
Right * Pre	0.0035	0.0090	0.0396	0.0017					-0.0034	0.0014	0.0389	-0.0033
	(0.0405)	(0.0342)	(0.0268)	(0.0211)					(0.0409)	(0.0353)	(0.0261)	(0.0214)

See the notes below the second part of the table (next page).

Table 1.13: Public-private comparison - Non-aggregated dataset - Part 2/2

	Model 1 Dum_Tot _Reneg LPM FE	**Model 2** Dum_Fin _Reneg LPM FE	**Model 3** Dum_Work _Reneg LPM FE	**Model 4** Dum_Other _Reneg LPM FE	**Model 5** Dum_Tot _Reneg LPM FE	**Model 6** Dum_Fin _Reneg LPM FE	**Model 7** Dum_Work _Reneg LPM FE	**Model 8** Dum_Other _Reneg LPM FE	**Model 9** Dum_Tot _Reneg LPM FE	**Model 10** Dum_Fin _Reneg LPM FE	**Model 11** Dum_Work _Reneg LPM FE	**Model 12** Dum_Other _Reneg LPM FE
Experience												
Nb_Current_Contracts	-0.0024	-0.0084	-0.0016	0.0029	0.0044	-0.0036	-0.0034	0.0057				
	(0.0156)	(0.0134)	(0.0091)	(0.0085)	(0.0155)	(0.0129)	(0.0091)	(0.0087)				
Nb_Past_Contracts	-0.0225	-0.0296	-0.0185	0.0068	-0.0038	-0.0193	-0.0053	0.0152				
	(0.0281)	(0.0234)	(0.0145)	(0.0150)	(0.0251)	(0.0218)	(0.0144)	(0.0132)				
Nb_Current_Contracts * Pre	-0.0098	-0.0119*	-0.0045	-0.0037	-0.0090	-0.0096	-0.0022	-0.0029				
	(0.0073)	(0.0068)	(0.0055)	(0.0029)	(0.0064)	(0.0061)	(0.0048)	(0.0030)				
Nb_Past_Contracts * Pre	0.0452*	0.0488**	0.0454**	-0.0019	0.0267	0.0392*	0.0386**	-0.0121				
	(0.0252)	(0.0222)	(0.0176)	(0.0155)	(0.0236)	(0.0218)	(0.0173)	(0.0146)				
Controls												
Ct_Cycle	0.0918	0.1513	0.0794	-0.1621	0.0157	0.1280	0.0126	-0.1254	0.0979	0.1642	0.0756	-0.1540
	(0.1575)	(0.1295)	(0.0887)	(0.0992)	(0.1514)	(0.1238)	(0.0903)	(0.0896)	(0.1561)	(0.1270)	(0.0906)	(0.0955)
Ct_Cycle^2	0.0119	-0.0182	-0.0148	0.0630	0.0660	0.0107	0.0206	0.0431	-0.0021	-0.0381	-0.0216	0.0590
	(0.0899)	(0.0733)	(0.0411)	(0.0554)	(0.0877)	(0.0738)	(0.0430)	(0.0487)	(0.0887)	(0.0705)	(0.0425)	(0.0544)
Ct_Cycle * Pre	-0.0863	-0.0954	0.0542	0.0061	-0.0139	-0.0746	0.0339	-0.0320	-0.0780	-0.0858	0.0840	-0.0151
	(0.1836)	(0.1577)	(0.1270)	(0.0944)	(0.1735)	(0.1521)	(0.1319)	(0.0883)	(0.1834)	(0.1583)	(0.1278)	(0.0944)
Ct_Cycle^2 * Pre	0.0295	0.0344	-0.0687	0.0049	-0.0138	0.0201	-0.0446	0.0259	0.0447	0.0492	-0.0673	0.0186
	(0.1311)	(0.1146)	(0.0813)	(0.0642)	(0.1217)	(0.1090)	(0.0807)	(0.0582)	(0.1323)	(0.1154)	(0.0827)	(0.0650)
Constant	0.0681	0.2402	0.2684*	-0.0429	0.1260*	0.0756	0.0302	0.0513	0.0472	0.2060	0.2629*	-0.0488
	(0.2041)	(0.2225)	(0.1509)	(0.0845)	(0.0695)	(0.0527)	(0.0558)	(0.0335)	(0.2078)	(0.2303)	(0.1523)	(0.0844)
N	1,791	1,791	1,791	1,791	2,085	2,085	2,085	2,085	1,791	1,791	1,791	1,791
Adj. R^2	0.2537	0.2203	0.1858	0.2064	0.2284	0.2021	0.1676	0.1678	0.2513	0.2161	0.1812	0.2056

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Cluster robust standard errors in parentheses. The dataset was restricted to public contract renegotiations. All the specifications (Models 1 to 12) include contract and political cycles fixed effects. This Table presents the results of the Linear Probability Models in which the dependent variables are dummies indicating whether a renegotiation occurred or did not occur for each year. Models 1 to 4 include all the independent variables. Models 5 to 8 do not include the variables capturing the past experience with the private operator. Models 9 to 12 do not include the variables capturing the mayors' characteristics.

Chapter 2

When Does Ideology Matter? An Empirical Analysis of French Municipalities' Make-or-Buy Choices*

2.1 Introduction

The study of municipalities' make-or-buy choices is of primary importance, because in many countries, most of the investment is made at the municipal level. In France, local public administrations' investment represents about 60% of public investment, and 10% of total investment.[1] A poor management of public services can therefore lead to an significant waste of public money. Traditionally, governments have produced services in-house, that is with their own workers, offices, and equipments. Yet, over the past decades, governments (and especially local governments) have increasingly relied on external actors to produce services. Up to now, a large amount of research, theoretical as well as empirical, has analyzed why local governments choose to outsource public services. From a theoretical point of view, two main rea-

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[1]See the General Introduction.

sons are generally put forward. On the one hand, Public Choice scholars conceive contracting out as a way to circumvent public inefficiencies [Savas, 1989]. From this perspective, private operators may be more efficient than public providers because of their better management techniques, that rely on the use of advanced technology and on more efficient and flexible deployment of workers [Donahue, 1989]. On the other hand, Transaction Cost Theory insists on the intrinsic characteristics of services to explain the choice between contracting out and in-house service provision [Williamson, 1999a; Brown and Potoski, 2003; Hefetz and Warner, 2004; Levin and Tadelis, 2010].

It is important to note that there is no consensus about the influence of externalization on the costs of public services; recent studies find no systematic relation between externalization and cost savings [Boyne, 1998a; Hodge, 2000; Bel et al., 2010]. The potential gains from externalization differ, according to the characteristics of services (in particular the asset specificity and the level of competition), and the geographic area [Bel et al., 2010]. The make-or-buy choice should therefore be analyzed cautiously by each city for each service, and the decisions should be motivated by pragmatism in order to save on costs while maintaining the quality. In a normative way, mayors' ideology[2] shall not impact their contracting out choices.

The existing literature identifies a range of factors that influence how governments choose to produce services, and the latter can be grouped into four categories: economic efficiency, fiscal restrictions, interest groups, and ideological attitudes [Bel and Fageda, 2007]. Curiously, Bel and Fageda [2007] find that the ideology of mayors in office is the less studied motive. Moreover, its impact is most of the time found to be non-significant, and the authors conclude that the debate over privatization has moved from ideology to pragmatism [Hefetz and Warner, 2004; Bel and Fageda, 2007].

[2]In this paper as in most public administration studies, mayors' ideology is measured by their political affiliation. This measure captures what Kalt and Zupan [1984] name "impure" ideology (see Section 2.2.1).

The general consensus is that if political considerations may have played a role in make-or-buy decisions in the eighties, and especially in the United States (US), todays' governments are more guided by practical reasons as contracting out has become less controversial [Bel and Fageda, 2009]. This result is surprising, and especially in European contexts, as it is part of collective imagination that left-wing governments generally fight for greater state intervention. Therefore, a recent set of studies challenges Bel and Fageda [2007]'s statement, and some authors do find an important role of ideology in explaining externalization decisions [Picazo-Tadeo et al., 2010; Sundell and Lapuente, 2012; Gradus et al., 2014]. Picazo-Tadeo et al. [2010] indeed highlight that most previous studies use cross-sectional data, and do not measure ideology at the time the externalization decision was taken. However, while the papers that use more accurate measures of mayors' ideology find that right-wing mayors conclude more contracts with the private sector, they surprisingly do not find any impact of left-wing affiliations on the propensity to (re-)integrate public services [Gradus et al., 2014]. This finding is puzzling: if right-wing mayors prefer externalization, why don't left-wing mayors try to re-integrate public services?

This result is especially surprising as it seems that public services re-integration is an important campaign argument for left-wing candidates; a recent municipal campaign in the city of Paris provides an interesting example for that. In Paris, water services have been externalized to private companies by the right-wing mayor Jacques Chirac in 1984, using delegation contracts of a duration of 25 years (the contracts therefore expired in 2009). In 2001, a left-wing candidate (Bertrand Delanoë) was elected mayor of Paris.[3] During the 2008 municipal campaign, one of the important promises of the incumbent Bertrand Delanoë, who ran for a second mandate, was to go back to in-house provision of water services [Bauby and Similie, 2013]. Bertrand Delanoë was re-elected, and he re-internalized water services in 2009, when delegation contracts expired. If this example does not prove that left-wing mayors systematically propose to go back to internal provision, it seems to

[3]In France, municipal elections took place in 1983, 1989, 1995, 2001, 2008 and 2014.

indicate that make-or-buy choices can be constrained by previous decisions, made by previous mayors.

Therefore, our aim is to show that the management of public services is path-dependent, *i.e.* strongly connected to choices made by previous politicians. We investigate how the history of cities' ideology explains the way they allocate contracting out and in-house provision in the present. The reasoning is that once a public service has been externalized, current mayors' hands are tied for two reasons: first, because of the length of delegation contracts concluded with the private sector (see the example of water services in Paris above), and second because of the loss of competencies that externalization implies. Our results also highlight that the influence of ideology is all the more important when public services are characterized by high levels of resident sensitivity.

The dataset employed in this paper describes the mode of provision of a range of 7 services (childhood care, collective catering, parking lots, street lighting, waste collection, water distribution and water treatment) for 156 French municipalities of more than 10,000 inhabitants. Our work includes a careful examination of the impact of successive mayors' ideology (number of left-wing mayors over a 26-year period, which represents 5 elections) on the propensity to produce services internally. We also investigate the impact of the sensitivity of residents (that is the degree to which citizens are sensitive to problems that might be encountered in the provision of each service) on in-house provision. We indeed replicated Levin and Tadelis [2010]'s survey and methodology to assess the characteristics of the 7 public services. We finally control for the impact of economic factors (population and density of cities), fiscal stress (level of debt per capita), and the presence and strength of interest groups (unemployment and income per capita) – all these variables being measured over the 2006-2013 period.

The remainder of the article stands as follows: Section 2.2 depicts the related literature, and permits to formulate 3 propositions; Section 2.3 contains a description of the dataset, of the variables that were constructed, and of the empirical strategy; Section 2.4 comments the main results, and a final section discusses the implications of our results.

2.2 Related Literature and Propositions

In a first subsection, the influence of ideology on make-or-buy decisions is examined, and three propositions are established. In a second subsection, the other motives that impact local governments make-or-buy choices are described.

2.2.1 The impact of ideology on "make-or-buy" decisions

The ideology of elected officials is a concept that is challenging to measure, because it requires to perfectly understand what shall be called "ideology". In order to better comprehend this concept, Kalt and Zupan [1984] distinguish between "pure" and "impure" ideology. The manifestations of pure ideology give the individuals the satisfaction of knowing that they have improved the situation of others, they have served public interest. In contrast, impure ideology implies that political representatives may serve their own interests, for instance their desire to be reelected; politicians may then rely on the dictates of an ideology as a shortcut to the service of their constituents' goals. Kalt and Zupan [1984] are able to disentangle the two types of ideology, because they study the vote of a law in the US Senate about strip mining. Since this law has a positive impact on the environment, senators motivated by pure ideology would systematically vote in favor of the latter. In the case of contracting out decisions, we suspect that there is no such thing as "pure ideology", because the total welfare gains (or losses) associated with the externalization of public services are unknown. For instance, while empirical works conducted in the seventies find a negative effect of externalization on costs (see for example Crain

and Zardkoohi [1978] or Pommerehne and Frey [1977]), more recent meta-analyses find no systematic relation between contracting out of public services and cost savings [Boyne, 1998a; Hodge, 2000; Bel et al., 2010]. Nonetheless, as emphasized by Sundell and Lapuente [2012], right-wing politicians may have a greater use of contracting out because they *believe* in the benefits of market competition (contrary to left-wing politicians). However, the authors show that the use of contracts by right-wing mayors increases with political competition, and conclude that externalization is used in a "Machiavellian" fashion, in order to "purchase" the electoral support of certain constituents. In this article, we follow public administration scholars and measure ideology by the political affiliation of mayors. This type of ideology must be seen as "impure" in Kalt and Zupan [1984]'s categorization, and will measure the willingness of mayors to please the constituents that belong to their political affiliation.[4]

If many empirical studies have investigated the determinants of make-or-buy choices operated by local governments, the ideology remains the less tested factor. In 2007, a review of the existing literature concludes that "*the ideological attitudes of policy makers do not seem to influence in a systematic way the service delivery choices of local governments.*" [Bel and Fageda, 2007, page 529]. Among the 28 papers included in this review, only 13 incorporate a variable capturing ideology. However, most of these studies, which do investigate the influence of ideology, do not find any significant impact of this variable on local governments' decisions, both in the US [McGuire et al., 1987; Lòpez-de Silanes et al., 1997; Warner and Hebdon, 2001; Levin and Tadelis, 2010; Brown et al., 2008] and in Europe [Bel and Miralles, 2003; Ohlsson, 2003]. This low explanatory power of ideology variables is often considered as a proof that the debate over externalization has become less controversial,

[4]Preferences vary across constituents depending on their political affiliation. For instance, a survey of 1,000 French constituents that was conducted before the 2014 municipal elections reveals that the maintenance of high quality public services is considered as of "very high priority" by 43.5% of left-wing voters, against 35,5% of right-wing constituents. Moreover, the electorate of the left-wing parties attaches a higher priority to the issues of housing (37%) and social actions (37%), while right-wing voters accord a higher priority to the issues of local taxes (65%) and security (68%). A summary of this Harris Interactive survey, "The French, municipal elections and the mayors' political label", is available in Appendix B, Section 2.6.2.

and that local governments are more guided by pragmatic rather than ideological motivations [Hefetz and Warner, 2004; Bel and Fageda, 2007]. If this assertion is plausible, it is nonetheless surprising since it is part of collective imagination that left-wing governments are in favor of greater state intervention, and more reluctant to privatization.

In that sense, scholars have continued to study the impact of ideological motives to explain contracting out decisions, and a set of recent studies pleads that ideology still plays a role in externalization decisions, but it is most of the time inappropriately measured (see for instance Picazo-Tadeo et al. [2010]). Most empirical studies are indeed based on cross-sectional data and simultaneously observe the proportion of public services that are contracted out and ideological measures at date t. Picazo-Tadeo et al. [2010] claim that ideology variables should rather be measured at the time the externalization decision was taken. The authors adopt this methodology to study Southern Spain water sector, and find that left-wing mayors reject delegating the management of water services to private firms. This first result is therefore in line with the assertion that left-wing governments are more reluctant to privatization. In the same vein, Sundell and Lapuente [2012] study the case of Swedish municipalities, and find that center-right governments have a greater propensity to contract out public services.[5] Gradus et al. [2014] study the shifts from and to the market for refuse collection services in Dutch municipalities. Very interestingly, they find that shifts to the market (*i.e.* from in-house provision to externalization) are more likely for right-wing governments; but shifts from the market (*i.e.* backward integration) are *not* more likely for left-wing governments. Their puzzling result seems to indicate that if ideology plays a role in explaining the externalization of public services, political affiliation does not explain in-house provision. Our paper proposes an explanation for that puzzle. If studies which measure ideology at the time of contracting out decisions have made a certain contribution

[5]The authors' dependent variable is actually defined as *the share of the cost for public services spent on acquiring services from providers* [Sundell and Lapuente, 2012, page 474]. They do not distinguish between different types of public services, and argue that the influence of ideology does not differ among services. This assertion will be challenged in this article.

to the literature, we further argue that make-or-buy decisions are path-dependent, and ideology should be measured in the long-run. Our argument is that it is not straightforward for a left-wing mayor to go back to public provision once previous officials have contracted out some services.

First of all, contracts concluded with private operators to develop, exploit and maintain public services are long-term contracts, that cannot be terminated by future administrations. Hence mayors' hands can be tied, and they may not be able to reintegrate services that have previously been externalized. In public-private relationships, private suppliers have to protect themselves from governmental opportunism, that is from the fact that governments may try to change the rules of the game for political reasons. Additionally, both parties have to protect against "third-party opportunism", that comes from parties that are not directly part of the contract, but may have an interest in its success or failure [Spiller, 2008]. This theory, developed by Spiller [2008], explains why contracts concluded with a public partner present high levels of rigidity, that is they are longer and include more clauses than contracts in the private sector. Since public agreements are long-term and rigid contracts, they cannot be terminated easily.

Moreover, municipalities may lose the capabilities needed to manage public services themselves once they have been outsourced, and consequently lose the ability to use re-integration as a credible sanction. The difficulties experienced by municipalities when it comes to the re-integration of a public service can be compared to the difficulties of a switch of supplier. Such an argument was first defended by Williamson [1976] through his concept of "fundamental transformation". As a result of specific investments incurred by the operator in place, "*bidding parity between the incumbent and prospective rivals at the contract renewal interval is unlikely to be realized*" [Williamson, 1976, page 81]. In other words, when a contract expires, the incumbent benefits from an advantage over its potential competitors, because it has developed specific investments during the contractual relationship. But th incumbent's ad-

vantage can also lie in the information the company possesses after having operated the service for a long period of time. On that subject, Chong et al. [2015], in their study of the water sector in France, find that franchisees acquire specific knowledge on water systems (locations of leaks, condition of particular conduits and pieces of equipment, etc.) they can withhold from cities. Indeed, if general information has to be shared with local governments, the incumbent still benefits from a privileged access to detailed information thanks to the day-to-day management of the system. Therefore, switching of operator can be hard to achieve; just as a switch back to internal provision can be arduous.

Finally, it is also important to note that going back to public provision is often associated with legal difficulties[6] and potential conflict that can be politically costly. For instance, Masten [2011] notes in his study on the shift to public ownership of water utilities in the US that those phenomena generate costly negotiations. In this process, water providers can deteriorate the quality of the service for residents, in order to generate pressure on municipal administrators, by scheduling repairs and upgrades to be as disruptive as possible. Those three elements (length and rigidity of contracts, loss of capabilities, and legal or political costs) lead to Proposition 1, where we argue that ideology can explain the proportion of public services produced in-house, when it is measured over a long period:

Proposition 1. *A municipality's in-house provision of services at time t is positively associated with the extent to which that municipality has been governed by left-wing officials in multiple prior time periods.*

[6] In an institutional report entitled "Quelle compétition pour l'amélioration du service public ? Comparabilité, Transparence et Réversibilité" ("Which competition for the improvement of public services? Comparability, Transparency and Reversibility"), the French Institute of Delegated Management describes all the difficulties associated with a shift back to public provision in the case of France (loss of competences, legal rules of staff transfers, legal taxing rules, etc.).

Additionally, we expect the influence of long-run ideology to differ, depending on the characteristics of services. Three noteworthy studies investigate the influence of service characteristics on local governments' make-or-buy decisions [Brown and Potoski, 2003; Levin and Tadelis, 2010; Hefetz and Warner, 2012]. Brown and Potoski [2003] apply a transaction cost framework completed with institutional and market theories to examine governments' service production in the US. They use survey data to measure service characteristics, and notably demonstrate that local governments rely more on internal production when the level of asset specificity increases,[7] when the service is extremely difficult to measure, and when cities do not benefit from enough market competition (*i.e.* small municipalities). Based on the same kind of approach and methodology, Levin and Tadelis [2010] and Hefetz and Warner [2012] also analyze make-or-buy choices through service characteristics such as asset specificity, difficulties of contracting, and market characteristics, but expand the focus and also include place (type of geographic/demographic area), and citizen characteristics (public interest in the service delivery process). Both Levin and Tadelis [2010] and Hefetz and Warner [2012] find that greater levels of citizen sensitivity are associated with higher levels of in-house provision. Since a private operator can deteriorate the quality of a service to put pressure on officials Masten [2011], the propensity to keep control over services increases with their level of sensitivity. However, those studies do not include ideology in their analysis or do not find any statistical significance for this factor. As a (counter-intuitive) result, Levin and Tadelis [2010] find that cities located in counties that voted Republican for the 2000 presidential election[8] use less contracts; but the authors outline that this result seems to be sensitive to their empirical specification. We contribute to this literature by studying simultaneously the impact of service characteristics and long-run ideology on mayors' propensity to produce services in-house.

First, we believe that the influence of ideology should be more important for services that are closely scrutinized by citizens. As exposed in the beginning of this

[7] More precisely, they find a non-linear effect, since very high levels of asset specificity are associated with lower levels of internal service production.

[8] The authors use cross-section data from two datasets, in 1997 and 2002

subsection, mayors' political affiliation is a measure of their "impure" ideology [Kalt and Zupan, 1984]. This ideology refers to their willingness to pursue local policies in accordance with their constituents' ideology. The latter should therefore play a more important role when the sensitivity of residents is high. Indeed, the priority of left-wing mayors should be to keep control over the services that are highly sensitive; while contracting out (and reintegration) is less of a concern for services that are not or little sensitive. This argument justifies the formulation of our second proposition:

Proposition 2. *The impact of ideology is more important for services that are characterized by high levels of resident sensitivity.*

Second, we expect the impact of long-run ideology to be more important for complex services, that are characterized by long-term contracts on the market. Indeed, when services require investments in long-lived assets and in capabilities, contract duration is higher and the issues of the length of contracts and of capabilities' depletion are more important. As explained above, such contracts are associated with situations in which incumbents are likely to be in privileged bidding positions [Chong et al., 2015], due to their ownership of specialized assets and/or to the specialized knowledge developed during the operation of the initial contract. In contrast, mayors' choices are less likely to be restricted for "short-term services", as contracts concluded by previous administrations for those services may not (or at least less) lead to a loss in competences; and they are more likely to be expired because of their shorter length.[9] In other words, the path-dependency of make-or-buy choices should be greater for services which induce long-term contracts on the market. This is the essence of the third and last proposition:

Proposition 3. *The impact of ideology in the long-run is more important for services that are characterized by long-term contracts on the market.*

[9] In France, mayors are in office for six years.

In order test for those propositions, we need to take into account a range of control variables. The following subsection describes the main factors that are taken into account in the existing literature on local governments' make-or-buy decisions, and briefly details their expected impact on the proportion of services internally produced.

2.2.2 The other determinants of local governments' make-or-buy choices

As analyzed by Bel and Fageda [2007], the factors that influence make-or-buy decisions of local governments can be grouped into four categories: economic efficiency, political processes, fiscal stress, and ideological attitudes. As we have dealt with the latter above, this subsection focuses on the three other factors.

Economic efficiency

Cost reduction is one of the main arguments in favor of contracting out public services. The potential of cost reduction mainly depends on two macroeconomic characteristics of local governments: their size and density. The size is usually measured by population variables, that can play two adverse effects on the propensity to keep public services in-house. On the one hand, delegation of public services should be preferred when it offers the possibility to exploit economies of scale, that is when the public service has been delivered over a suboptimal jurisdiction [Donahue, 1989]. Small municipalities should thus have greater incentives to rely upon companies, which operate in wider areas, on potentially a more efficient scale [Bel and Fageda, 2011; Gradus et al., 2014]. However, the literature on the private sector showed that large firms can suffer from dis-economies of scale [Puranam et al., 2013]; in the same way, large municipalities can suffer from the same evils. For instance, good management practices are more difficult to implement at a large level. As a consequence, contracting out may also result in cost-reductions for large municipalities. Moreover, these big cities can take advantage of competition from

a larger number of service providers. Hence studies have found that that large and urban areas tend to externalize public services to private firms more often [Levin and Tadelis, 2010]. In the same vein, Miralles [2008] considers that bigger cities, as they exhibit a higher density of population, are more prone to delegate public services for complexity reasons. Since the difficulty to design and operate public services increases with the density of population, it is worthwhile for dense municipalities to delegate public services to more experienced and competent private operators. In order to take into account these two potential effects, our empirical tests will include variables controlling for the size of municipalities and for their density.

Interest groups

Among non-economic factors, the presence of interest groups might also play a role in explaining the decision of local governments to outsource public services. Interest groups may have a particular interest in the rents derived from a given mode of provision of public services. For instance, public employees and unions should act in favor of internal production [Miralles, 2008]. In contrast, highly vulnerable municipalities (low income per capita and high unemployment) can encourage elected officials to maintain in-house provision of public services, in order to support employment in the public sector. Here-again, empirical studies tend to confirm such hypotheses. For instance, some works find a negative relationship between the amount of delegation and the degree of unionization in the public sector [Warner and Hebdon, 2001; Levin and Tadelis, 2010], or alternatively a positive relationship between privatization and the weight of high-income households [Warner and Hefetz, 2002].

Three comments have to be made at this point. First, as in many other countries, it is illegal to measure the number of public employee union members in French municipalities. Consequently, an alternative is to follow Lopez de Silanes et al. [1997] and take labor market conditions as an approximation of interest groups.

In general, we would expect a government to be less willing to change ownership to the market if unemployment is high, as this change would decrease the probability for workers to be hired locally. Moreover, the weight of public employees is an explanatory variable that should be taken very cautiously. Indeed, such a measure is statistically biased since the determination of service delivery choices and the percentage of public employees is simultaneous: a more intense use of external suppliers implies *per se* a reduction in the number of public employees [Bel and Fageda, 2007]. Third and finally, the influence of income per capita on service delivery choices also has to be considered carefully. Indeed, if high-income households may prefer privatization they can also afford additional taxes that are usually associated with in-house provision [Boyne, 1998b].

Fiscal stress

The provision of local public services can be financed by local governments in two ways: through local taxes payed by citizens, or through transfers from the national government. Nevertheless, those two sources of funding are not endlessly expandable and even tend to decrease in time of economic recession. For this reason, most empirical studies include fiscal variables designed to measure the effects of such restrictions, and the usual hypothesis is that those constraints positively impact the likelihood of externalization. The variables commonly used to test this hypothesis are the tax burden, legal limitations on local tax levels, and the size of transfers from the central government. Most of the time, empirical studies provide consistent results with the fiscal stress hypothesis (see for instance McGuire et al. [1987]; Brown et al. [2008]; Hebdon and Jalette [2008] in the US and Dijkgraaf et al. [2003] in Netherlands).[10] High levels of fiscal stress reduce the ability of municipalities to raise revenues, affect their ability to finance their own local public services, which leads to an increase in the likelihood to delegate public services.

[10]Most of the studies conducted on US data that find a positive relationship between privatization and fiscal restrictions, rely on a multi-service setting [Bel and Fageda, 2007].

The following section describes the empirical setting used to test for our three propositions.

2.3 Empirical setting

This section describes the dataset which is employed in the empirical tests, the variables that were constructed, and the empirical methodology used to test our propositions.

2.3.1 Data sources

We obtained data from a survey carried out by the French Institute of Delegated Management ("Institut de la Gestion Déléguée", hereafter IGD). The questionnaire was administrated by the IGD during the year 2014, to 210 French municipalities of more than 10,000 inhabitants, by telephone and/or Internet. The IGD conducted this survey after the last French municipal elections,[11] and the questionnaire was completed by the year 2015. The final dataset we exploit consists of 156 municipalities and 7 public services (childhood care, collective catering, parking lots, street lighting, waste collection, water distribution, and water treatment). Every municipality was asked to indicate the actual mode of provision for each public service. We thus know whether, in 2015, each service is provided in-house by a municipality ("make"), or whether long-term contracts are concluded with companies ("buy").[12]

It is important to note that, in France, it is mandatory by law for every municipality to provide each public service. Therefore we do not have to control for the fact that cities decide to provide public services only if citizens ask for them, as it may be the case in the US [Brown and Potoski, 2003]. Nonetheless, French municipalities can

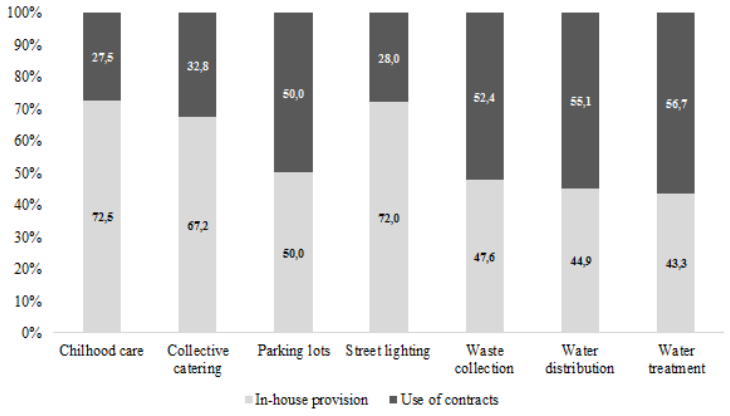
[11] The last municipal elections were held in March, 2014.

[12] We only consider contracts for which the company is endowed with a global mission (conception, exploitation, maintenance, etc.), and does incur a financial risk associated with the project.

delegate the management of some public services to higher layers of local government through inter-municipal cooperation. In the existing literature, some papers consider that municipalities can either make, buy, or conclude contracts with other governments [Warner and Hebdon, 2001; Brown and Potoski, 2003]. For instance, Brown and Potoski [2003], whose study is based on American data issued by the International City/County Management Association (ICMA), construct a multinomial logit and examine inter-municipal cooperation as one choice among others. However, in France as in most European countries, inter-municipal cooperation is the result of a long historical process initiated from the end of the nineteenth century [Hulst and Van Montfort, 2007]. Inter-municipal entities were originally created in order to overcome considerable deficiencies of scale at the municipal level, but today most examples of inter-municipal cooperation have a compulsory nature [West, 2007; Bel and Warner, 2015]. Therefore it is not relevant to consider inter-municipal cooperation as one choice among others when studying European data, and we only examine the services for which municipalities have not delegated the competency to an inter-municipal body, and actually choose between in-house provision and contracting out. This explains why the number of observations falls from 210 to 156 cities. Indeed, we only keep cities that have at least three (over the seven previously mentioned) services that are managed at the city level. In the end, those 156 cities correspond to a set of 612 services (*i.e.* the average city of the sample is responsible for 3.9 services).

If the decision to make-or-buy obviously depends on the characteristics of services, we still observe some heterogeneity among cities: Figure 2.1 shows that for each service, some municipalities decide to conclude long term contracts with the private sector while others decide to provide the service in-house, indicating that services' characteristics are not the only drivers of the make-or-buy decision. Consequently, municipal characteristics, among which the political affiliation of successive mayors, might play a role in the choice of the mode of provision.

Figure 2.1: Level of in-house provision by service among municipalities (in %)



2.3.2 Variables

In order to test for the impact of successive mayors' ideology on the propensity to provide public services in-house, we construct a range of dependent, ideological and control variables. Our study includes distinct analysis for different datasets, that are described in the following, together with the dependent variables.

Dependent variables

We consider two datasets in the empirical investigation: one at the municipal level (*i.e.* one observation by municipality, the "aggregated dataset" hereafter), and one at the service level (*i.e.* one observation by service, the "service dataset" hereafter). The first dependent variable is constructed over the aggregated dataset as the proportion of services in-house (in 2015). In other words, the variable $Pct\_inhouse_i$ is computed as the ratio between the number of services provided in-house by municipality i, and the total number of services provided by this municipality.[13] This type of variable is frequently used in studies that investigate make-or-buy choices [Boyne, 1998b]. Moreover, we are especially interested in the study of the aggregated dataset because we suspect externalization choices for a given service to be correlated with previous make-or-buy decisions, made for other services. Outsourc-

[13] That is the number of services that are not delegated to a higher layer of government - see Section 2.3.1.

ing one service to the private sector when all other services are produced in-house may be both more politically sensitive and more difficult to manage. On the other hand, one service may also be more difficult to externalize when all other services are already managed by the private sector, as this last outsourcing decision would represent a complete stepping down of the municipality. In other words, we expect contracting out decisions to be correlated among services. Descriptive statistics for this aggregated dataset are displayed in Table 2.1. The average municipality provides slightly less than 63% of services in-house; and the distribution of the dependent variable ranges from 0 (every service contracted out) to 100 (every service provided with public employees).[14]

In a second time, we further explore the impact of ideology variables on in-house provision, according to the type of service that is considered. We want to challenge Sundell and Lapuente [2012]'s statement; the authors argue that the effect of political factors on the decision to contract out is not expected to differ among services. On the contrary, we believe that the influence of ideology should be more important for some services, and especially for the ones that display high levels of resident sensitivity (Proposition 2). As a consequence, we study the service dataset (which contains 612 observations). This approach allows to introduce service fixed effects in the specifications, but also to take into account the central issues of resident sensitivity and asset specificity. Descriptive statistics for the service dataset are provided in Table 2.2.

[14]More precisely, among the 156 municipalities of the dataset, 15 cities contract out every service ($Pct\_inhouse_i = 0$), and 30 cities provide every service in-house ($Pct\_inhouse_i = 100$).

Table 2.1: Descriptive statistics on the aggregated dataset

Variable	N	Mean	Std. Dev.	Min	Max
Dependent variable					
Percentage of public services provided in-house (in 2015)	156	62.91	33.34	0	100
Ideology Variables					
Political variables (municipal elections)					
Nb of left-wing Mayors since 1989	156	2.29	1.94	0	5
Left-wing mayors since 1989	156	0.21	0.41	0	1
Left-wing mayors since 1995	156	0.23	0.42	0	1
Left-wing mayors since 2001	156	0.26	0.44	0	1
Left-wing mayors since 2008	156	0.32	0.47	0	1
Left-wing mayors since 2014	156	0.33	0.47	0	1
Political variables (presidential elections)					
Nb of left-wing presid. majority since 1988	156	1.79	2.03	0	5
Left-wing presid. majority since 1988	156	0.19	0.39	0	1
Left-wing presid. majority since 1995	156	0.19	0.39	0	1
Left-wing presid. majority since 2002	156	0.21	0.40	0	1
Left-wing presid. majority since 2007	156	0.21	0.40	0	1
Left-wing presid. majority since 2012	156	0.46	0.50	0	1
Control Variables					
Cities' Characteristics[a]					
Mean Population[b]	156	98.14	195.53	9.75	2222.98
Mean Density[c]	156	41.42	44.93	1.46	254.13
Mean Unemployment	156	9.21	3.21	5	34.44
Mean Income per Capita[d]	156	12.26	3.65	7.24	41.89
Mean Debt per Capita[d]	156	1229.73	626.75	95.63	3975.50
Services' Characteristics[e]					
Mean Resident Sensitivity	156	0.064	0.486	-0.409	0.712
Mean Service Specificity	156	-0.145	0.474	-0.849	0.356

[a]: mean values (2006-2013). [b]: in thousands of inhabitants; [c]: in hundreds of inhabitants per square kilometer; [d] in thousands of Euros per inhabitant. [e]: average value of Resident Sentivity (resp. Service Specifity) among the services provided at the city level (see Appendix A in Section 2.6.1).

Table 2.2: Descriptive statistics on the service dataset

Variable	N	Mean	Std. Dev.	Min	Max
Dependent variable					
In-house provision of the public service (in 2015)	612	0.62	0.49	0	1
Ideology Variables					
Political variables (municipal elections)					
Number of left-wing mayors since 1989	612	2.25	1.93	0	5
Left-wing mayors since 1989	612	0.20	0.40	0	1
Left-wing mayors since 1995	612	0.22	0.41	0	1
Left-wing mayors since 2001	612	0.25	0.44	0	1
Left-wing mayors since 2008	612	0.32	0.47	0	1
Left-wing mayors since 2014	612	0.33	0.47	0	1
Control Variables					
Cities' Characteristics[a]					
Mean Population[b]	612	100.54	227.49	227.49	227.49
Mean Density[c]	612	43.13	48.21	48.21	48.21
Mean Unemployment	612	9.33	3.60	3.60	3.60
Mean Income Per Capita[d]	612	12.40	3.87	3.87	3.87
Mean Debt per Capita[d]	612	1254.57	623.35	623.35	623.35
Services' Characteristics[e]					
Resident Sensitivity	612	0.55	0.50	0	1
Service Specificity	612	0.38	0.49	0	1

[a]: mean values (2006-2013). [b]: in thousands of inhabitants; [c]: in hundreds of inhabitants per square kilometer; [d] in thousands of Euros per inhabitant. [e]: Dummies indicating whether Resident Sentivity (resp. Service Specifity) is high (above 0) or low (below 0).

Ideology variables

Different categories of independent variables are created. In order to assess the past and present ideology of cities' governments, we gathered data from the Center for Socio-Political Data (CDSP) for the five last municipal elections, which took place in 1989, 1995, 2001, 2008 and 2014.[15] In French municipalities of more than 1,000 inhabitants, municipal councils are elected through two-rounds elections. The final winner of the election is endowed with half of the council's seats. The remaining seats are distributed among candidates who reached the second round (including the winner).[16] This voting system insures the mayor a clear majority

[15]Recall that the IGD survey was conducted after the elections of 2014.

[16]Additional information about the French electoral system: (i) to pass the first round, a party must obtain at least 10% of votes; (ii) a candidate who obtains more than 10% of votes does not have to participate to the second round; (iii) a candidate must receive more than 5% of the votes in the second round to obtain seats.

within the municipal council; and the political affiliation of the mayor is thus a good proxy for the ideology of the local government. The first variable we consider, $Nb\_leftwing\_mayors_i$, counts the number of left-wing mayors for each city between 1989 and 2014 (this variable varies from 0 to 5). The left-hand chart of Figure 2.2 displays the distribution of this variable, and shows that 32 municipalities have always been governed by the left since 1989 ($Nb\_leftwing\_mayors_i = 5$), while 42 cities have never had a left-wing mayor at office over the past 26 years ($Nb\_leftwing\_mayors_i = 0$). However, this first measure of the history of ideology may not be accurate enough. The impact of one right-wing mayor at office on today's proportion of in-house provision may not be the same whether this right-wing mayor was at office in 1989, or in 2014. Indeed, contracts concluded in the eighties are likely to be expired today, and newly elected left-wing mayors could, to some extent, go back to public provision. We thus construct a set of variables in order to account for the "longevity" of the left, and consider dummies which equal one if the city has been governed by the left since 2008 ($Left\_since\_2008_i$), since 2001 ($Left\_since\_2001_i$), etc. Table 2.3 enables the reader to better picture these variables, and the right-hand chart of Figure 2.2 depicts the distribution of these dummies; for instance, 36 cities have been governed by a left-wing mayor since 1995. It is important to note that local elections are sometimes qualified as "personality-oriented". In France, 79% of the voters consider the personality of candidates as "much" or "enough" important in their choice for local elections.[17] One way to tackle this issue is to measure ideological preferences of the local electors that are independent of local stakes. This can be done by taking, for each city, the repartition of votes for the first-round of presidential elections. We collected this data from the CDSP for the five last presidential elections, which took place in 1988, 1995, 2002, 2007 and 2012. We replicate the methodology used to create the variables on mayors' political affiliation, and create variables about ideological preferences of the constituents. The first variable we consider, $Nb\_leftwing\_presid.\_majority_i$, counts the number of times the proportion of votes for left-wing presidential candidates exceeds the proportion of votes for right-wing contenders between 1988 and

[17] According to the Harris Interactive survey previously mentioned.

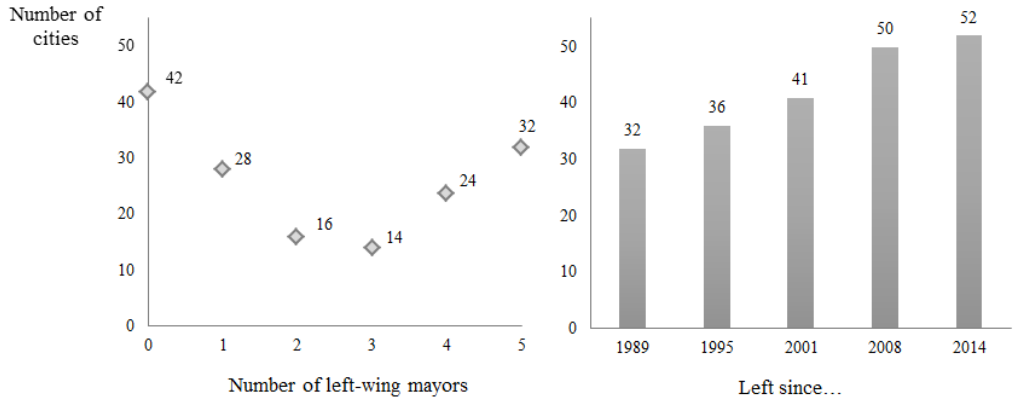
2012 in municipality i, and thus varies from 0 to 5. We then construct a set of variables in order to account for the "longevity" of left-wing preferences, and consider dummies which equal one if the city is characterized by a left-wing presidential majority since 2012 ($Leftwing\_presid.\_majority\_since\_2012_i$), since 2007 ($Leftwing\_presid.\_majority\_since\_2007_i$), etc. (see Table 2.3).

Table 2.3: Construction of the ideology variables *"Left since..."*

Municipal Elections	**1989** (26 y.a.)	**1995** (20 y.a.)	**2001** (14 y.a.)	**2008** (7 y.a.)	**2014** (1 y.a.)
Left Mayors since 1989 = 1	L	L	L	L	L
Left Mayors since 1995 = 1		L	L	L	L
Left Mayors since 2001 = 1			L	L	L
Left Mayors since 2008 = 1				L	L
Left Mayors since 2014 = 1					L
Presidential Elections	**1988** (27 y.a.)	**1995** (20 y.a.)	**2002** (13 y.a.)	**2007** (8 y.a.)	**2012** (3 y.a.)
Left Pres. Majority since 1988 = 1	L	L	L	L	L
Left Pres. Majority since 1995 = 1		L	L	L	L
Left Pres. Majority since 2002 = 1			L	L	L
Left Pres. Majority since 2007 = 1				L	L
Left Pres. Majority since 2012 = 1					L

y.a. = years ago

Figure 2.2: Distribution of ideology variables *"Number of left-wing mayors"* and *"Left since..."*



Control variables at the city level

Our empirical analysis includes a range of control variables that are usually included in studies that explore make-or-buy decisions of local governments [Bel and Fageda, 2007]. The data comes from the French National Institute of Statistics and Economic Studies (INSEE). The variables $Mean\_population_i$ (mean population of municipality i in thousands of inhabitants, between 2006 and 2013) and $Mean\_density_i$ (mean density between 2006 and 2013, in hundreds of inhabitants per square kilometer) respectively account for the size of the city and the density of population. The presence and strength of interest groups are captured by the variables $Mean\_unemployment_i$ (mean unemployment between 2006 and 2013, in percentage) and $Mean\_income_i$ (mean income per capita between 2006 and 2013, in thousands of Euros per inhabitant). While the level of income per capita can be computed at the municipal level, the level of unemployment can only be computed at the more aggregated level of the "employment area". Employment areas are defined by the French central government in order to compute statistics for unemployment at the local level. Finally, we compute $Mean\_debt_i$, the mean level of municipality i's debt between 2006 and 2013 (in thousands of Euros per capita), in order to take cities' fiscal constraints into account. Let us highlight that $Mean\_debt_i$ can suffer from endogeneity issues: the number of services kept in-house is likely to increase the level of debt in the municipality; this variable should thus be analyzed with caution in the following. Descriptive statistics for this set of control variables can be found in Table 2.1 for the aggregated dataset and in Table 2.2 for the service dataset.

Control variables at the service level

Besides information on city characteristics, it might be necessary to take service characteristics into account. According to the arguments raised in section 2.2.1, two dimensions appear to be particularly crucial for the analysis of public services management. First, we are interested in the sensitivity of residents to problems that might be encountered during service delivery. Indeed, as problems with service provision may trigger a response from city residents, public decision-makers should be more influenced by their ideology when residents are more aware of (and

more sensitive to) problems with services. Second, provider scarcity and potential lock-in effects might play an important role in our analysis. As developed previously, the loss of capabilities that can be associated to outsourcing may imply, for some services, difficulties to shift back to public provision. This can be due either to specialized expertise, information, or physical capital developed during the outsourcing relationship. To assess those dimensions, we replicate the methodology proposed by Levin and Tadelis [2010] and addressed a survey[18] to one hundred general directors of local public services, and received 21 complete answers. The survey description and analysis are provided in Appendix A (Section 2.6.1).

Respondents were asked to rank each of the seven services studied in this paper along two dimensions, namely (i) resident sensitivity and (ii) difficulty to replace contractors due to specificity and/or lack of competition.[19] As Levin and Tadelis [2010], we standardized the answers of each respondent for each question in order to have a zero mean and unit variance, then we averaged those standardized responses to obtain an average response to each question for each service. As we replicate Levin and Tadelis [2010] methodology, we are exposed to the two same concerns with the reliance of the survey data to construct our measures, namely the risk that received answers are idiosyncratic to individual city-service pairs, and the possibility of reverse causality if general directors' perceptions are influenced by predominant practices. However, we have good reasons to think that the survey provides us with reliable measures. First, the high levels of correlation between answers for each question across respondents[20] suggest that the service characteristics are commonly understood, and do not differ much across cities. The second concern is alleviated

[18] Brown and Potoski [2003] and Hefetz and Warner [2012] also use a survey to measure service characteristics. We refer to Levin and Tadelis [2010] because they shared their survey with us, and we were thus able to replicate exactly their methodology.

[19] In total, respondents were asked to judge services among six dimensions. Some of them are highly correlated (for instance, the level of lock-in effects and the need for flexibility, or the resident sensitivity, the cost-quality conflicts, and the importance of the service to create local jobs – see the correlation matrix in Appendix A, Section 2.6.1). These high levels of correlation, and the fact that we are particularly interested in resident sensitivity and lock-in effects, explain why we retain those two indicators in our analysis.

[20] The coefficients of variation are respectively equal to 27% and 32% for sensitivity and specificity answers.

by the fact that the survey was sent to highly experienced general directors of local public services. Indeed, the average experience of respondents is equal to 24 years, and people usually reach those senior management positions after long careers in the local public services sector, during which they might have worked on different types of services, geographic regions and/or city sizes.

In the empirical strategy that follows, we will use the two measures obtained with the survey in two different ways. For the estimations at the city level (aggregated dataset), $Mean\_resident\_sensitivity_i$ stands for the mean value of "resident sensitivity" on the set of services which is provided by municipality i (either through in-house or contracting out); then, for the estimations at the service level (service dataset), $Resident\_sensitivity_j$ corresponds to a dummy variable which equals 1 when resident sensitivity for the service is high (above zero), and 0 when this sensitivity is low (below zero).[21] The same reasoning applies for the variables $Mean\_service\_specificity_i$ and $Service\_specificity_j$.

The following subsection defines the empirical strategy.

2.3.3 Empirical model

In the first part of our empirical methodology, we run OLS regressions on the aggregated dataset in order to assess the impact of long-run ideology on the proportion of public services that are internally produced by municipality i ($Pct\_inhouse_i$, see equations 2.1 to 2.4). In each of those four equations, C_i is a matrix of control variables at the city level, which contains $Mean\_population_i$, $Mean\_density_i$, $Mean\_unemployment_i$, and $Mean\_debt_i$. We also include a matrix of control variables for the services provided by each municipality: S_i entails the two variables $Mean\_resident\_sensitivity_i$ and $Mean\_service\_specificity_i$.

[21] Recall that survey answers are normalized to have mean zero and unit standard deviation.

The coefficient of interest in the four specifications is β_1, which is associated with the variables measuring ideology. In equation 2.1, ideology is measured with the number of left-wing mayors at office since 1989; while equation 2.2 is estimated five times, one for each longevity variable ($Left\_since\_...$). Equations 2.3 and 2.4 are estimated using the ideology variables constructed on the repartition of votes in presidential elections. We thus take into account the fact that mayors' political affiliation might be an imperfect measure of constituents' ideological affiliations; and we aim to capture the influence of voters' political preferences in order to verify that mayors follow policies which satisfy those preferences.

$$Pct\_inhouse_i = \beta_0 + \beta 1 Nb\_leftwing\_mayors_i + \beta_2 C_i + \beta_3 S_i + \epsilon_i \tag{2.1}$$

$$Pct\_inhouse_i = \beta_0 + \beta 1 Left\_since\_...{}_i + \beta_2 C_i + \beta_3 S_i + \epsilon_i \tag{2.2}$$

$$Pct\_inhouse_i = \beta_0 + \beta 1 Nb\_leftwing\_presid.\_maj._i + \beta_2 C_i + \beta_3 S_i + \epsilon_i \tag{2.3}$$

$$Pct\_inhouse_i = \beta_0 + \beta 1 Leftwing\_presid.\_maj.\_since\_...{}_i + \beta_2 C_i + \beta_3 S_i + \epsilon_i \tag{2.4}$$

In the second part of the empirical investigation, we use the service dataset (equations 2.5 to 2.8). The dependent variable is a dummy, which indicates whether service j is provided internally ($Inhouse_{ij} = 1$) or contracted out ($Inhouse_{ij} = 0$). The independent variables of interest, which measure the ideology, as well as the set of control variables by city (C_i), are exactly the same as in the previous set of regressions. Control variables for services are first defined as dummies indicating whether the levels of resident sensitivity and service specificity are high (equations 2.5 and 2.6). In a second time, and in order to test for the robustness of our results, we introduce service fixed effects, that will absorb all the observable and non-observable factors which do not vary across each service.

$$Inhouse_{ij} = \beta_0 + \beta 1 Nb\_leftwing\_mayors_i + \beta_2 C_i + \beta_3 S_t j + \epsilon_{ij} \quad (2.5)$$

$$Inhouse_{ij} = \beta_0 + \beta 1 Left\_since..._i + \beta_2 C_i + \beta_3 S_j + \epsilon_{ij} \quad (2.6)$$

$$Inhouse_{ij} = \beta_0 + \beta 1 Nb\_leftwing\_mayors_i + \beta_2 C_i + \beta_3 S_j^{FE} + \epsilon_{ij} \quad (2.7)$$

$$Inhouse_{ij} = \beta_0 + \beta 1 Left\_since..._i + \beta_2 C_i + \beta_3 S_j^{FE} + \epsilon_{ij} \quad (2.8)$$

2.4 Results

In the following, the first subsection comments the set of results on the aggregated dataset, while the second one is devoted to the results on the service dataset. In a last subsection, we finally separate the aggregated dataset between two subsamples, restricted to short-term and long-term services.

2.4.1 Ideology and in-house provision

2.4.1.1 Mayors' ideology

Table 2.4 displays the results of regressions on the aggregated dataset (one observation per municipality). Model 1 shows the results of equation 2.1, while columns 2 to 6 present the results of the alternative versions of equation 2.1, that include dummies if left-wing mayors have been at office since 1989, 1995, 2001, 2008 and 2014. For every regression, standard errors are clustered at the regional level,[22] to correct for a potential correlation between cities of a same region, that would lead to incorrect inference.

[22]From 1956 to 2015, there were 27 regions in France. On the 1^{rst} of January, 2016, the regional division was modified, and there are today 12 regions. Our analysis is based on the ancient territorial division, and standard errors are adjusted for 26 clusters.

Table 2.4: Impact of left-wing mayors on the propensity to provide public services in-house (aggregated dataset)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
	Dependent variable: Percentage of in-house provision at the municipal level					
Ideology						
Number of Left-wing Mayors since 1989	2.826** (1.258)					
Left since 1989		12.156 (8.006)				
Left since 1995			13.152* (7.268)			
Left since 2001				10.875* (6.083)		
Left since 2008					7.071 (6.168)	
Left since 2014						6.593 (5.132)
Services' characteristics[a]						
Mean Resident Sensitivity	22.270 (14.410)	18.102 (15.367)	17.337 (15.255)	21.465 (14.462)	23.984 (14.185)	23.997 (14.188)
Mean Service Specificity	7.491 (15.607)	10.424 (15.838)	9.209 (15.632)	8.260 (15.548)	7.427 (15.870)	8.041 (15.617)
Cities' characteristics[b]						
Mean Population	-0.007 (0.005)	-0.004 (0.006)	-0.003 (0.006)	-0.008* (0.005)	-0.007* (0.004)	-0.007 (0.004)
Mean Density	-0.227*** (0.033)	-0.233*** (0.037)	-0.236*** (0.034)	-0.236*** (0.034)	-0.225*** (0.037)	-0.223*** (0.036)
Mean Unemployment	-0.625 (0.504)	-0.754 (0.465)	-0.722 (0.460)	-0.653 (0.488)	-0.640 (0.513)	-0.661 (0.509)
Mean Income per Capita	1.531*** (0.405)	1.229*** (0.328)	1.302*** (0.333)	1.254*** (0.331)	1.119*** (0.358)	1.102*** (0.319)
Mean Debt per Capita	-0.014*** (0.002)	-0.014*** (0.002)	-0.014*** (0.002)	-0.014*** (0.002)	-0.014*** (0.002)	-0.014*** (0.002)
Constant	67.939*** (13.664)	78.574*** (10.144)	77.218*** (10.561)	76.590*** (11.256)	76.894*** (11.932)	77.734*** (10.793)
N	156	156	156	156	156	156
R^2	0.184	0.181	0.186	0.180	0.171	0.170

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the regional level in parenthesis. [a]: the variable *Mean Resident Sensitivity* (respectively *Mean Service Specificity*) stands for the average value of resident sensitivity (respectively service specificity) of all the services provided at the municipal level. [b]: mean values (2006-2013). For every regression, the dependent variable is the percentage of public services provided in-house per municipality. Column 1 displays the results of the OLS regression where the independent variable of interest is the number of left-wing mayors since 1989. Column 2 (respectively Column 3, 4, 5 and 6) displays the results of the regression where the independent variable of interest is a dummy identifying whether left-wing mayors have been at office since 1989 (respectively 1995, 2001, 2008 and 2014).

Ideology

Model 1 shows that the number of left-wing mayors in one municipality significantly increases the proportion of public services provided in-house in 2015. Thus, one additional left-wing mayor over the 1989-2014 period is correlated with an increase of today's in-house provision of almost 3%. Furthermore, the coefficients associated with the variables of interest in models 3 and 4 are much larger. The larger is the one associated with the variable $Left\_since\_1995_i$: municipalities that have had left-wing mayors at office since 1995 (*i.e.* over the past 20 years) have on average 13% more of their services provided in-house compared to the other cities of the sample. This is consistent with our Proposition 1 which states that the proportion of in-house provision is significantly higher for municipalities which have been governed by left-wing officials over a long period. It is also of prime importance to note that the independent variables of interest in Models 5 and 6 are not significant: cities that have been governed by the left since 2008 or 2014 do not exhibit higher levels of internal provision in 2015. This result is essential as it reveals that studies which only take into account the results of past elections to assess the impact of mayors' ideology on make-or-buy decisions do not properly measure ideology. There indeed exists a path-dependency in choices, and newly elected mayors cannot easily go back to in-house provision if past governments have contracted out some services.

Controls

The first set of control variables relates to service characteristics. The coefficients associated to those variables are not found to be statistically different from zero. The influence of service characteristics will be further investigated using the service dataset in the following. The coefficients associated with the second set of control variables (at the city level) are in line with prior literature (see Section 2.2). Cities' population and density allow to control for the economic and complexity considerations of cities. As previously mentioned, the impact of population can either be positive or negative. On the one hand, small cities suffer from deficiencies of scale and have more to gain from contracts with the private sector: small municipalities should then provide less services with public employees. On the other hand, large

municipalities face a higher number of potential suppliers on the private market, and should then benefit from better deals with companies: large cities should be less eager to keep services in-house. With these two conflicting effects, the coefficient associated to the variable $Mean\_population_i$ is negative but not statistically different from zero in our six specifications in Table 2.4.[23] In contrast, we observe a negative and significant coefficient associated with the variable $Mean\_density_i$, as the latter generally increases the complexity of public services.

The levels of unemployment and income per capita take into account the presence of interest groups in municipalities, which are in favor (or against) contracting out of public services. Unemployment should have a positive impact on the proportion of in-house provision, as unemployed workers should have a preference for public provision, which permits to fight against municipal unemployment. However, our results do not confirm this hypothesis, as the coefficients associated with the $Mean\_unemployment_i$ variable are negative, though barely significant. Let us recall that local unemployment can only be measured at the "employment area" level in France, and our variable may not properly capture the presence of interest groups at the municipal level. The strength of "pro-business" groups is captured by the variable $Mean\_income_i$. However, as previously explained, high-income cities also have a better ability to raise taxes in order to finance public services, and can rely more on internal provision than low-income cities. This effect appears to prevail, as the coefficients associated with the income variable are positive and significant in Table 2.4. For instance, the estimates of Model 1 show that an increase of 1,000 Euros per capita is associated with a rise of 1.48% of internal provision. In general, our results do not corroborate the importance of political pressures in make-or-buy choices of large French municipalities. This result is in line with Bel and Fageda [2009] who find in their meta-analysis that the impact of interest groups is especially relevant in the early studies of the US. Let us further note that the presence of interest groups, which is also referred to as "political processes" in the literature,

[23] The small impact of the population variable can also be explained by the nature of our data, which only include large municipalities. This result follows the conclusions of Bel and Fageda [2009].

is likely to be captured by the ideology variables. As argued before, left-wing politicians may favor in-house provision because their electors prefer in-house provision. Following that reasoning, high-income citizens, who are supposed to be in favor of externalization, are more likely to vote for a right-wing mayor; while members of unions or unemployed people are more likely to vote for a left-wing candidate. This statement is of course a huge simplification of reality, but we want to insist on the fact that the presence and strength of interest groups, and the political affiliation of mayors, are in fact very difficult to disentangle. Finally, in order to take cities' fiscal stress into account, our specifications include the variable $Mean\_debt_i$. As expected, the coefficients associated with this variable are negative and significant across all Models in Table 2.4.

2.4.1.2 Political preferences of constituents and in-house provision

As previously exposed, our measure of ideology corresponds to "impure" ideology [Kalt and Zupan, 1984]. The reasoning is that politicians favor policies that please their constituents [Sundell and Lapuente, 2012]. However, the political affiliation of mayors may be an imperfect measure of voters' preferences, and in particular because municipal elections are often considered as "personality-oriented". An alternative way to measure those preferences is to consider citizens' vote to presidential elections (see Section 2.3.2).

Equations 2.3 and 2.4 use this alternative measure and look at the impact of a majority of left-wing voters in municipality i. As displayed in Table 2.5, results are perfectly consistent with those obtained in previous subsection. Indeed, Model 1 shows that the number of left-wing majorities during the first rounds of the past five presidential elections increases the proportion of public services provided in-house in 2015. Then, one additional left-wing presidential majority over the 1988-2012 period is correlated with an increase of today's in-house provision of more than 2.5%. Furthermore, the coefficients associated with the variables of interest in

models 2 and 3 are much larger. The larger is the one associated with the variable $Leftwing\_presid.\_majority\_since\_1988_i$: municipalities that have had left-wing majorities (for the first round of presidential elections) since 1988 (*i.e.* over the past 27 years) have on average nearly 24% more of their services provided in-house compared to the other cities of the sample[24]. As for the other results, all the effects associated with the set of cities' controls are perfectly stable. The coefficients associated with the variable $Mean\_Resident\_Sensitivity_i$ become slightly significant, indicating that cities which provide a set of services that are sensitive have a higher proportion of in-house provision; this result in consistent with previous findings Levin and Tadelis [2010]; Hefetz and Warner [2012].

Additionally, we run equation 2.3 by successively including the average share of voters for each party during the five last presidential elections (rather than making a dichotomous distinction between left-wing and right-wing candidates). Results provided in Table 2.16 (see Appendix C, Section 2.6.3) indicate that the percentage of in-house provision is positively and significantly correlated with the proportion of extreme-left voters, while it is negatively and significantly correlated with the proportion of right-wing constituents. Altogether, those results corroborate the fact that municipalities deeply rooted in the left side of the political spectrum have higher proportion of public services that are kept in-house.

[24]In Table 2.5, coefficients for models 2 and 3 are identical. This is due to the fact that municipalities with left wing presidential majority since 1988 and 1995 are exactly the same.

Table 2.5: Impact of left-wing majorities at presidential elections on the propensity to provide public services in-house (aggregated dataset)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
	Dependent variable: Percentage of in-house provision at the municipal level					
Ideology						
Number of Left-wing Presidential Majorities since 1988	2.572*					
	(1.407)					
Lef-wing Pres. Maj. since 1988		23.724***				
		(4.287)				
Lef-wing Pres. Maj. since 1995			23.724***			
			(4.287)			
Lef-wing Pres. Maj. since 2002				16.753		
				(10.045)		
Lef-wing Pres. Maj. since 2007					13.858	
					(9.897)	
Lef-wing Pres. Maj. since 2012						-1.897
						(6.060)
Services' characteristics[a]						
Mean Resident Sensitivity	23.418	24.793*	24.793*	25.212*	25.415*	25.649*
	(13.875)	(14.451)	(14.451)	(14.537)	(14.617)	(14.625)
Mean Service Specificity	7.905	8.965	8.965	8.522	10.558	10.052
	(15.837)	(15.092)	(15.092)	(15.320)	(15.221)	(15.101)
Cities' characteristics[b]						
Mean Population	-0.004	-0.002	-0.002	-0.002	-0.003	-0.005
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)
Mean Density	-0.241***	-0.253***	-0.253***	-0.238***	-0.232***	-0.206***
	(0.039)	(0.036)	(0.036)	(0.042)	(0.042)	(0.041)
Mean Unemployment	-0.744	-0.677	-0.677	-0.692	-0.879	-0.669
	(0.530)	(0.489)	(0.489)	(0.465)	(0.570)	(0.532)
Mean Income per Capita	1.371***	1.245***	1.245***	1.139***	1.059***	0.729
	(0.418)	(0.278)	(0.278)	(0.358)	(0.343)	(0.468)
Mean Debt per Capita	-0.014***	-0.016***	-0.016***	-0.016***	-0.015***	-0.015***
	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Constant	75.792***	83.496***	83.496***	82.925***	84.119***	85.647***
	(12.354)	(11.225)	(11.225)	(11.017)	(11.595)	(13.137)
N	156	156	156	156	156	156
R^2	0.17	0.18	0.18	0.18	0.17	0.16

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the regional level in parenthesis. [a]: the variable *Mean Resident Sensitivity* (respectively *Mean Service Specificity*) stands for the average value of resident sensitivity (respectively service specificity) of all the services provided at the municipal level. [b]: mean values (2006-2013). For every regression, the dependent variable is the percentage of public services provided in-house per municipality. Column 1 displays the results of the OLS regression where the independent variable of interest is the number of left-wing presidential majorities since 1988. Column 2 (respectively Column 3, 4, 5 and 6) displays the results of the regression where the independent variable of interest is a dummy identifying whether there has been a left-wing presidential majority since 1988 (respectively 1995, 2002, 2007 and 2012).

2.4.2 Ideology and resident sensitivity to local public services

Previous results showed that long-term ideology matters; and we obtained first findings on resident sensitivity that are consistent with previous literature. In this

subsection, we use the dataset at the service level in order to test for Proposition 2, which states that ideology should impact more when citizen interest for the service delivery is higher.

Table 2.6 provides the marginal effects of logit estimations outputs for equations 2.5 and 2.6, where the dependent variable ($Inhouse_{ij}$) is a dummy which indicates whether service j is provided in-house by municipality i. For every regression, standard errors are now clustered at the municipal level. Model 1 investigates the influence of the number of left-wing mayors between 1989 and 2014, and Models 2 to 6 focus on the longevity of left-wing mayors at office. The results are perfectly consistent with the ones derived in previous subsection: the number of left-wing mayors is positively and significantly correlated with the likelihood to provide a service in-house. Moreover, the longevity of left-wing mayors is only statistically (and positively) correlated with internal provision when left-wing mayors have been at office since 1989, 1995 or 2001, while we find no impact of the variables $Left\_since\_2008_{ij}$ and $Left\_since\_2014_{ij}$. Recall that the average probability for one public service to be provided in-house is of 62% (see Table 2.2). Table 2.6 indicates that the estimated probability change for the variable $Left\_since\_1988_{ij}$ is equal to 15.9. In other words, for an otherwise average service in an average city (meaning all the other variables being at their mean values), a left-wing mayor since 1988 increases the probability for one public service to be provided in-house by 25.6% (*i.e.* this probability changes from 62% to 77.9%). The same reasoning can be applied to analyze the influence of $Resident\_Sensitivity_{ij}$ and $Service\_Specificity_{ij}$; a one standard deviation increase in resident sensitivity is associated with an increase of 19.4% in the probability for one public service to be provided in-house, and a one standard deviation increase in service specificity is associated with a decrease of this same probability of 19.7%. This somewhat surprising finding is nonetheless consistent with the potential existence of a non-linear effect of asset specificity, that is the fact that very high levels of asset specificity would lead to more outsourcing, because private operators may have more abilities to manage costly and

complex services (Brown and Potoski [2003]).[25] Finally, the coefficients associated with cities' controls are highly similar with the previous results.

Table 2.6: Impact of left-wing mayors and service characteristics on the likelihood to provide public services in-house (service dataset) - Marginal Effects

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit
	Dependent variable: Probability of in-house provision at the service level					
Ideology						
Number of Left-wing Mayors since 1989	0.034**					
	(0.014)					
Left since 1989		0.159**				
		(0.071)				
Left since 1995			0.155**			
			(0.068)			
Left since 2001				0.130**		
				(0.064)		
Left since 2008					0.071	
					(0.058)	
Left since 2014						0.064
						(0.058)
Services' Characteristics[a]						
Resident Sensitivity	0.108**	0.104**	0.104**	0.107**	0.108**	0.108**
	(0.045)	(0.045)	(0.045)	(0.045)	(0.044)	(0.044)
Service Specificity	-0.075*	-0.073*	-0.075*	-0.076*	-0.075*	-0.075*
	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)	(0.041)
Cities' characteristics[b]						
Mean Population	-0.000	-0.000	-0.000	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mean Density	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Mean Unemployment	-0.006	-0.007	-0.006	-0.006	-0.006	-0.006
	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)
Mean Income per Capita	0.022**	0.018**	0.018**	0.017**	0.015*	0.015*
	(0.010)	(0.009)	(0.009)	(0.009)	(0.008)	(0.008)
Mean Debt per Capita	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	612	612	612	612	612	612
Pseudo-R^2	0.06	0.06	0.06	0.06	0.05	0.05

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level in parenthesis. The reported coefficients correspond to the marginal effects at mean (MEM). [a]: the variable *Resident Sensitivity* is a dummy variable which equals 1 when resident sensitivity is positive, and 0 when resident sensitivity is negative. The same applies for the variable *Service Specificity*. [b]: mean values (2006-2013). For every regression, the dependent variable is a dummy which equals one when the service is provided in-house. Column 1 displays the results of the Logit regression where the independent variable of interest is the number of left-wing mayors since 1989. Column 2 (respectively Column 3, 4, 5 and 6) displays the results of the regression where the independent variable of interest is a dummy identifying whether left-wing mayors have been at office since 1989 (respectively 1995, 2001, 2008 and 2014).

[25] This effect service specificity will also be discussed in next subsection.

Table 2.7 gives more insights on the links between service characteristics and in-house provision. Indeed, we run equation 2.5 on different subsamples. In Models 1 and 2, we successively look at the likelihood to provide each service in-house on a sample of services characterized by low resident sensitivity ($Resident\_Sensitivity_j < 0$)[26] and on a sample of high resident sensitivity ($Resident\_Sensitivity_j > 0$).[27] The ideology variable, which stands for the number of left-wing mayors elected among the five last municipal ballots, is only significant for highly sensitive services. More precisely, marginal effects indicate that one additional left-wing mayor over the 1989-2014 period increases the probability for a *sensitive* service to be provided in-house by 6.8%. On the contrary, there is no impact of an additional left mandate on the probability for a *non sensitive* service to be provided in-house. This finding provides support to Proposition 2.

Moreover and interestingly, the comparison between Model 3 (subsample of services with low specificity, $Service\_Specificity_j < 0$)[28] and Model 4 (subsample of services with high specificity, $Service\_Specificity_j > 0$)[29] reveals that ideology matters only when specificity is low. In such a case, marginal effects suggest that one additional left mandate over the 1989-2014 increases the probability for a *non specific* service to be provided in-house by 7.6%; while we find no impact of ideology on *specific* services. A reasonable interpretation is that when asset specificity is low, municipalities can opt easily for the mode of provision they want, notably based on their ideological preferences. On the contrary, when asset specificity is high, their choice is more constrained, and as noted by Brown and Potoski [2003] cities might not have the capabilities needed to management highly specific services. It is worth noting that those results are perfectly similar if we replace the measure of mayors' ideology by the measure of constituents' ideology (see Table 2.17 in Appendix C).

[26]The services that display low levels of resident sensitivity are street lightening, water treatment, and car parks (see Table 3.1 in Appendix A).

[27]Water distribution, collective catering, waste collection and childhood care have high levels of citizen sensitivity (see Table 3.1 in Appendix A).

[28]Street lightening, car parks, and collective catering are characterized by low levels of specificity.

[29]Water treatment, water distribution, waste collection and childhood care display high levels of specificity.

Table 2.7: Impact of left-wing mayors on the propensity to provide public services in-house depending on the levels of Resident Sensitivity and Service Specificity (service dataset) - Marginal Effects

	(1) Logit	(2) Logit	(3) Logit	(4) Logit
	Dependent variable: Probability of in-house provision at the service level			
	Resident Sensitivity		*Service Specificity*	
	Low	High	Low	High
Ideology				
Number of Left-wing	0.026	0.041**	0.047***	0.016
Mayors since 1989	(0.017)	(0.018)	(0.016)	(0.018)
Cities' characteristics[a]				
Mean Population	-0.000	-0.000	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Mean Density	-0.001*	-0.003***	-0.002***	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Mean Unemployment	0.016	0.026*	0.032***	0.010
	(0.012)	(0.015)	(0.012)	(0.011)
Mean Income per Capita	-0.009	-0.002	-0.003	-0.009
	(0.006)	(0.006)	(0.006)	(0.006)
Mean Debt per Capita	-0.000***	-0.000**	-0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
N	274	338	381	231
Pseudo-R^2	0.03	0.08	0.08	0.03

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level in parenthesis. The reported coefficients correspond to the marginal effects at mean (MEM). [a]: mean values (2006-2013). For every regression, the dependent variable is a dummy which equals one when the service is provided in-house. Columns 1 and 2 compare situations of low and high Resident Sensitivity, and the independent variable of interest is the number of left-wing mayors since 1989. Columns 4 and 5 compare situations of low and high Service Specificity, and the independent variable of interest is the number of left-wing mayors since 1989.

Finally, Table 2.8 provides the estimations results of equations 2.7 and 2.8 where we include service fixed effects. Coefficients associated with the six services in Table 2.8 have to be compared to parking lots services. We chose parking lots as the reference service because of its "intermediary situation". Indeed, this service is very close to the mean value (0) for both resident sensitivity and service specificity (see Table 3.1 in Appendix C) and shows a perfect balance between in-house provision (50%) and contracting out (50%) (see Figure 2.1). Three services are more contracted out than parking lots (water collection, water treatment and waste collection), while three services are contracted out less often (childhood care, collective catering and street lightning). The coefficients associated with service fixed effects in Table 2.8 validate these descriptive statistics as childhood care, collective catering and street

lightning are significantly more likely to be internally produced. If we compare the characteristics of those three services to parking lots, it appears that two services are more sensitive than parking lots (childhood care and collective catering), and only one is more specific (childhood care). This observation suggests that resident sensitivity is a more important driver of the decision to keep public services in-house than service specificity. Most importantly, our results about ideology are perfectly similar to those obtained in all previous estimations.

Table 2.8: Impact of left-wing mayors and service fixed effects on the likelihood to provide public services in-house (service dataset) - Marginal Effects

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit
	Dependent variable: Probability of in-house provision at the service level					
Ideology						
Number of Left-wing Mayors since 1989	0.035**					
	(0.014)					
Left since 1989		0.154**				
		(0.075)				
Left since 1995			0.152**			
			(0.072)			
Left since 2001				0.128*		
				(0.067)		
Left since 2008					0.073	
					(0.060)	
Left since 2014						0.063
						(0.061)
Services Fixed Effects[a]						
Street lightning	0.234***	0.236***	0.236***	0.234***	0.234***	0.234***
	(0.065)	(0.065)	(0.065)	(0.065)	(0.065)	(0.065)
Collective catering	0.180***	0.179***	0.176***	0.178***	0.181***	0.181***
	(0.055)	(0.055)	(0.055)	(0.054)	(0.054)	(0.054)
Childhood care	0.248***	0.245***	0.244***	0.246***	0.248***	0.248***
	(0.059)	(0.059)	(0.059)	(0.059)	(0.059)	(0.058)
Waste collection	0.087	0.082	0.077	0.082	0.091	0.092
	(0.118)	(0.119)	(0.121)	(0.119)	(0.116)	(0.116)
Water distribution	-0.071	-0.065	-0.066	-0.067	-0.073	-0.072
	(0.080)	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)
Water treatment	-0.075	-0.070	-0.077	-0.081	-0.076	-0.073
	(0.105)	(0.106)	(0.105)	(0.105)	(0.105)	(0.105)
Cities' characteristics[b]	See Table 2.18 in Appendix C					
N	612	612	612	612	612	612
Pseudo-R^2	0.09	0.1	0.09	0.09	0.09	0.09

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level in parenthesis. The reported coefficients correspond to the marginal effects at mean (MEM). [a]: the six services are compared to the parking lots service; the latter was selected for its intermediate level of outsourcing ratio (50%). [b]: mean values (2006-2013). For every regression, the dependent variable is a dummy which equals one when the service is provided in-house. Column 1 displays the results of the Logit regression where the independent variable of interest is the number of left-wing mayors since 1989. Column 2 (respectively Column 3, 4, 5 and 6) displays the results of the regression where the independent variable of interest is a dummy identifying whether left-wing mayors have been at office since 1989 (respectively 1995, 2001, 2008 and 2014).

2.4.3 Results on the subsamples restricted to long-term and short-term services

Our results so far highlight that ideology variables should be computed on a long period, and that current mayors' ideology does not explain today's proportion of public services produced in-house. Those results thus show that make-or-buy decisions of local governments are path-dependent. We find that ideology plays a more important role for services that are characterized by high levels of resident sensitivity; and our results suggest that ideology is more important for services with low levels of specificity (see Table 2.7). This last section offers a last categorization of the services: we distinguish between services that are characterized by long-term contracts on the market (hereafter long-term services) and services for which short-term contracts are concluded (short-term services).

Let us note that the concept of service specificity might be correlated with the length of contracts concluded when municipalities decide to externalize the service. Indeed, specific services (in our dataset, water treatment, water distribution, waste collection and childhood care) can be more complex, require higher levels of investments, and thus result in longer contracts on the market, than less specific services. However, Table 2.9 shows that specific services are not necessarily the ones that induce long-term contracts.[30] This last distinction thus has an interest, because it does not capture exactly the same notion as service specificity.

[30] We define long-term services as the ones for which contracts last on average more than ten years.

Table 2.9: Average length of contracts

Sample	Service	Average length	Reference
Long-term contracts	Parking lots	16.6 years[a] or 30.6 years[b]	Beuve et al. [2014]
	Street lighting	17 years	Chong et al. [2013]
	Water distribution	12 years	Desrieux et al. [2013]
	Water treatment	16.8 years	Chong et al. [2015]
Short-term contracts	Childhood care	5 to 7 years	Johannes [2013]
	Collective catering	5 years[a] or 6 to 10 years[b]	MINEFI [2005]
	Waste collection	5.4 years	Beuve et al. [2013]

[a]: for public service delegation contracts. [b]: for concession contracts.

As argued in Section 2.2, the time dependency of make-or-buy choices should be stronger for long-term services. This does not mean that ideology should play a more important role for those services, but rather that it is more important to measure ideology on the long-run for them. First, long-term contracts by definition expire less frequently, and thus allow municipalities to switch the governance mode less often. Second, the loss of competences of the municipality should be higher with these long-term services, as operators have more time to develop specific investments and/or specific knowledge that can impede backward integration.

For the two subsamples, the dependent variables are computed in the exact same way than the one on the aggregated dataset, and are defined as the proportion of long-term (respectively short-term) services that the municipality provides in-house. Descriptive statistics for the datasets of short-term and long-term services are provided in Table 2.19, in Appendix C. In order to put to the test our third and last proposition, we also created a new set of independent variables (see Table 2.10). These new variables are dummies, which identify whether a left-wing mayor was at office for one specific mandate, and they allow to further assess the importance of long-run ideology. Results are displayed in Tables 2.11 and 2.12. In each table, the first four columns show the results of regressions where the independent variables of interest are the longevity of the left, and the five last columns include dummies, identifying whether a left-wing mayor was at office on a specific mandate.[31]

[31] As in previous models, we consider OLS regressions for which standard errors are clustered

Table 2.10: Construction of the ideology variables *"Left in..."*

Municipal Elections	**1989** (26 y.a.)	**1995** (20 y.a.)	**2001** (14 y.a.)	**2008** (7 y.a.)	**2014** (1 y.a.)
Left Mayor in 1989 = 1	L				
Left Mayor in 1995 = 1		L			
Left Mayor in 2001 = 1			L		
Left Mayor in 2008 = 1				L	
Left Mayor in 2014 = 1					L

y.a. = years ago

As expected, the longevity variables are associated with bigger and more significant coefficients for long term contracts (see Models 1 to 4 in Table 2.11), than the ones estimated on the aggregated dataset (*cf.* Table 2.4). For instance, municipalities which have been governed by the left since 1995 produce, on average, 17.25% more of their long-term services in-house. In line with our predictions, those coefficients are also bigger than those estimated on the short-term contracts sample, which are not statistically different from zero (*cf.* Table 2.12). These results provide support to Proposition 3, by showing that past ideology of municipalities play a different role, depending on the length of contracts they induce when they are externalized. One could suppose that current mayors' ideology should explain todays' proportion of short-term services internally produced. However, the political affiliation of the mayor at office in 2014 does not significantly impact the dependent variable in Model 9 of Table 2.12, and the coefficient associated with the political affiliation in 2008 (*cf.* Model 8) is barely significant. However, we observe that cities which were governed by the left in 1995 and in 2001 do exhibit higher proportions of in-house provision (see Models 6 and 7). This suggests that contracts were concluded by right-wing mayors in those years, and that following left-wing governments did not go back to in-house provision. Altogether, our results indicate that there exists an inertia in the mode of provision of public services, even for short-term ones, which suggests that backward integration is not easy.

at the regional level.

Table 2.11: Impact of left-wing mayors on the proportion of long-term services provided in-house (aggregated dataset of long-term contracts)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
	Dependent variable: proportion of long-term services provided in-house.								
Ideology									
Left since 1989	17.655**								
	(7.778)								
Left since 1995		17.246**							
		(7.658)							
Left since 2001			14.291**						
			(6.449)						
Left since 2008				8.785					
				(7.039)					
Left in 1989					7.547				
					(5.767)				
Left in 1995						5.226			
						(7.972)			
Left in 2001							9.024		
							(6.253)		
Left in 2008								3.048	
								(6.394)	
Left in 2014									8.740
									(5.835)
Cities' characteristics[a]									
Mean Population	0.016*	0.016**	0.010	0.011	0.014**	0.014*	0.011	0.012	0.011
	(0.008)	(0.008)	(0.008)	(0.007)	(0.006)	(0.007)	(0.008)	(0.007)	(0.008)
Mean Density	-0.164***	-0.169***	-0.166***	-0.146***	-0.128***	-0.133***	-0.147***	-0.133***	-0.145***
	(0.052)	(0.051)	(0.055)	(0.050)	(0.043)	(0.044)	(0.048)	(0.045)	(0.049)
Mean Unemployment	-1.186*	-1.121*	-1.013	-0.967	-1.098	-1.030	-0.907	-0.933	-0.990
	(0.614)	(0.623)	(0.658)	(0.713)	(0.720)	(0.745)	(0.669)	(0.720)	(0.703)
Mean Income per Capita	1.361**	1.424**	1.381**	1.206**	1.257*	1.109**	1.327**	1.052*	1.209**
	(0.553)	(0.527)	(0.559)	(0.544)	(0.618)	(0.520)	(0.524)	(0.524)	(0.528)
Mean Debt per Capita	-0.015***	-0.016***	-0.016***	-0.015***	-0.015***	-0.016***	-0.016***	-0.016***	-0.015***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Constant	72.358***	71.701***	71.978***	72.901***	70.741***	74.629***	70.825***	75.338***	73.156***
	(12.250)	(12.379)	(12.948)	(13.677)	(15.789)	(14.827)	(13.234)	(15.076)	(12.940)
N	143	143	143	143	143	143	143	143	143
R^2	0.131	0.134	0.126	0.112	0.109	0.105	0.114	0.102	0.112

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the regional level in parenthesis. [a]: mean values (2006-2013). The dataset is restricted to long-term contracts (mean duration higher than 10 years: parking lots, street lighting, water distribution, and water treatment). For every regression, the dependent variable is the proportion of long-term services provided with public employees. Column 1 (respectively Column 2, 3, and 4) presents the results of the OLS regression where the independent variable of interest is a dummy which equals one if the city has been governed by left-wing mayors since 1989 (respectively 1995, 2001 and 2008). Columns 5 to 9 display the results of the OLS regressions where the independent variables are dummies identifying whether the city was governed by a left-wing mayor in 1989, 1995, 2001, 2008 and 2014.

Table 2.12: Impact of left-wing mayors on the proportion of short-term services provided in-house (aggregated dataset of short-term contracts)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) OLS
	Dependent variable: Proportion of short-term services provided in-house								
Ideology									
Left since 1989	11.317								
	(9.953)								
Left since 1995		12.973							
		(8.561)							
Left since 2001			12.864						
			(8.411)						
Left since 2008				9.723					
				(7.971)					
Left in 1989					7.912				
					(6.760)				
Left in 1995						18.938**			
						(7.040)			
Left in 2001							20.793***		
							(7.108)		
Left in 2008								12.549*	
								(6.816)	
Left in 2014									8.239
									(7.359)
Cities' characteristics[a]									
Mean Population	-0.021**	-0.020**	-0.026***	-0.025***	-0.021**	-0.019**	-0.027***	-0.026***	-0.024***
	(0.009)	(0.009)	(0.008)	(0.007)	(0.009)	(0.009)	(0.008)	(0.009)	(0.007)
Mean Density	-0.304***	-0.310***	-0.310***	-0.298***	-0.283***	-0.298***	-0.314***	-0.294***	-0.294***
	(0.053)	(0.046)	(0.044)	(0.051)	(0.050)	(0.041)	(0.038)	(0.047)	(0.052)
Mean Unemployment	-0.155	-0.117	-0.052	-0.044	-0.222	-0.151	0.226	0.160	-0.079
	(0.862)	(0.851)	(0.833)	(0.793)	(0.818)	(0.657)	(0.832)	(0.782)	(0.803)
Mean Income per Capita	1.534***	1.634***	1.628***	1.520***	1.576***	2.052***	2.185***	1.818***	1.464***
	(0.409)	(0.380)	(0.359)	(0.345)	(0.451)	(0.438)	(0.424)	(0.482)	(0.317)
Mean Debt per Capita	-0.011***	-0.012***	-0.012***	-0.011***	-0.011***	-0.012***	-0.012***	-0.012***	-0.012***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	78.612***	76.994***	76.731***	77.437***	76.332***	65.578***	62.995***	68.753***	78.993***
	(13.835)	(13.433)	(13.063)	(12.832)	(15.188)	(14.724)	(15.056)	(15.497)	(12.519)
N	144	144	144	144	144	144	144	144	144
R^2	0.153	0.158	0.159	0.152	0.149	0.187	0.195	0.160	0.150

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the regional level in parenthesis. [a]: mean values (2006-2013). The dataset is restricted to short-term contracts (childhood care, collective catering, and waste collection). The dataset is restricted to short-term contracts (mean duration lower than 10 years: childhood care, collective catering, waste collection and water distribution). For every regression, the dependent variable is the proportion of short-term services provided with public employees. Column 1 (respectively Column 2, 3, and 4) presents the results of the OLS regression where the independent variable of interest is a dummy which equals one if the city has been governed by left-wing mayors since 1989 (respectively 1995, 2001 and 2008). Columns 5 to 9 display the results of the OLS regressions where the independent variables are dummies identifying whether the city was governed by a left-wing mayor in 1989, 1995, 2001, 2008 and 2014.

2.5 Conclusion

In their study of local government restructuring in 2001, Warner and Hebdon [2001] conclude about the absence of ideological influence that "*a major finding is that local governments are more concerned with practical issues of service quality, and less with ideology, politics, and unionization. Pragmatism wins out over politics as local governments give a keen eye to market structure, service quality, and efficiency concerns*", a conclusion that was also reached by many empirical studies (see Bel and Fageda [2007]). Our analysis clearly departs from this conclusion. By defining a better measure of ideology, while at the same time taking dimensions such as resident sensitivity and service specificity into account, our results contribute to restore the relevance of ideology as an important determinant in municipalities make-or-buy choices. Indeed, this paper demonstrates that ideological attitudes play a major role in the analysis of local governments' contracting out decisions as soon as mayors' ideology is properly measured, that is over long time periods. We claim that the moderate explanatory power of ideological motives in past empirical research should be considered with caution, and should not necessarily be interpreted as a shift from ideology to pragmatism. Our results, and especially our methodology, allow to better understand why and when ideology matters in choices made by local governments.

Once demonstrated that left-wing mayors have a significant ideological preference for in-house provision, and even more for services characterized by high levels of resident sensitivity, our estimates allow to investigate the issue of the loss of skills due to previous outsourcing decisions. Hence, the presence of at least one right-wing mayor in the past is sufficient to significantly decrease the level of in-house provision today. Conversely, having left-wing mayors at office in recent mandates does not necessarily imply higher levels of in-house provision today. Such findings suggest that it is easier to move from public to private provision than the reverse.

Our results are important for at least three reasons. First, they indicate that the estimates of previous studies, which do not properly measure mayors' ideology, can be biased. In that sense, it would be interesting to apply our methodology to other settings, in order to further assess the influence of ideology in various institutional settings, but also to confirm the influence of the other usually tested variables. Second, our results can contribute to explain why the externalization of public services is not steadily associated with cost decreases or performance enhancements. Because make-or-buy choices are not systematically motivated by pragmatism, the benefits of outsourcing can be limited. Finally, our study highlights the crucial issue of path-dependency in make-or-buy decisions of successive administrations. This aspect is all the more important that local public services represent huge amounts of public money, as exposed in the Introduction. Since one externalization decision made at time t impacts the management of the public service over a long period of time (at least for the duration of the contract, and probably more because of the loss of competencies externalization implies), it is crucial to take careful decisions regarding the mode of provision of each public service.

Our study suggests avenues for future research. As above mentioned, our methodology could be replicated in other institutional settings, and/or for the study of other public services, in order to better understand the importance of ideology at the local level. Moreover, panel data indicating when delegation contracts expire could be useful, because this data would enable a finer study of the mechanisms we describe, and would in particular allow to better distinguish between the issue of the length of contracts and the issue of the loss of competencies. Finally, further investigations of the links between contracting out decisions and performance increases would be highly valuable. They would for instance show whether externalizations motivated by ideology are indeed less likely to lead to cost decreases than externalizations based on pragmatism.

2.6 Appendix

2.6.1 Appendix A. Survey to the General Directors of Local Public Services

In order to obtain measures of services' characteristics, we replicate the exact methodology and survey used by Levin and Tadelis [2010]. We sent the survey to 100 general directors of local public services, and asked them to assess a list of services along several dimensions. A list of the services analyzed in this paper follows each question below. Respondents were asked to rank each service on a scale from 1 to 5. A complete copy of the survey is available upon request to the authors. We below re-produce the questions that we rely upon in this paper.

Respondents' characteristics and rate of response

According to the French National Directory of Professional Certification, the position of General Director of Local Public Services is defined as follows: "*To contribute to the definition of community orientations and to the development of a public action project shared by all stakeholders, under the responsibility of the political team. To manage the services and to pilot the territorial organization in coherence with pre-defined guidelines*". As argued in the paper, those positions are generally occupied by experienced seniors who developed detailed knowledge about local public services and their management during their careers. It is confirmed by the very high average experience of respondents (23.9 years, with a standard deviation of 10.8 years). For those reasons, we are highly confident about the relevance of their judgments. Out of the 100 surveys, we received 21 complete answers, which corresponds to a satisfying rate of response (21%).

Questions

Question 1: Measuring and Monitoring Service Quality

To evaluate performance, it is important to measure and monitor the quality of the service provided. For each service listed below, imagine you were considering contracting out the service. Assess how easy or difficult it would be to measure and monitor the quality of service provision.

1 : Easy / 2 : Relatively Easy / 3 : Average / 4 : Relatively Hard / 5 : Hard

Question 2: Need for Flexibility

For some services there is significant uncertainty about precisely what (or when) things need to be done. Other services are more predictable, making it easier to specify in advance what needs to be done. For services that are less predictable there is a greater need for flexibility and adaptive guidance. Please rank the need for flexibility and adaptive guidance.

1 : No Need / 2 : Little Need / 3 : Moderate Need / 4 : Stronger Need / 5 : Strong Need

Question 3: Provider Scarcity or Lock-in

For some services it may be hard to find qualified providers or to switch providers once and initial provider is found. This could be due either to specialized expertise, specialized or expensive physical capital, or the lack of a closely related private sector market. Please assess the ease of finding or switching outside providers.

1 : Easy / 2 : Relatively Easy / 3 : Average / 4 : Relatively Hard / 5 : Hard

Question 4: Cost/Quality Conflicts

There is always the potential for conflict between the desire to save on cost and the desire to provide a higher quality of service. Please assess the severity of conflict between controlling costs and providing quality. (We are not asking which services are relatively expensive, but rather for each given service, the potential for conflict between cost control and quality provision).

1 : No Conflict / 2 : Little Conflict / 3 : Moderate Conflict / 4 : Stronger Conflict / 5 : Strong Conflict

Question 5: Resident Sensitivity and Response

Problems with service provision may trigger a response from city residents. Residents are more aware of, and more sensitive to problems with some services as compared to others. Please assess the level of resident sensitivity to problems that might be encountered in the provision of that service.

1 : No Sensitivity / 2 : Little Sensitivity / 3 : Moderate Sensitivity / 4 : Stronger Sensitivity / 5 : Strong Sensitivity

Question 6: Provision of jobs for the community

The provision of city services can provide important jobs for the local community. The actual provider of the service, whether it be the city, a neighboring government, or a private provider, has a degree of control over who gets these jobs. Please assess the importance to the local community of the jobs created in the provision of this service.

1 : Not Important / 2 : Little Important / 3 : Moderate Important / 4 : Higher Important / 5 : High Important

Analysis of the survey data

As described in the text, responses by each manager to each question were standardized to have mean zero and standard deviation one. We then averaged those standardized responses to obtain an average response to each question for each service. Summary statistics are provided in Table 3.1. As noticed in the correlation matrix (see Table 2.14), services' indicators obtained through the survey are highly correlated. For instance, resident sensitivity is strongly correlated with difficulty to measure quality (0.658) and even more strongly correlated with the need for flexibility (0.897), the level of conflicts between cost and quality (0.904) and the importance of the service in terms of job provision for the community (0.905). According to those levels of correlation, collinearity issues prevent us from including the six indicators in our estimations and we only keep the two variables *Resident Sensitivity* and *Specificity* in the empirical strategy of the paper.

Table 2.13: Summary Statistics of Survey Data on Services

Service	Quality	Flexibility	Specificity	Cost-Quality	Resident Sensitivity	Jobs
Street Lightning	-0.393	-0.366	-0.700	-0.871	-0.409	-0.705
	(3/7)	(2/7)	(2/7)	(1/7)	(1/7)	(2/7)
Water Treatment	0.136	-0.345	0.302	-0.033	-0.251	-0.043
	(5/7)	(3/7)	(6/7)	(3/7)	(2/7)	(3/7)
Car Parks	-0.408	-0.382	-0.535	-0.642	-0.042	-0.707
	(2/7)	(1/7)	(3/7)	(2/7)	(3/7)	(1/7)
Water Distribution	0.160	-0.172	0.356	-0.107	0.524	-0.043
	(6/7)	(4/7)	(7/7)	(4/7)	(4/7)	(4/7)
Collective Catering	-0.123	0.229	-0.849	0.639	0.530	0.638
	(4/7)	(6/7)	(1/7)	(7/7)	(5/7)	(6/7)
Waste Collection	-0.634	0.109	0.156	0.115	0.681	0.538
	(1/7)	(5/7)	(5/7)	(5/7)	(6/7)	(5/7)
Childhood Care	0.254	0.439	0.075	0.607	0.712	0.738
	(7/7)	(7/7)	(4/7)	(6/7)	(7/7)	(7/7)

Services are ranked by the level of "Resident Sensitivity". The ranking of each service depending on survey indicators are provided between parenthesis.

Table 2.14: Correlation Matrix of Services' Indicators

	Quality	Flexibility	Specificity	Cost-Quality	Resident Sensitivity	Jobs
Quality	1					
Flexibility	0.689	1				
Specificity	0.632	**0.228**	1			
Cost-Quality	0.708	0.939	**0.219**	1		
Resident Sensitivity	0.658	0.897	**0.381**	0.904	1	
Jobs	0.699	0.962	**0.270**	0.985	0.905	1

2.6.2 Appendix B. "The French, municipal elections and the mayors' political label" survey

In March 2014, in view of the forthcoming municipal elections, Harris Interactive (a full service, consultative custom market research agency) conducted an Online Survey of 1,000 people representative of the French voting population (quota sampling and statistical recovery methods were applied for gender, age, socio-professional category and residential area of the respondent). The survey, entitled *The French, municipal elections and the mayors' political label*, targeted people registered as voters in municipalities of at least 1,000 people (*i.e.* who share the same voting system for municipal elections) and aim to examine, among other things, the voters depending on the importance they attach to mayor's political label, in various areas of municipal action. Some of their observations are of primary importance for the subject of this paper.

What can we learn from this survey?

1. Citizens care about municipal elections

Three voters over four (74%) are interested by municipal elections (31% even declare to be "much" interested). On the contrary, only 6% announce that they are interested "not at all" by these elections. Moreover, 77% of voters claim they are "absolutely certain" to vote for the next election.

2. Citizens care about public services

The French believe that local government finances will be the main priority of their municipal team for the coming years: 55% consider both the thematics of "municipality spendings" and "local taxes" as issues of top level priority. The third thematic which shows the highest level of priority is the safety of people and property (48%), ahead of promoting economic development and employment (45%). Three issues

related to public services are also identified as "total priorities" by more than one over three voters: the maintenance and quality of public services (39%), the issue of transport (37%) and the maintenance of schools and extra-curricular activities system (35%). About one over three voters also accords high priority to cleanliness (32%), preservation of the environment (31%) and housing (31%). 29% hold this view on helping businesses, 28% of urban development, 27% on social services and actions, 25% on the participation of citizens in decisions and only 20% on cultural and sport activities (see the second column of Table 2.15 below).

3. Citizens care more about mayors' projects than mayors' political labels...

Respondents declare that their choice to vote for the municipal elections primarily relies on local considerations: local stakes (90%), candidates' projects (88%) or balance sheet of the incumbent mayor (84%). 79% of voters indicate that the candidates' personality will play "much" or "enough" in their choice (however, 65% of respondents indicate that the political label of the candidates plays a role in their decision).

4. ...but their preferences differs among ideological affiliations

As observable in the columns 3 to 7 in Table 2.15 below, the electorate of the main left-wing party stands by the higher priority it attaches to the issue of housing (37%) and services and social actions (37%). Even more than the average French, voters of the right-wing party and of the extreme right-wing party accord high priority to the issues of local taxes (right: 65%; extreme right: 71%) and security (right: 68%; extreme right: 61%). Right-wing voters also seem to give more importance to their immediate conditions of living: 44% say that the transport, cleanliness and urban development are of "very high priority".

Table 2.15: Priority of mayors' missions according to citizens and to their political affiliations

% of "very high priority"	All sample	Extreme left-wing voters	Left-wing voters	Center-right voters	Right-wing voters	Extreme rigth-wing voters
Municipality spendings	55%	55%	47%	58%	**61%**	59%
Local taxes	55%	44%	44%	45%	**65%**	**71%**
Safety of people and property	48%	33%	36%	42%	**68%**	**61%**
Promotion of economic development and employment	45%	40%	50%	46%	46%	38%
Maintenance and quality of public services	39%	43%	44%	20%	36%	35%
Urban transports and car parks	37%	22%	37%	25%	**44%**	43%
Maintenance of schools and extra-curricular activities	35%	33%	41%	19%	37%	27%
Cleanliness	32%	28%	25%	20%	**44%**	38%
Preservation of the environment	31%	36%	32%	18%	27%	23%
Housing	31%	33%	**37%**	10%	27%	25%
Provision and maintenance of shops	29%	18%	25%	35%	28%	34%
Urban developments	28%	22%	26%	35%	**33%**	22%
Social services and actions	27%	22%	**37%**	15%	23%	20%
Participation of citizens in decisions	25%	22%	18%	14%	20%	**33%**
Cultural and sports activities	20%	12%	24%	11%	17%	14%

The question asked to the respondent was the following: "*Should the following issues be considered as "very high priority", "high priority", "low priority" or "not priority" for the Mayor and the municipal team of your city in the coming years?*". Numbers in **bold** correspond to answers statistically higher than sample average.

2.6.3 Appendix C. Additional Tables

Table 2.16: Impact of the proportion of voters during the first round of presidential elections on the propensity to provide public services in-house (aggregated dataset)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
	Dependent variable: Percentage of in-house provision at the municipal level					
Ideology[a]						
Extreme left	0.980**					
	(0.470)					
Left		0.636				
		(0.434)				
Greens			-0.990			
			(3.068)			
Center right				-0.831		
				(0.880)		
Right					-0.990*	
					(0.511)	
Extreme right						-0.550
						(0.476)
Services' characteristics[c]						
Mean Resident Sensitivity	24.287	24.832	25.032*	24.383*	24.152	25.008
	(14.256)	(14.632)	(14.028)	(14.002)	(14.184)	(14.667)
Mean Service Specificity	11.538	6.584	8.945	9.694	12.217	6.533
	(15.754)	(16.419)	(15.208)	(15.400)	(16.100)	(16.648)
Cities' characteristics[b]						
Mean Population	-0.004	-0.005	-0.004	-0.005	-0.006	-0.004
	(0.005)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)
Mean Density	-0.231***	-0.236***	-0.212***	-0.226***	-0.230***	-0.225***
	(0.039)	(0.038)	(0.035)	(0.037)	(0.037)	(0.036)
Mean Unemployment	-0.422	-0.988*	-0.849	-0.910*	-0.218	-0.826
	(0.533)	(0.537)	(0.544)	(0.528)	(0.567)	(0.561)
Mean Income per Capita	1.429***	1.448***	0.795**	1.166**	2.122**	0.792**
	(0.435)	(0.502)	(0.289)	(0.422)	(0.802)	(0.292)
Mean Debt per Capita	-0.016***	-0.013***	-0.015***	-0.015***	-0.015***	-0.013***
	(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Constant	65.369***	58.425**	89.193***	95.342***	91.414***	91.412***
	(12.295)	(22.567)	(18.379)	(16.685)	(11.272)	(12.566)
N	156	156	156	156	156	156
R^2	0.171	0.170	0.162	0.164	0.171	0.167

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the regional level in parenthesis. [a]: the variables stands for the mean number of votes obtained by political parties at the first round of presidential elections through the five last elections (1988, 1995, 2002, 2007 and 2012). [b]: mean values (2006-2013). [c] The variable *Mean Resident Sensitivity* (respectively *Mean Service Specificity*) stands for the average value of resident sensitivity (respectively service specificity) of all the services provided at the municipal level. For every regression, the dependent variable is the percentage of public services provided in-house per municipality. Column 1 (respectively Column 2, 3, 4, 5 and 6) displays the results of the OLS regression where the independent variable of interest is the number of votes of the extreme left-wing party (respectively Left, Greens, Center Right, Right and Extreme right) during presidential elections since 1988.

Table 2.17: Service dataset - Impact of presidential votes on the propensity to provide public services in-house depending on the levels of Resident Sensitivity and Service Specificity

	(1) Logit	(2) Logit	(3) Logit	(4) Logit
	Dependent variable: Probability of in-house provision at the service level			
	Resident Sensitivity		*Service Specificity*	
	Low	High	Low	High
Ideology				
Number of Left-wing Presidential Majority since 1988	0.023	0.046**	0.050***	0.016
	(0.020)	(0.021)	(0.018)	(0.020)
Cities' characteristics[a]				
Mean Population	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Mean Density	-0.001*	-0.003***	-0.003***	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Mean Unemployment	-0.009	-0.002	-0.002	-0.009
	(0.006)	(0.006)	(0.006)	(0.006)
Mean Income per Capita	0.016	0.030*	0.035***	0.010
	(0.013)	(0.018)	(0.013)	(0.011)
Mean Debt per Capita	-0.000***	-0.000**	-0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
N	274	338	381	231
Pseudo-R^2	0.03	0.08	0.08	0.03

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level in parenthesis. [a]: mean values (2006-2013). For every regression, the dependent variable is a dummy which equals one when the service is provided in-house. Columns 1 and 2 compare situations of low and high Resident Sensitivity, and the independent variable of interest is the number of left-wing presidential majorities since 1988. Columns 3 and 4 compare situations of low and high Service Specificity, and the independent variable of interest is the number of left-wing presidential majorities since 1988.

Table 2.18: Impact of left-wing mayors and service fixed effects on the likelihood to provide public services in-house - Control variables coefficients (service dataset)

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit	(6) Logit
	Dependent variable: Probability of in-house provision at the service level					
Ideology	See Table 2.8 in Section 2.4.2					
Services Fixed Effects[a]	See Table 2.8 in Section 2.4.2					
Cities' characteristics[b]						
Mean Population	-0.000	-0.000	-0.000	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mean Density	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Mean Unemployment	-0.007	-0.008	-0.007	-0.007	-0.007	-0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Mean Income per Capita	0.023**	0.019**	0.019**	0.019**	0.016*	0.016*
	(0.011)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Mean Debt per Capita	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	612	612	612	612	612	612
Pseudo-R^2	0.09	0.1	0.09	0.09	0.09	0.09

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the municipal level in parenthesis. [a]: the six services are compared to the parking lots service ; the latter was selected for his intermediate level of outsourcing ratio (50%). [b]: mean values (2006-2013). For every regression, the dependent variable is a dummy which equals one when the service is provided in-house. Column 1 displays the results of the Logit regression where the independent variable of interest is the number of left-wing mayors since 1989. Column 2 (respectively Column 3, 4, 5 and 6) displays the results of the regression where the independent variable of interest is a dummy identifying whether left-wing mayors have been at office since 1989 (respectively 1995, 2001, 2008 and 2014).

Table 2.19: Descriptive statistics on the datasets restricted to long-term and short-term contracts.

	N	Mean	Std. Dev.	Min	Max	N	Mean	Std. Dev.	Min	Max
	Long-term contracts[a]					**Short-term contracts**[b]				
Dependent variable										
Service provided in-house (2015)	143	57.52	37.11	0	100	144	69.56	42.24	0	100
Political variables										
Left since 1989	143	0.17	0.38	0	1	144	0.22	0.42	0	1
Left since 1995	143	0.20	0.40	0	1	144	0.25	0.43	0	1
Left since 2001	143	0.24	0.43	0	1	144	0.28	0.45	0	1
Left since 2008	143	0.30	0.46	0	1	144	0.33	0.47	0	1
Left in 1989	143	0.55	0.50	0	1	144	0.54	0.50	0	1
Left in 1995	143	0.45	0.50	0	1	144	0.48	0.50	0	1
Left in 2001	143	0.38	0.49	0	1	144	0.42	0.49	0	1
Left in 2008	143	0.52	0.50	0	1	144	0.55	0.50	0	1
Left in 2014	143	0.31	0.47	0	1	144	0.34	0.48	0	1
Control variables[c]										
Mean Population	143	97.36	203.15	9.75	2222.98	144	102.67	202.77	9.75	2222.98
Mean Density	143	39.34	44.16	1.46	254.13	144	43.16	46.02	1.46	254.13
Mean Unemployment	143	9.34	3.32	5	34.44	144	9.27	3.32	5	34.44
Mean Income per Capita	143	12.21	3.60	7.24	41.89	144	12.32	3.77	7.24	41.89
Mean Debt per Capita	143	1247.85	622.07	95.63	3975.50	144	1229.80	635.37	95.63	3975.50

[a]: Long-term contracts: mean duration higher than 10 years (parking lots, street lighting, water distribution, and water treatment). [b]: Short-term contracts: mean duration lower than 10 years (childhood care, collective catering, and waste collection).[c]: mean values (2006-2013)

Chapter 3

Plural Governance for Local Public Services: a Strategic Choice? An Empirical Investigation based on the French Parking Industry*

3.1 Introduction

The choices of governments regarding the delivery of public services have been scrutinized by scholars over the past decades (see for instance Bel and Fageda [2007, 2009]; Levin and Tadelis [2010]). Most of the studies conducted on local data compare direct public provision (*i.e.* in-house provision, when governments produce public services themselves, with their own equipments and employees) to contracting out, often referred to as "privatization" [Lòpez-de Silanes et al., 1997; Bel and Miralles, 2003; O'Toole and Meier, 2004; Bel and Fageda, 2007].[1]

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[1]Even if "privatization" and "contracting out" are often used as synonyms, there is a difference between the two concepts. Privatization refers to situations where the private company acquires the property of the infrastructure and is the only recipient of its operation; while contracting out implies contracts with an external organization (*e.g.* concession contracts), which only give the organization the right to operate the service, often in exchange for royalties. In the remainder of this article, we will therefore systematically use the words "contracting out", "externalization", or "outsourcing".

This large body of literature was motivated by the fact that privatization of local public services has dramatically increased over the past decade (see for instance studies conducted on ICMA[2] surveys in the US, *e.g.* Brown and Potoski [2003]; Walls et al. [2005]; Hefetz and Warner [2012], or Bel and Miralles [2003]; Beuve and Le Squeren [2016] in Europe). Scholars thus studied the factors motivating externalization of public services; and the general consensus is that contracting out decisions are motivated by pragmatism, *i.e.* by the willingness of governments to decrease the costs of service delivery [Bel and Fageda, 2009]. However, Beuve and Le Squeren [2016] also find an important role of ideology in make-or-buy decisions, and show that long-term cities' ideology explains their propensity to internally produce public services.[3]

But governments actually face a more complex set of choices than the simple make-or-buy dichotomy. First, local authorities can form contracts with other governments [Brown and Potoski, 2003], or with public companies [Levin and Tadelis, 2010]. Second, a city can simultaneously opt for the "make" and "buy" alternatives for the provision of the same public service, and thus produce a portion of the service themselves, while contracting with external (public or private) companies. This "plural alternative" has actually been studied in private settings first, and especially in the context of franchising. The literature based on private settings opposes two approaches. On the one hand, some scholars consider the plural alternative as a second-best choice, and organizations would normally prefer one of the two polar solutions in the absence of constraints [Caves and Murphy, 1976]. Following that approach, plural governance is not sought *per se*, and is not stable over time [Pénard et al., 2004]. On the other hand, some studies claim that plural governance is a strategic decision, that can enhance efficiency [Bradach and Eccles, 1989; Bradach, 1997], mainly because it allows to decrease transaction costs

[2]International City/County Management Association.

[3]Beuve and Le Squeren [2016] empirically show that the current proportion of public services produced in-house by French municipalities can be explained by variables measuring ideology, when the latter are constructed in the long-run. They indeed argue that make-or-buy decisions of local governments are path-dependent, and the propensity to provide public services in-house at time t cannot be explained by the mayors' political affiliation in t.

associated with externalization [Dutta et al., 1995]. According to that approach, organizations intentionally choose to mix internal and external delivery, and plural governance is an abiding phenomenon [Pénard et al., 2003; Lafontaine and Shaw, 2005; Pénard et al., 2011].

More recently, public administration scholars took on the subject of plural governance. Various theoretical grounds are mobilized by the literature to explain local governments' use of plural sourcing; the most common being the Transaction Cost Theory (*e.g.* Brown and Potoski [2003]) and the Resource-Based View (*e.g.* Porcher [2016]). Various designations are also used, both in private and public settings, to refer to this phenomenon: concurrent sourcing [Parmigiani, 2007; Hefetz et al., 2014; Porcher, 2016], plural strategies [Puranam et al., 2013], mixed delivery [Warner and Hefetz, 2008; Pénard et al., 2003], partial monitoring [Pénard et al., 2011], or dual distribution [Gallini and Lutz, 1992]. In empirical studies, the phenomenon is measured in various ways. Brown and Potoski [2003] define "joint contracting" as situations where municipalities produce services both internally and externally, but also contract out to distinct suppliers; Warner and Hefetz [2008] define governments' propensity to use mixed delivery as the ratio of the number of services provided by mixed delivery to the total number of services provided; and Porcher [2016] measures concurrent sourcing in the water sector as the ratio of water bought to another city to water bought plus water production of that municipality. This myriad of approaches, designations, and measurements, reflects the fact that the investigation of plural sourcing is new, especially in public settings.

The empirical literature that investigates plural governance in public settings [Brown and Potoski, 2003; Warner and Hefetz, 2008; Porcher, 2016] does not oppose the two distinct views of plural governance (that is, plural governance as a second-best choice, which is not stable over time *versus* plural governance as a strategic choice, stable over time). Let us take the example of Porcher [2016] to elaborate on that point. Porcher [2016], who studies plural governance in the French water sector,

shows that the level of plural sourcing increases with the level of complexity for a municipality to produce the good, the costs of producing the good, or with the level of its contracting capabilities. However, from a theoretical point of view, those elements actually increase the extend to which the municipality uses outsourcing, but does not explain the reason why the city would continue internal production. In the same way, Brown and Potoski [2003], who study the "joint contracting" alternative, find for instance that governments in metropolitan areas, for which markets are more likely to be competitive, produce more services either through complete or joint contracting. Again, this argument does not perfectly explain why local communities would decide to both internally and externally produce one service. In those approaches, it is thus not clear whether plural governance is a strategic or a second-best choice.

This article contributes to this literature by opposing three potential explanations for local governments' resort to plural sourcing. We build a first set of propositions on the approach that considers plural governance as a second-best choice, or as the aggregation of distinct decisions made for distinct transactions (plural governance is not desired *per se*). The second set of propositions is built on the approach that considers plural governance as a strategic organizational choice, which allows to decrease the cost of service delivery. Finally, we consider a third set of propositions, based on an approach that has been understudied in previous literature: we take into account the political considerations of local governments. We therefore investigate how political factors can explain plural governance.

Our propositions and our empirical methodology allows to distinguish between three distinct explanations for plural sourcing. Moreover, we focus on one single public service (parking lots), which permits to perfectly control for the characteristics of the service when comparing the practices of different municipalities. Our empirical analysis uses data about the practices of 97 municipalities regarding the management of their parking lots, in 2010. We use a multinomial logit to compare three

distinct alternatives: total internal provision, complete externalization, or plural sourcing. An investigation of contracting out to public companies is also included in our analysis. Our results clearly indicate that plural sourcing is a strategic choice, rather than an intermediate situation between complete in-house provision and complete contracting out. Among the propositions built on literature, one in particular suggests that plural governance is a strategic choice: the likelihood to use plural sourcing should increase with the level of fiscal stress of local governments, since when municipalities suffer from high levels of fiscal stress, their desire to decrease the cost of service delivery is stronger. This proposition is empirically verified, indicating that plural governance is used in strategies designed to decrease costs.

Next section briefly describes the characteristics of the French parking industry. In Section 3.3, we build three distinct sets of propositions, derived from existing literature, both in the public and in the private sector. Their relevance to our setting (local governments and one single public service) is discussed for each proposition. Section 3.4 details the data employed in our empirical investigation; Section 3.5 exposes the empirical results; and a final section discusses their implications.

3.2 Institutional details about the French parking sector

3.2.1 Alternative organization modes

In France and in most European countries, public parking policy is a responsibility of local authorities. French jurisprudence considers parking as an "industrial and commercial public service": it is under the responsibility of local governments to administer both off-street and on-street parking. Unlike sectors associated to former state monopolies (energy, railways, etc.), there is no national regulator, hence

local governments are in charge of defining the services, selecting providers, and monitoring performances. Although public authorities must retain the ownership,[4] they can opt, for each parking lot, either for internal provision or for externalization. Local governments can then conclude contracts with external operators for the construction and/or the exploitation phases, but also only for works or renovations. The contribution of the private sector is far from being anecdotal: since the first car park concession, which was awarded to a private company in 1962, the outsourcing of parking services has been continuously increasing. Between 1960 and 1980, thousands of lots were constructed by private operators under public contracts which generally included the right of exploitation. In 2011, more than 70% of French lots were operated by public or private companies.[5]

3.2.2 A competitive sector

The French parking sector is characterized by a growing level of competitive pressure between French firms (local operators as well as larger companies) and, more recently, between national and foreign operators [Baffray and Gattet, 2009]. Consequently, when public authorities decide to outsource the provision of parks, they can select a supplier among a number of national and international companies[6] as well as local firms. The sector is characterized by the domination of one actor, but nonetheless by a lower level of concentration than other local public services. Indeed, a recent report[7] highlights that the three-firms concentration ratio in the sector is equal to 76%, or 73% if in-house provision is included as part of the relevant market. By comparison, the same ratios for the water sector in France are respectively equal to 90% and 65% [Chong et al., 2015], which indicates a greater competition in parking services than in the water sector. This statement is also

[4] French law provides that all infrastructures remain the property of municipalities.

[5] In 2011, 55% of the car parks were operated by private operators and 18% by public companies (data from the French National Federation of Parking Activities).

[6] Vinci Park, Q-Park, Epolia, Effia, Interparking, Parking de France, UrbisPark, AutoCité and SAGS are the most frequent bidders in France.

[7] Report based on data collected by the statistics department of French ecology ministry's division for sustainable development, over the 2004-2006 period.

confirmed by the relatively low level of renewal rate of contracts in the parking sector ($\simeq$ 60% in France – see Beuve et al. [2015]), compared to other sectors such as urban public transport ($\simeq$ 90% in France – see Amaral et al. [2009]), or water sector ($\simeq$ 90% in France – see Guérin-Schneider and Lorrain [2003]). In addition to this fierce competition, a municipality may always decide to return to in-house provision when a contract expires. This aspect will be developed in greater detail later.

3.2.3 A standard service

As suggested by the low rate of contract renewal in the sector, parking management is a standardized service, and contracting parties are relatively free from any bilateral dependency when a contract expires. As underlined by Brown and Potoski [2003], two service characteristics have a crucial influence on the chances of contract success, namely asset specificity (*i.e.* the extent to which resources involved in a given service can be reused for other services), and ease of measurement (*i.e.* the extent to which the quality and quantity of outcomes can easily be measured). Brown and Potoski [2003] establish a ranking of public services built on a survey of public managers' perceptions of these dimensions, and the operation of parking lots and garages appears among the less specific (2.36/5) and easiest to measure (2.03/5) services.[8] Those low levels of asset specificity and measurement difficulty are also obtained by other studies using the same type of survey [Levin and Tadelis, 2010; Hefetz and Warner, 2012].

The surveys cited above are all conducted in US settings. As US and French cities might differ in many dimensions, and notably in their public managers' perceptions about local public services, Beuve and Le Squeren [2016] replicate the survey and

[8] Asset specificity and measurement difficulty associated with urban transport and water sectors (for which renewal rates are on average 1.5 times higher than in the parking sector) are respectively equal to 3.35 and 2.48 for public transportation, and to 3.94 and 2.44 for the water sector [Brown and Potoski, 2003].

the methodology used by Levin and Tadelis [2010], and obtain measures of service characteristics for French municipalities. In their study, they analyze the answers of 21 general directors of local public services, who were asked to assess a range of 7 services (childhood care, collective catering, parking lots, street lighting, waste collection, water distribution and water treatment) along six dimensions, and on a scale from 1 to 5.[9] More precisely, the authors ask the respondents to evaluate, for each service: (i) how easy or difficult it is to measure and monitor the quality (*Quality*), (ii) the need for flexibility (*Flexibility*), (iii) the ease of finding or switching outside providers (*Specificity*), (iv) the level of potential conflict between cost and quality (*Cost-Quality*), (v) the level of resident sensitivity to problems that might be encountered during the provision (*Sensitivity*) and (vi) the importance for the local community of the jobs created by this service (*Jobs*). Then, as Levin and Tadelis [2010], the authors standardize responses by each manager to each question to have mean zero and standard deviation one, and they average those standardized responses to obtain an average response to each question for each service. Summary statistics of their survey results are provided in Table 3.1.

Table 3.1: Summary Statistics of Survey Data on Services

Service	Quality	Flexibility	Specificity	Cost-Quality	Sensitivity	Jobs	Mean
Street Lightning	-0.393 (3/7)	-0.366 (2/7)	-0.700 (2/7)	-0.871 (1/7)	-0.409 (1/7)	-0.705 (2/7)	-0.574 (1/7)
Water Treatment	0.136 (5/7)	-0.345 (3/7)	0.302 (6/7)	-0.033 (3/7)	-0.251 (2/7)	-0.043 (3/7)	-0.039 (3/7)
Car Parks	**-0.408 (2/7)**	**-0.382 (1/7)**	**-0.535 (3/7)**	**-0.642 (2/7)**	**-0.042 (3/7)**	**-0.707 (1/7)**	**-0.453 (2/7)**
Water Distribution	0.160 (6/7)	-0.172 (4/7)	0.356 (7/7)	-0.107 (4/7)	0.524 (4/7)	-0.043 (4/7)	0.120 (4/7)
Collective Catering	-0.123 (4/7)	0.229 (6/7)	-0.849 (1/7)	0.639 (7/7)	0.530 (5/7)	0.638 (6/7)	0.177 (6/7)
Waste Collection	-0.634 (1/7)	0.109 (5/7)	0.156 (5/7)	0.115 (5/7)	0.681 (6/7)	0.538 (5/7)	0.161 (5/7)
Childhood Care	0.254 (7/7)	0.439 (7/7)	0.075 (4/7)	0.607 (6/7)	0.712 (7/7)	0.738 (7/7)	0.471 (7/7)

Table from Beuve and Le Squeren [2016]. Each service is associated to average and normalized scores for *Quality*, *Flexibility*, *Specificity*, *Cost − Quality*, *Sensitivity*, and *Jobs*. The ranking of each service according to each survey indicator is provided between parenthesis (for instance, car parks have the second lowest score concerning the *Quality* indicator).

[9] More details about the survey, the characteristics of the respondents and the results are available in Beuve and Le Squeren [2016] (see Chapter 2 of this dissertation).

Parking services appear to be relatively standard. According to the service rankings (which are provided between parenthesis in Table 3.1), car parks are characterized by the easiness to measure and monitor quality (*Quality* = 2/7, *i.e.* parking management is the second service over seven for the indicator *Quality*), the low need for flexibility (*Flexibility* = 2/7), little conflicts between the desire to save on costs and the desire to obtain high quality (*Cost-Quality* = 2/7) and the few importance for the local community of jobs created (*Jobs* = 1/7). Parking management also displays quite low levels of *Sensitivity* and *Specificity* (*Sensitivity* = *Specificity* = 3/7), suggesting that residents are not excessively aware and sensitive to problems that might be encountered with parking provision, and that there are few difficulties to find qualified providers or to switch providers. This last observation is consistent with the low level of renewal rate observed in the public parking industry, compared to other sectors.

3.2.4 Attentive citizens

The low sensitivity of citizens regarding parking services must be qualified. On the one hand, Beuve and Le Squeren [2016] find that parking services are judged as the third service among seven on this subject by general directors of local public services. On the other hand, Le Squeren and Moore [2016] emphasize that the price of public parking is one of the front-page topics before local elections in France. The authors note that *"parking lots are highly visible structures [...] whose management directly impacts voters' satisfaction"* [Le Squeren and Moore, 2016, page 9]. They empirically show that parking contracts are significantly more renegotiated in pre-election periods, indicating that elected officials manipulate those contracts to please their electorate, and to enhance their reelection perspectives. This assertion is confirmed by their finding that pre-electoral renegotiations relate to financial, and in particular price, manipulations.

These two results [Beuve and Le Squeren, 2016; Le Squeren and Moore, 2016] put together seem to indicate that citizens may not be highly sensitive to the mode of provision of cities' parking lots, while they are certainly more sensible to the price they pay when they have to park in their city. This assertion will be discussed later in this article.

3.3 Related Literature and Propositions

The Transaction Cost Theory offers an appropriate theoretical framework to study the make-or-buy question: should an organization buy a good (or a service) on the market, or rather produce it internally? The seminal work of Coase [1937] defines markets and hierarchies as two alternative mechanisms for allocating resources. The decision to make-or-buy depends on the characteristics of transactions, since the level of uncertainty, the level of asset specificity, and the frequency of transactions affect the cost of contracting [Williamson, 1981, 1985; Masten, 1984; Monteverde and Teece, 1982]. Intermediate levels of uncertainty or asset specificity then lead to hybrid governance forms, such as quasi-vertical integration [Williamson, 1991]. However, this theoretical framework *a priori* does not explain why organizations sometimes decide to split the total volume of a good, and produce a portion internally, while buying another portion on the market.

In this section, we investigate three potential explanations for plural governance. First, plural sourcing can be considered as a "non-strategic" (or a second-best) choice. On the one hand, plural governance can be a temporary choice that helps to circumvent information asymmetries [Gallini and Lutz, 1992]. On the other hand, partial externalization can be a temporary way to get access to capital [Caves and Murphy, 1976]. Finally, partial integration can be a second-best choice when cities do not face a sufficient number of potential suppliers [Warner and Hefetz, 2008]. Those explanations have in common that local governments do not seek to bring

together two distinct modes of governance (that is internal and external provision), and no particular long-run benefit is expected from this association. Since plural governance is not sought *per se*, this mode of provision is not stable over time [Pénard et al., 2004]. The propositions built on that approach are described in subsection 3.3.1, and the latter are indexed by the word *second-best* (see Propositions $1_{\text{second-best}}$ to $4_{\text{second-best}}$).

Second, plural sourcing can be considered as a distinct organizational choice, that can be preferred than both total internal and complete external provision [Parmigiani, 2007]. Plural sourcing can indeed lead to efficiency gains; the key argument of this approach is that plural governance allows to decrease transaction costs associated with externalization [Dutta et al., 1995]. Following that reasoning, plural sourcing should be an abiding phenomenon [Lafontaine and Shaw, 2005; Pénard et al., 2003]. The set of propositions built on that alternative approach are described in subsection 3.3.2, and are indexed by the word *efficiency* (see Propositions $1_{\text{efficiency}}$ to $3_{\text{efficiency}}$).

Finally, we hypothesize that the resort to plural sourcing can result from local governments' political concerns. The presence of interest groups can indeed create lock-in effects [Puranam et al., 2013], that prevent governments from completely outsourcing public services. Moreover, a recent set of papers highlights that mayors' ideology (*i.e.* their political affiliation) influences their make-or-buy choices: right-wing mayors favor externalization [Gradus et al., 2014], while left-wing mayors prefer in-house provision [Beuve and Le Squeren, 2016]. The last set of propositions built on that approach is derived in section 3.3.3, and propositions are indexed by the word *political* (see Propositions $1_{\text{political}}$ and $2_{\text{political}}$).

In the following subsections, the applicability of each argument to our setting (that is a public setting with one single public service –parking lots) is discussed. A summary of the testable propositions built on literature is displayed in Table 3.2.

3.3.1 Plural governance: a second-best choice

The "anomaly" of plural sourcing has first been studied in the context of franchising, as scholars attempt to explain franchisors' observed choices to keep a proportion of company-owned outlets, while contracting with independent franchisees; following the make-or-buy approach, one governance form should be superior to the other. Therefore some authors claim that externalization is more profitable, but franchisors own a proportion of their outlets, either to signal their type to franchisees [Gallini and Lutz, 1992],[10] or to credibly commit to protect the value of their brand [Scott Jr, 1995]. Following the authors, this situation results from the presence of information asymmetries at the expense of the potential suppliers (since the latter detain less information about the quality of the brand). In the case of municipalities, the concept of protecting the value of a brand does not apply, and [Scott Jr, 1995]'s assertion cannot be replicated in our setting. In contrast, the argument of Gallini and Lutz [1992] can explain the use of plural sourcing by local governments. Let us take the specific example of our sector, public parking lots, to elaborate on that point. If there is an uncertainty about the profitability of parking services in a municipality (that is parking services could suffer from low levels of demand), the city can decide in a first time to manage some lots in-house, in order to suppress demand uncertainty and to attract private suppliers. Let us note that, in the case of parking lots, sparsely dense areas are the ones that face the highest demand risks. Dense areas, which suffer less from asymmetric information about the profitability of their lots, are therefore less likely to use plural sourcing. This leads to Proposition $1_{\text{second-best}}$ below. Let us further note that, following that reasoning, plural governance is a way to circumvent information asymmetries, and the probability

[10] Empirical tests of this proposition [Lafontaine, 1993] did not confirm the latter. In those tests, the type of franchisor is measured as the growth rate of outlets.

to observe plural governance should decrease over time, as the issue of information asymmetry decreases [Pénard et al., 2004].

Proposition 1$_{\text{second-best}}$. *The likelihood to use plural provision decreases with the density of municipalities.*

Other scholars find that franchising is not profitable *per se*, but gives access to capital [Caves and Murphy, 1976], to managerial talent [Norton, 1988], or to local information [Minkler, 1990]. In a public setting, it is reasonable to state that a city would not use externalization to get access to local information; Minkler [1990]'s statement is thus not relevant in this study. On the contrary, the arguments developed by Caves and Murphy [1976] and Norton [1988] are applicable to a public setting: municipalities could use partial externalization when they lack capital or managerial talent. The literature on local governments' make-or-buy choices develops a similar argument; some authors argue that externalization is more likely when cities suffer from fiscal stress [Dijkgraaf et al., 2003; Brown et al., 2008; Hebdon and Jalette, 2008]. Fiscal stress indeed limits the ability of governments to raise revenue through taxation, which affects their ability to finance their own public services. The contribution of the private sector is then a way to get access to capital, and cities which suffer from high levels of fiscal stress favor externalization. The extent to which governments are able to raise revenue in order to finance public services is also positively linked to their income per capita. High-income households can indeed afford additional taxes that are usually associated with in-house provision [Boyne, 1998b]. Let us apply this reasoning to our setting. In the case of parking lots, a city that experiences a low level of fiscal stress and high income per capita would have the ability to finance every parking lot, and would not seek any contribution from the private sector. A city with a higher level of fiscal stress, and a moderate income per capita would only have the ability to operate some of its parking lots, and would need the contribution of the private sector for others. As the level of fiscal stress rises and the income per capita falls, a city would not have the ability to operate any parking in-house, which would lead to complete externalization. Following that argument, plural sourcing is therefore the result of

individual decisions for each parking lot, and a city provides a lot in-house when there is no capital constraint; and outsources a lot when there is a lack of capital. This leads to the second and third propositions:

Proposition 2$_{\text{second-best}}$. *The likelihood to contract out a public service increases with municipalities' fiscal stress:*

2.1. *The likelihood to use plural rather than internal provision increases with fiscal stress.*

2.2. *The likelihood to use external rather than plural provision increases with fiscal stress.*

Proposition 3$_{\text{second-best}}$. *The likelihood to contract out a public service decreases with municipalities' income:*

3.1. *The likelihood to use external rather than plural provision decreases with income.*

3.2. *The likelihood to use plural rather than internal provision decreases with income.*

Finally, studies about make-or-buy decisions of local governments highlight that the (total) externalization of a public service can result from the research of economic efficiencies. First, Donahue [1989] explains that local governments often do not have the scale to administer public services efficiently, because the latter can be delivered over a suboptimal jurisdiction. Externalization is then a way to circumvent that issue, because private companies usually operate across larger territories, at a more efficient scale [Donahue, 1989]. However, Donahue [1989]'s argument cannot explain the use of plural governance for one public service. Indeed, a small city which does not have the scale to administer one particular service would choose complete externalization. Second, and in the same vein, Bel and Fageda [2009] and Levin and Tadelis [2010] highlight that externalization happens when cities face a sufficient number of potential suppliers, since competition increases the expected benefits of outsourcing. Such an argument can explain the use of plural sourcing: municipalities which do not face a sufficient number of suppliers can use in-house provision to create competition on the service market [Warner and Hefetz, 2008].

Following that reasoning, large cities that face higher numbers of potential suppliers have a lowered willingness to create competition, therefore large cities should use less plural sourcing. This leads to the fourth and last proposition of this subsection:

Proposition $4_{\text{second-best}}$. *The likelihood to use plural governance decreases with the size of municipalities.*

This subsection summarized the works which consider plural governance as a second-best choice. Plural governance is not sought *per se*, but is a way to circumvent information asymmetries (see Proposition $1_{\text{second-best}}$), capital constraints (see Propositions $2_{\text{second-best}}$ and $3_{\text{second-best}}$), or the issue of a lack of potential suppliers (Proposition $4_{\text{second-best}}$). However the study of plural governance gave rise to another approach, which is developed in next sub-section.

3.3.2 Plural governance: a strategic choice motivated by efficiency concerns

In order to understand the resort to plural sourcing, Bradach and Eccles [1989] allege that the focus should move from individual transactions to *"the broader architecture of control mechanisms"* [Bradach and Eccles, 1989, page 97]. Plural governance can indeed be sought because it enhances efficiency. First, plural procurement can enhance performance because it decreases transaction costs linked with externalization, since it reestablishes termination as a credible sanction, and enhances monitoring and measurement of external suppliers [Porter, 1980; Dutta et al., 1995; Puranam et al., 2013]; in other words, plural governance can be used in benchmarking strategies. Second, plural governance can be beneficial when it creates collaboration, that is when knowledge generated in each mode can be used in both [Bradach and Eccles, 1989; Bradach, 1997; Puranam et al., 2013].

A recent strand of literature investigates the plural alternative in the context of local governments. First, Brown and Potoski [2003] consider the possibility for local governments to use "joint contracting" in a multi-service setting; but this category actually includes both the plural alternative (the use of internal and external provision for the same service), and complete contracting out to distinct suppliers (the use of externalization only, but to several vendors). In the same vein, Hefetz et al. [2014] investigate plural sourcing in a multi-service setting. The propositions derived by Brown and Potoski [2003] and Hefetz et al. [2014] are not applicable in our setting, because they find that some services are more likely to be provided using plural governance (or joint contracting) than others. For instance, services that are more difficult to measure will be more often produced with joint contracting because it endows cities with the ability to judge the performance and quality of a supplier against their own or that of the other suppliers [Brown and Potoski, 2003]; and cities that produce services that are characterized by high levels of asset specificity or great management difficulties rely more on plural governance [Hefetz et al., 2014]. Since our study does not compare the use of plural governance for different services, but rather focuses on one single service, those types of arguments are not relevant here. Then, Warner and Bel [2008] analyze plural provision in the US and in Spain, and conclude that it is more common in the US, while Spain favors the use of public companies;[11] however the authors do not directly study the reasons motivating plural provision of public services. In the same vein, the seminal article of Miranda and Lerner [1995] is one of the first researches that investigates plural governance in a public setting. However, the authors study the impact of plural sourcing on expenditure, employment, and wages; and do not directly investigate the determinants of plural governance.[12]

Let us go back to the reasons motivating plural governance to meet long-run efficiency: plural sourcing allows to decrease transaction costs [Porter, 1980; Dutta

[11] A study of public companies will also be included in the present article.

[12] Miranda and Lerner [1995] find that the percentage of services produced through plural governance has a negative impact on expenditure and a positive influence on wages; and conclude that plural sourcing is used in benchmarking strategies by local governments.

et al., 1995; Puranam et al., 2013], or creates collaboration [Bradach and Eccles, 1989; Bradach, 1997; Puranam et al., 2013], between the two modes. We believe collaboration is not likely to happen between private suppliers and a municipality. In contrast with franchising, which is organized as a network, public-private relations relate to individual contracts. Hence, the managers of private organizations, which operate across large territories, are not likely to share the innovations they develop in cooperative games with individual municipalities. The "transaction cost" argument is therefore the one that is investigated by Warner and Hefetz [2008] in their study of plural sourcing at the local level. In order to test for this concept, the authors use a survey question that evaluates *"internal attempts to decrease costs of service delivery"* [Warner and Hefetz, 2008, page 160]. Unfortunately, we are not able to take this type of survey variable into account in our analysis. Nonetheless, we hypothesize that the desire to decrease costs is an increasing function of fiscal stress: cities which suffer from high levels of debt have more incentives to reduce costs of service delivery. If plural governance is a way to mitigate those costs, because it allows benchmarking strategies and/or reestablishes backward integration as a credible sanction, then the resort to plural sourcing should increase with fiscal stress. This leads to the following proposition, which conflicts Proposition $2_{\text{second-best}}$:

Proposition $1_{\text{efficiency}}$. *The likelihood to use plural governance increases with fiscal stress.*

Another indirect way to test for this argument that plural sourcing is used in a strategic way is to consider that plural governance is preferred, but only some municipalities can implement this strategy. Plural sourcing is indeed a complex management system that can be handled only by the cities which have the required capabilities [Porcher, 2016], in other words large and rich ones [Warner and Hefetz, 2008]. Places with more professional managers also have a better ability to manage service delivery, and they are more aware of the benefits of plural delivery, because they know the importance of market management [Warner and Hefetz, 2008]. Following that reasoning, large and rich municipalities are more likely to resort to

plural governance, because they have the capabilities to manage plural governance, and they have more professional managers.[13] For example, in small towns, one single municipal team usually handles the management of all local public services, while in large cities a team is devoted to the management of each public service.[14] This leads to the following propositions, that conflict Propositions $3_{\text{second-best}}$ and $4_{\text{second-best}}$:

Proposition $2_{\text{efficiency}}$. *The likelihood to use plural governance increases with municipalities' income.*

Proposition $3_{\text{efficiency}}$. *The likelihood to use plural governance increases with the size of municipalities.*

This second subsection presented why local governments can seek to rely both on internal and external provision for one public service. Let us further note that, if plural governance is sought for efficiency concerns, this mode of sourcing is a distinct organizational choice that can be preferred than both total internal provision and complete externalization Parmigiani [2007]. In line with that idea, Lafontaine and Shaw [2005] find that managers of franchises have a targeted level of ownership; plural governance is thus an abiding phenomenon [Pénard et al., 2003]. The following and last subsection presents a last potential explanation for plural governance.

3.3.3 Plural governance: a choice motivated by political concerns

In their review of the factors explaining externalization of local public services, Bel and Fageda [2007] find that political processes can explain contracting out. Political processes refer to the presence of pressure groups, that have a preference

[13] Warner and Hefetz [2008] include a dummy in their analysis that identifies cities with a "council-manager". If this distinction is relevant in an US setting, it is not in a French one since there is only one type of municipality in France (every city is governed by an elected mayor). We argue that in France, places with more professional managers are large ones.

[14] In the smallest municipality of our sample (about 19,000 inhabitants), one municipal Direction is in charge of public procurement; while in the largest city of the sample (about 850,000 inhabitants), there is a specific Direction for the management of parking activities.

for one governance mode; for instance, public employees and unions have a preference for public provision [Warner and Hebdon, 2001; Miralles, 2008; Levin and Tadelis, 2010], while industrial users and high-income households prefer externalization [Warner and Hefetz, 2002; Miralles, 2008]. The presence of those processes can also be approximated by the labor market conditions [Lòpez-de Silanes et al., 1997], since municipalities that suffer from high unemployment levels would favor internal provision to increase the probability for workers to be hired locally. The presence of pressure groups can create lock-in effects, that prevent local governments from suspending in-house provision [Puranam et al., 2013]. In the case of parking lots, it would be much more difficult to externalize the last parking lot than the first one, because it would represent a complete stepping down of the city from the sector. In other words, it is politically difficult for local governments to suspend completely in-house provision in situations where unemployment is high. In cities that experience low levels of unemployment, it is not politically risky to completely externalize a public service; when unemployment increases, plural provision can be a way for municipalities to protect their political capital while benefiting from externalization; and for high levels of unemployment, complete in-house provision would be preferred. This reasoning leads to the following proposition:[15]

Proposition $1_{\text{political}}$. *The likelihood to contract out a public service decreases with the level of unemployment:*

4.1. *The likelihood to use plural rather than external provision increases with unemployment.*

4.2. *The likelihood to use internal rather than plural provision increases with unemployment.*

The last factor that can explain the emergence of plural governance is ideology. A recent set of studies finds an impact of mayors' political affiliation on their make-or-buy decisions [Picazo-Tadeo et al., 2012; Sundell and Lapuente, 2012; Gradus et al., 2014; Beuve and Le Squeren, 2016]. In Spain, Picazo-Tadeo et al. [2012]

[15] Recall that parking services are judged to be of very little importance regarding the local jobs they create for the community (see Table 3.1). In the specific case of parking services, we thus do not expect the impact of unemployment on make-or-buy choices to be strong.

find that left-wing parties reject delegating the management of water services to private companies. In Sweden, Sundell and Lapuente [2012] show that center-right governments contract out public services more than other types of governments. Gradus et al. [2014] use Dutch data and show that shifts to the market are more likely for right-wing governments, in the case of refuse collection. However, the authors surprisingly do not find any influence of left-wing affiliations on the likelihood to shift from the market to in-house provision. This surprising result can be explained by the fact that the choices of left-wing governments are constrained. Beuve and Le Squeren [2016] indeed show that when cities have been governed by left-wing parties for a long period of time, they produce a higher proportion of their public services in-house. They argue that once right-wing mayors have contracted out some public services, it is highly difficult for future left-wing administrations to go back to public provision, because of the length of contracts concluded with the private sector (the externalization of public services implies long term contracts with external organizations, that cannot be terminated for ideological motives); and because of the loss of competences externalization induces (governments loose their capability to manage the public service themselves).

Following Beuve and Le Squeren [2016]'s reasoning, plural provision can be the result of frequent political changes. A city that has always been governed by left-wing officials will be more likely to use in-house provision for one public service; a municipality which has always had right-wing governments will be more likely to completely externalize the service; and political changes in the past will lead to plural governance at time t. This leads to the last proposition:

Proposition $2_{\text{political}}$. *The likelihood to use plural provision increases with the number of changes of political affiliation in the past.*

Table 3.2: Summary of testable propositions

Concept	References	Testable hypothesis
	Plural governance as a second-best choice	
Plural to decrease information asymmetries	Gallini and Lutz [1992]	**Prop $1_{\text{second-best}}$**: The likelihood to use plural provision decreases with the density of municipalities
Plural to get access to capital and/or managerial talent	Caves and Murphy [1976]; Norton [1988]; Brown et al. [2008]; Hebdon and Jalette [2008]; Boyne [1998b]	**Prop $2_{\text{second-best}}$**: The likelihood to contract out a public service increases with municipalities' fiscal stress; **Prop $3_{\text{second-best}}$**: The likelihood to contract out a public service decreases with municipalities' income
Plural to create competition on the service market	Warner and Hefetz [2008]	**Prop $4_{\text{second-best}}$**: The likelihood to use plural governance decreases with the size of municipalities
	Plural governance motivated by efficiency concerns	
Plural to decrease the cost of service delivery	Porter [1980]; Dutta et al. [1995]; Puranam et al. [2013]; Warner and Hefetz [2008]	**Prop $1_{\text{efficiency}}$**: The likelihood to use plural governance increases with fiscal stress
Plural is possible when sufficient capabilities	Warner and Hefetz [2008]; Porcher [2016]	**Prop $2_{\text{efficiency}}$**: The likelihood to use plural governance increases with municipalities' income; **Prop $3_{\text{efficiency}}$**: The likelihood to use plural governance increases with the size of municipalities
	Plural governance motivated by political concerns	
Plural as the result of lock-in effects	Lòpez-de Silanes et al. [1997]; Puranam et al. [2013]	**Prop $1_{\text{political}}$**: The likelihood to contract out a public service decreases with the level of unemployment
Plural as the result of political history	Picazo-Tadeo et al. [2012]; Gradus et al. [2014]; Beuve and Le Squeren [2016]	**Prop $2_{\text{political}}$**: The likelihood to use plural provision increases with the number of changes of political affiliation in the past

3.4 Empirical Setting

This section describes the data and variables that are used in our empirical investigation of plural sourcing.

3.4.1 Data sources

The empirical investigation exploits data from a survey conducted by the CEREMA,[16] concerning cities' management practices regarding off-street and on-street parking. The main survey we exploit reflects the situation on the 31st of December, 2010.[17] The questionnaire was addressed to 455 French cities of more than 20,000 inhabitants. 196 municipalities answered at least to one question, which represents a response rate of about 43%. From this sample, we chose to keep only the answers about off-street lots, and eliminate the information about on-street parking management. The characteristics of the management of on-street and off-street parking lots is indeed likely to differ; and the management of on-street parking is more likely to differ among cities. In addition, we only keep in the final sample the cities which administer at least two parking lots; otherwise, they are not able to opt for the plural alternative. The final sample contains 97 municipalities; descriptive statistics on that sample can be found in Table 3.3. In order to construct the set of independent variables, we need information about the characteristics of the municipalities. This information comes from the INSEE,[18] and from the CDSP[19] for the political variables. Next subsection describes the construction of every variable in detail.

[16] The CEREMA ("Centre d'Études et d'expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement") is a French public administration, which is under the supervision the two ministries: the Ministry of Ecology and Sustainable Development, and the Ministry of Transportation.

[17] The survey was also conducted in 2005, but the number of respondents was far lower and the quality of responses less accurate. We will only use the 2005 survey to investigate the stability of plural form, but the main empirical investigation is conducted on the 2010 survey.

[18] French National Institute of Statistics and Economic Studies.

[19] Center for Socio-Political Data.

3.4.2 Model and variables

Our empirical strategy must enable us to compare the plural alternative to the two other polar solutions (complete internalization, and complete externalization). As explained by Parmigiani [2007], the best way to model that decision is to use a multinomial logit, because this model allows to compare the sourcing modes two by two rather than considering a make-or-buy continuum. We indeed want to investigate whether plural sourcing is a strategic choice; and following our set of propositions, the trade-offs might be different between plural and complete externalization, and plural and complete internalization. Equation 3.1 describes the model that is tested (standard errors will be clustered at the departmental level). A description of the variables follows, and the descriptive statistics for each variable is displayed in Table 3.3.

$$\begin{aligned} Mode\_of\_provision_i = \beta_0 + \beta_1 Population_i + \beta_2 Density_i + \beta_3 Unemployment_i \\ + \beta_4 Income_i + \beta_5 Debt_i + \beta_5 Changes\_affiliation_i + \epsilon_i \end{aligned} \tag{3.1}$$

Dependent variables.

The dependent variable in every multinomial logit following equation 3.1 is the observed mode of provision for the parking services of city i, in 2010. For each off-street lot, the municipality has three distinct alternatives: the externalization of the lot to a private company; the externalization to a public company; or in-house provision, with the municipality's own employees and equipments. In the survey, each city had to indicate the governance mode for each parking lot. Therefore, we know, for each municipality, whether it (i) completely externalizes its parking lots (*i.e.* every lot of the city is delegated); (ii) completely internalizes its parking lots (*i.e.* every lot of the city is provided in-house), or (iii) uses plural sourcing (*i.e.* some lots are externalized while others are managed in-house). Each dependent variable is therefore a class variable which identifies the mode of provision, for each city, in 2010.

Table 3.3: Descriptive Statistics

	N	Mean	Std. Dev.	Min.	Max.
MNL 1: Categories of the dependent variable [a]					
Private	97	0.3505	0.4796	0	1
Public	97	0.4330	0.4981	0	1
Plural	97	0.2165	0.4140	0	1
MNL 2: Categories of the dependent variable [b]					
Private	97	0.4639	0.5013	0	1
Public	97	0.3608	0.4827	0	1
Plural	97	0.1753	0.3822	0	1
MNL 3: Categories of the dependent variable [c]					
Private	97	0.3505	0.4796	0	1
Public	97	0.3608	0.4827	0	1
Semi-public	97	0.0619	0.2421	0	1
Plural	97	0.2268	0.4209	0	1
Independent variables					
Mean Population (2006-2010) [d]	97	96.5215	115.628	18.8832	848.8372
Mean Density (2006-2010) [e]	97	3.6720	4.2125	0.3100	25.1453
Mean Unemployment (2006-2010)	97	8.2047	1.8361	4.72	13.32
Mean Income *per capita* (2006-2010) [f]	97	12.1792	3.7278	6.8503	41.7502
Mean Debt *per capita* (2006-2010) [f]	97	1.1611	0.5373	0.0272	2.786
Number of changes of political affiliation[g]	97	1.0206	1.0605	0	5

[a]: for the first multinomial logit (MNL), long-term contracts with public companies are considered as a "public" alternative. [b]: for the second MNL, public companies are included in the "private" alternative. [c]: in the third version of MNL, public companies are considered as a distinct category. [d]: in thousands of inhabitants. [e]: in thousands of inhabitants per square kilometer. [f]: in thousands of Euros per inhabitant. [g]: between 1989 and 2010.

Three dependent variables are constructed, and each of them refers to a different categorization of the externalization to public companies. As noted by Levin and Tadelis [2010] and Brown and Potoski [2003], the externalization to public companies may not incur the same trade-offs than the externalization to private entities. In French law, public firms are defined as companies for which the principal shareholder is one or several public entities.[20] When a city externalizes a public service to a public company, it is ensured that public interest will be taken into account in the objectives of the firm. However, public firms are supposed to be treated exactly as private entities when a call for tenders is launched; and the control of the city over the public service once it has been delegated, even to a public company, is not as strong as in the case of internal provision. As there is no clearcut answer

[20]The words "public companies" refer to the French "Sociétés d'Économie Mixte (SEM)", which can also be translated as "semi-public companies". In those firms, at least one private company has to be present among the shareholders, and the participation of public entities cannot exceed 85% of the capital.

on how to treat public companies in our empirical strategy, we proceed as follows. In the first estimation of equation 3.1, we consider the externalization to public companies exactly as in-house provision; in the second estimation, we consider the externalization to public companies as private provision (*i.e.* as the externalization to private firms); and in the last estimation, we consider the externalization to public companies as a distinct category. Descriptive statistics in Table 3.3 show that around 6% of the cities of the sample externalize every parking lot to public companies; 35% of the cities externalize every lot to private companies; 36% opt for complete in-house provision; and 22% use plural governance (*i.e.* a mix of at least two of the three preceding sourcing modes).

Independent variables.

In order to put the three sets of propositions to the test, we constructed a range of independent variables. All those variables (except the political one) are averaged on the 2006-2010 period. The observed governance mode in 2010 is indeed the result of choices made in the past, and the independent variables should not be measured in 2010. The variable $Density_i$ (in thousands of inhabitants per square kilometer) allows to test for Proposition $1_{\text{second-best}}$ (see Table 3.2). The level of fiscal stress, which appears in propositions $2_{\text{second-best}}$ and $1_{\text{efficiency}}$, is measured by the variable $Debt_i$, the level of debt of city i in thousands of Euros per capita. The variable $Income_i$ (in thousands of Euros per inhabitants) allows to oppose propositions $3_{\text{second-best}}$ and $2_{\text{efficiency}}$. $Population_i$ corresponds to the mean population of city i, in thousands of inhabitants, and stands to test for propositions $4_{\text{second-best}}$ and $3_{\text{efficiency}}$. Finally, two additional variables are introduces in the empirical strategy in order to put to the test propositions $1_{\text{political}}$ and $2_{\text{political}}$: the variables $Unemployment_i$ and $Changes\_affiliation_i$. Please note that $Unemployment_i$ is the only variable of the present analysis that cannot be measured at the municipal level; French national government indeed defines "employment areas", that include several municipalities, to measure employment at the local level. Therefore, this variable is an imperfect proxy for unemployment in city i. As for the measure of the changes of political affiliations, Beuve and Le Squeren [2016] show that polit-

ical variables must be measured in the long-run. Therefore, we constructed the variable $Changes\_affiliation_i$ as the number of changes of political affiliation in city i from 1989 to 2010.[21] In our sample, this variable varies from 0 to 5, which indicates some changes of mayor beside elections (which is the case, for instance, when incumbent is appointed Minister or dies in office). Please note that we only consider two different affiliations (left or right) in the main specification.

3.5 Empirical Results

3.5.1 Multinomial logits

The results for the three alternative estimations of equation 3.1 are presented in Tables 3.4, 3.5 and 3.6. As explained above, each estimation corresponds to a different construction of the dependent variable, depending on the way we consider the externalization to public companies (as public provision in Table 3.4, as private provision in Table 3.5, or as a distinct governance mode in Table 3.6). In contrast, the set of independent variables is exactly similar through specifications. In each table, the left-hand side columns present the results of the multinomial logit, where plural sourcing is the base alternative. Since the size of coefficients cannot directly be interpreted in those columns, the right-hand side columns present the post-estimation coefficients (marginal effects at mean).

[21] Municipal elections took place in France in 1989, 1995, 2001, and 2008.

Table 3.4: Multinomial Logit 1: Considering the externalization to public companies as in-house provision

	Private *vs.* Plural	**Public *vs.* Plural**	**Private**	**Plural**	**Public**
	Multinomial Logit (MNL)		*Marginal Effects at Mean (MEM)*		
Mean Population[a]	-0.0139**	-0.0239***	0.0005	0.0029***	-0.0034***
	(0.0062)	(0.0076)	(0.0011)	(0.0010)	(0.0012)
Mean Density[a]	0.1492	0.0752	0.0243**	-0.0179	-0.0064
	(0.0959)	(0.1040)	(0.0112)	(0.0151)	(0.0126)
Mean Unemployment[a]	0.0211	0.0040	0.0045	-0.0020	-0.0025
	(0.1825)	(0.1845)	(0.0288)	(0.0272)	(0.0281)
Mean Income *per capita*[a]	-0.2082***	-0.3129**	-0.0002	0.0404***	-0.0402*
	(0.0731)	(0.1265)	(0.0181)	(0.0122)	(0.0234)
Mean Debt *per capita*[a]	-1.5642***	-1.0199**	-0.2171*	0.2049***	0.0122
	(0.5694)	(0.4897)	(0.1211)	(0.0736)	(0.1068)
Changes of affiliation[b]	0.0335	-0.1366	0.0302	0.0074	-0.0376
	(0.3464)	(0.2886)	(0.0663)	(0.0448)	(0.0546)
Constant	5.7224***	7.7794***			
	(2.0846)	(2.7086)			
N	97	97	97	97	97
Pseudo-R^2	0.1912	0.1912			

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010).[b]: number of changes of political affiliation between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses to use both in-house provision and long-term contracts. The externalization to public companies is considered as in-house provision. The two left-hand side columns present the coefficients of the MNL, while the three right-hand side columns display the marginal effects at mean.

The coefficients associated with the variable $Density_i$ in the left-hand side columns of Tables 3.4 and 3.5 are not statistically different from zero. Let us recall that Proposition $1_{\text{second-best}}$ postulates that the resort to plural governance should decrease as demand risk decreases, that is as density increases. This proposition is therefore not supported by our results. However, we find a positive marginal effect of density on the probability to use the private alternative (see column 4 in Tables 3.4 and 3.5). This result tends to confirm the assertion according to which externalization is more likely when cities face a high number of potential suppliers [Levin and Tadelis, 2010], since the number of suppliers is likely to increase with the expected profitability of parking lots (that is, when density increases).

The variables measuring cities' fiscal stress and income allow to oppose propositions $2_{\text{second-best}}$ and $1_{\text{efficiency}}$; as well as propositions $3_{\text{second-best}}$ and $2_{\text{efficiency}}$. The coefficients associated with those variables confirm the approach according to which plural governance is a strategic choice. Let us recall that the probability to observe plural provision is equal to 21.65% in the first multinomial logit (see Table 3.3). The marginal effect associated to $Debt_i$ in Table 3.4 is equal to 20.49. This indicates that, for an otherwise average city (meaning all the other variables being at their mean value), an increase of 1,000 Euros in the debt per capita increases the probability for parking lots to be provided using plural governance by almost 95% (since this probability changes from 21.65% to 42.14%). The coefficients associated with $Income_i$ further confirm this result: the marginal effect displayed in Table 3.4 is equal to 0.404, indicating that an increase of the income of 1,000 Euros per capita increases the probability of plural governance by almost 20%.

Those results are qualitatively similar, and even larger, when the externalization to public companies is included in the private alternative (see Table 3.5). Moreover, the coefficients associated with $Population_i$ confirm Proposition $3_{\text{efficiency}}$, while disproving Proposition $4_{\text{second-best}}$: as the population increases, the plural alternative is again preferred than the two other governance modes in Tables 3.4 and 3.5. However, this last effect is small: an increase of 1,000 inhabitants in an average municipality increases the probability of plural governance by about 1%.

Table 3.5: Multinomial Logit 2: Considering the externalization to public companies as private provision

	Private *vs.* Plural	**Public *vs.* Plural**	**Private**	**Plural**	**Public**
	Multinomial Logit (MNL)		*Marginal Effects at Mean (MEM)*		
Mean Population[a]	-0.0068**	-0.0274***	0.0022***	0.0018***	-0.0040***
	(0.0029)	(0.0090)	(0.0007)	(0.0005)	(0.0009)
Mean Density[a]	0.1103	0.0270	0.0229**	-0.0122	-0.0106
	(0.0694)	(0.0869)	(0.0114)	(0.0104)	(0.0116)
Mean Unemployment[a]	0.0405	-0.0534	0.0173	-0.0019	-0.0154
	(0.1933)	(0.1722)	(0.0364)	(0.0247)	(0.0253)
Mean Income *per capita*[a]	-0.2108***	-0.2624**	-0.0140	0.0320***	-0.0180
	(0.0610)	(0.1157)	(0.0168)	(0.0082)	(0.0173)
Mean Debt *per capita*[a]	-2.0237***	-1.1207**	-0.3316***	0.2503***	0.0814
	(0.5828)	(0.4749)	(0.1242)	(0.0726)	(0.0879)
Changes of affiliation[b]	0.0247	-0.1557	0.0279	0.0039	-0.0318
	(0.3533)	(0.2786)	(0.0688)	(0.0434)	(0.0439)
Constant	6.0573***	7.9391***			
	(2.0886)	(2.7726)			
N	97	97	97	97	97
Pseudo-R^2	0.2177	0.2177			

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]: number of changes of political affiliation between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses to use both in-house provision and long-term contracts. The externalization to public companies is considered as contracting with the private sector. The two left-hand side columns present the coefficients of the MNL, while the three right-hand side columns display the marginal effects at mean.

Put together, those results indicate that larger municipalities, which suffer from higher levels of debt, and benefit from higher levels of income per capita, have an increased use of plural governance. Plural sourcing therefore appears as a strategic choice, which results from the willingness to decrease costs (see the influence of the variable $Debt_i$); and which is only possible when municipalities have the means to manage this governance mode (see the influence of the variables $Population_i$ and $Income_i$).

Plural governance does not appear to be the result of political considerations, as the coefficients associated with $Unemployment_i$ and $Changes\_affiliation_i$ are never significant across specifications. The result concerning unemployment should be further challenged, since as explained above unemployment could not be measured at the municipal level. Moreover, since the number of changes of political affiliations do not impact the likelihood of plural governance in 2010, the latter does not seem to be the result of different sourcing decisions, made by different mayors. We further investigate this question, and additional tables are available in Appendix (see Section 3.7).[22] First, we replace the independent variable $Changes\_affiliation_i$ by a dummy, identifying cities where there has been at least one change in the political affiliation of mayors between 1989 and 2010. It could indeed be the case that the likelihood of plural provision is not an increasing function of the number of changes of political affiliation, but is significantly higher for cities that have been governed at least by two mayors of different political affiliations. However, the coefficients associated to this dummy variable are not statistically different from zero (see Table 3.8).

We then consider a more accurate measure of the affiliation of mayors: instead of making a simple distinction between left-wing and right-wing officials, we distinguish between far-left, left, center-left, center-right, right, and far-right governments. Again, we run the specifications with a count variable of the number of changes of affiliation, and with a dummy variable. In the same way, there is no significant impact of those variables on the proportion of plural provision in 2010 (see Tables 3.9 and 3.10). As highlighted in Section 3.2, it could be that the management of parking lots is not sensitive enough to be subject to ideology. In order to confirm that prevision, we tested for a last specification, and measured the longevity of the left in office. The independent variable counts the number of left-wing mayors in office, departing from 2010, and until 1989. If long-run ideology explains the propen-

[22] Every additional test is run following the specification shown in Table 3.6, where the externalization to public companies is considered as a distinct governance mode. This choice is motivated by the fact that this specification seems to have the greatest explanatory power, according to the Pseudo-R^2 displayed in Tables 3.4, 3.5 and 3.6.

sity of municipalities to keep providing services in-house [Beuve and Le Squeren, 2016], this variable should have a positive impact on the probability to manage parking lots in-house. However, we find no impact of this last ideology variable in Table 3.11. Those results are in line with the findings of Beuve and Le Squeren [2016], who demonstrate that the impact of lung-run ideology on cities' proportion of services produced internally is stronger for highly sensitive services. Moreover, if the history of ideology influences the portfolio of services kept in-house, it is not necessarily the case that it impacts the mode of provision for each service. It would indeed be more difficult for a city to externalize one service if every other service is already externalized, than to contract out when a high number of services remains in the hands of the local government.

Finally, the results of the last multinomial logit (where we consider the externalization to public companies as a distinct organizational choice), displayed in Table 3.6, confer additional support to our results. They show that the plural alternative is preferred than the three other governance modes, including externalization to public companies, when the population, the revenue per capita, and the debt per capita increase. The trade-offs at play when studying plural governance thus do not seem to vary when including public companies as a distinct organizational mode.

Table 3.6: Multinomial Logit 3: Considering public companies as a distinct alternative

	Private *vs.* Plural	**Public comp. *vs.* Plural**	**Public *vs.* Plural**	**Private**	**Plural**	**Public comp.**	**Public**
	Multinomial Logit (MNL)			*Marginal Effects at Mean (MEM)*			
Mean Population[a]	-0.0151**	-0.0178***	-0.0336***	0.0006	0.0037***	-0.0001	-0.0042***
	(0.0071)	(0.0063)	(0.0108)	(0.0012)	(0.0013)	(0.0002)	(0.0010)
Mean Density[a]	0.1536	0.1736*	0.0722	0.0260*	-0.0225	0.0033	-0.0068
	(0.1046)	(0.0981)	(0.1156)	(0.0137)	(0.0181)	(0.0035)	(0.0121)
Mean Unemployment[a]	0.0239	0.1386	-0.0436	0.0081	-0.0016	0.0060	-0.0125
	(0.1881)	(0.3845)	(0.1891)	(0.0316)	(0.0313)	(0.0126)	(0.0254)
Mean Income *per capita*[a]	-0.2147***	-0.6288***	-0.2967**	-0.0045	0.0463***	-0.0192	-0.0225
	(0.0775)	(0.1704)	(0.1284)	(0.0189)	(0.0131)	(0.0149)	(0.0187)
Mean Debt *per capita*[a]	-1.6937***	-2.5962**	-0.9736**	-0.2502*	0.2649***	-0.0644	0.0498
	(0.5938)	(1.1388)	(0.4571)	(0.1287)	(0.0848)	(0.0412)	(0.0836)
Changes of affiliation[b]	0.0102	-0.1141	-0.1821	0.0267	0.0102	-0.0031	-0.0338
	(0.3354)	(0.6114)	(0.2729)	(0.0696)	(0.0489)	(0.0234)	(0.0431)
Constant	6.0305***	9.1027**	8.3202***				
	(2.2033)	(4.4037)	(2.9326)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.2263	0.2263	0.2263				

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]: number of changes of political affiliation between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses either (i) to use both in-house provision and contracts with private companies, or (ii) to use both in-house provision and contracts with public companies, or (iii) to use both private contracts and contracts with public companies. The three left-hand side columns present the coefficients of the MNL, while the four right-hand side columns display the marginal effects at mean.

3.5.2 The persistence of plural sourcing

This last subsection discusses the stability of plural forms over time. The results presented in previous subsection indicate that plural governance is a strategic choice, which can be preferred than both total internal provision and complete externalization. The best way to confirm that assertion would be to prove that plural sourcing is stable over time [Pénard et al., 2003; Lafontaine and Shaw, 2005]. Unfortunately, our data does not enable us to study the persistence of plural governance in detail. Nonetheless, this subsection gives insights on that question, and avenues for future research. As mentioned in Section 3.4, the CEREMA survey was also conducted in 2005. However, with a dataset of only 57 observations, this survey could not be exploited in econometric analyses. In 2005, 21 cities use complete externalization to private companies; 5 cities use complete externalization to public firms; 20 municipalities internally manage every parking lot; and 12 cities use plural sourcing (including 5 cities using both internal provision and private contracts; and 7 cities using both public and private contracts). These 12 local governments are analyzed here, to investigate whether they renewed the plural choice between 2005 and 2010. Table 3.7 proposes a visual representation of the problem. Each capital letter represents a city using plural governance in 2005.

Table 3.7: Analysis of the cities which used plural form in 2005

	Stable choice in 2010	Stable in 2010 because of contracts' duration	Change in 2010
Plural : in-house provision and private contracts		**A**, **B**, **C**, **D**	**E**
Plural : private contracts and public contracts	**F**, **G**, **H**, **I**, **J**		**K**, **L**

This table analyses the stability of plural form, between 2005 and 2010. Each city is represented by a capital letter, and cities **A** to **L** use plural governance in 2005. Column 1 identifies the cities which renewed the plural choice between 2005 and 2010; column 2 identifies the cities for which delegation contracts have not expired between 2005 and 2010; and the last column identifies the changes of governance mode between 2005 and 2010.

In the first line, cities **A** to **E** used both in-house provision and contracts with private companies in 2005. The survey conducted in 2005 indicates the date of signature of the last delegation contract, and its duration. We are thus able to define whether contracts expired between 2005 and 2010. None of the existing contracts in 2005 expired before 2010; the governments were thus not able to change for complete internal provision, and the stability of the plural form can be considered as constrained. However, each city in first line could have delegated the parking lots provided in-house between 2005 and 2010, which actually indicates that they renewed their choice to keep a proportion of the production of this public service in-house. The only municipality which changed the mode of provision is city **E**. Further Internet researches indicate that for city **E**, the only parking lot that was managed in-house in 2005 was destroyed between 2005 and 2010, as part of an urban renewal plan. The city thus did not actually choose to switch from plural governance to complete externalization.

In the second line, cities **F** to **L** used contracts in 2005, both with public and private firms. Five of these seven municipalities renewed their choice of plural governance between 2005 and 2010. In other words, for each city, at least one contract expired between 2005 and 2010; but the five municipalities decided to keep contracting with both types of companies. In contrast, governments **K** and **L** switched from plural to complete externalization between the two dates. For the two cities, only one parking lot was managed by a public company in 2005, and when the contract expired it was awarded to a private firm. Again, for each of the two cities, we conducted further researches, and found the municipal council's resolutions that mentioned this contract award. In both cases, the incumbent public company was not present among the bidders following the call for tenders, so the municipal governments could not continue plural governance.

Of course, these results should be analyzed with caution, and do not properly prove that plural governance is a stable organizational form. However, they give insights that contribute to validating the results of the multinomial logits previously discussed. Proper panel data should be used to further investigate this question of the stability of plural forms in the public sector.

3.6 Discussion

In this article, we propose an alternative approach to study plural governance for local public services. We distinguish between three potential explanations of plural sourcing: plural governance can be considered as a second-best choice, which is not stable over time; it can be a strategic choice, motivated by efficiency concerns; or a choice motivated by political concerns. Our review of the existing literature and our empirical methodology permits to oppose those three approaches, and our results indicate that municipalities use plural governance in a strategic way. Therefore, we contribute to the literature in public administration, and add knowledge to the understanding of local governments' practices when it comes to the management of public services.

Moreover, we contribute to the debate over the factors that explain the management mode of local public services. The general consensus on this question is that contracting out of public services is motivated by pragmatism, and there is no room for ideology in explaining local governments' choices [Bel and Fageda, 2007]. But this result is surprising, especially when studying contracting out decisions in European economies, where citizens are highly politicized. Before local elections, in-house provision of public services is an important campaign argument for left-wing candidates; and generally, left-wing governments are in favor of greater state intervention. In that sense, a recent study reestablishes the importance of ideology in make-or-buy decisions of local governments, and shows that cities'ideology should be measured in the long-run [Beuve and Le Squeren, 2016]. Following that

recent finding, it could be the case that plural governance is only the result of the political history of municipalities. Indeed, successive administrations can make different choices according to their political affiliation, and those choices last for a long time because of the length of contracts, and because of the difficulties linked to backward integration. Therefore, our article proposes to measure the impact of changes of political affiliation on the likelihood to observe plural provision for one public service. Our results show that, even when measuring properly ideology, the latter does not seem to impact the likelihood of plural governance. We thus contribute to the debate by showing that some decisions, such as plural sourcing for one specific public service, are still strategic choices. If cities' past ideology explain their propensity to internally produce public services in multi-service settings, the specific choice of plural governance is a strategic one.

Moreover, our study adds knowledge on one particular public sector which is under-studied, despite its primary importance in urban areas [Shoup et al., 2005]: the management of public parking lots. Our results show that the mode of provision of parking lots is not highly sensitive, and that public opinion does not seem to impede local governments from externalizing this activity. However, the pricing of public parking is very sensitive, as demonstrated by other studies [Shoup et al., 2005; Le Squeren and Moore, 2016].

Finally, this article suggests avenues for future research. As mentioned before, the study of the plural phenomenon by public administration scholars is rather new, and constitutes a growing body of literature. We identify two main domains that should motivate future studies. First, the question of the stability of plural forms, and more generally of the changes of governance mode by local governments, is under-studied. The lack of available data is the main constraint faced by researchers to investigate those phenomena. Studies using panel data to investigate this type of question would be highly valuable. Second, more studies should be conducted to investigate the impact of plural governance on performance and efficiency of public services

provision. As suggested by our results, plural governance is a strategic choice, and it should therefore lead to cost reductions and/or performance increases. We identified two main studies who contribute to answer to that question. The seminal work of Miranda and Lerner [1995] finds that plural governance is associated with lower levels of expenditure and higher levels of wages. Porcher [2016] finds that plural sourcing in the water sector is associated with higher prices but stronger quality standards. More studies on that subject, ideally conducted on panel data, would add considerable knowledge to better understand the use of public sourcing in the public sector.

3.7 Appendix: Additional Tables

This section contains the tables that display the additional analyses conducted on the impact of ideology. The results were briefly discussed in Section 3.5.

Table 3.8: Additional results on ideology 1: Measuring affiliation changes (left-right) with a dummy variable

	Private *vs.* Plural	**Public comp. *vs.* Plural**	**Public *vs.* Plural**	**Private**	**Plural**	**Public comp.**	**Public**
	Multinomial Logit (MNL)			*Marginal Effects at Mean (MEM)*			
Mean Population[a]	-0.0151**	-0.0187***	-0.0340***	0.0007	0.0037***	-0.0001	-0.0043***
	(0.0062)	(0.0064)	(0.0109)	(0.0011)	(0.0011)	(0.0002)	(0.0010)
Mean Density[a]	0.1559	0.1642*	0.0745	0.0265**	-0.0226	0.0028	-0.0066
	(0.0960)	(0.0925)	(0.1093)	(0.0132)	(0.0170)	(0.0035)	(0.0124)
Mean Unemployment[a]	0.0424	0.1624	-0.0348	0.0113	-0.0043	0.0063	-0.0133
	(0.1847)	(0.3808)	(0.1866)	(0.0328)	(0.0301)	(0.0111)	(0.0261)
Mean Income *per capita*[a]	-0.2041***	-0.6192***	-0.3026**	-0.0014	0.0449***	-0.0184	-0.0251
	(0.0756)	(0.1524)	(0.1342)	(0.0198)	(0.0136)	(0.0162)	(0.0198)
Mean Debt *per capita*[a]	-1.8898***	-2.6285**	-1.0436**	-0.2905**	0.2881***	-0.0589	0.0613
	(0.6692)	(1.1057)	(0.4640)	(0.1414)	(0.0871)	(0.0405)	(0.0888)
Change of Affiliation (left-right)[b]	0.7748	-0.2158	0.0272	0.1949	-0.0833	-0.0260	-0.0856
	(0.7926)	(1.4777)	(0.7650)	(0.1588)	(0.1136)	(0.0468)	(0.1035)
Constant	5.5914***	8.9551**	8.2802***				
	(2.1691)	(3.8997)	(3.0249)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.2350	0.2350	0.2350				

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]: dummy identifying whether there has been a change of political affiliation (left-right distinction), between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses either (i) to use both in-house provision and contracts with private companies, or (ii) to use both in-house provision and contracts with public companies, or (iii) to use both private contracts and contracts with public companies. The three left-hand side columns present the coefficients of the MNL, while the four right-hand side columns display the marginal effects at mean.

Table 3.9: Additional results on ideology 2: Number of changes of political affiliation (party distinction)

	Private *vs.* Plural	**Public comp. *vs.* Plural**	**Public *vs.* Plural**	**Private**	**Plural**	**Public comp.**	**Public**
	Multinomial Logit (MNL)			*Marginal Effects at Mean (MEM)*			
Mean Population[a]	-0.0150**	-0.0177***	-0.0327***	0.0006	0.0036***	-0.0001	-0.0042***
	(0.0069)	(0.0062)	(0.0104)	(0.0012)	(0.0012)	(0.0002)	(0.0010)
Mean Density[a]	0.1527	0.1664*	0.0773	0.0252*	-0.0224	0.0029	-0.0058
	(0.1032)	(0.0959)	(0.1135)	(0.0135)	(0.0178)	(0.0031)	(0.0120)
Mean Unemployment[a]	0.0245	0.1398	-0.0395	0.0079	-0.0018	0.0058	-0.0120
	(0.1855)	(0.3700)	(0.1894)	(0.0311)	(0.0308)	(0.0112)	(0.0256)
Mean Income *per capita*[a]	-0.2128***	-0.6154***	-0.2819**	-0.0059	0.0448***	-0.0184	-0.0206
	(0.0767)	(0.1621)	(0.1275)	(0.0188)	(0.0130)	(0.0151)	(0.0190)
Mean Debt *per capita*[a]	-1.6841***	-2.5473**	-1.0222**	-0.2424*	0.2634***	-0.0606	0.0396
	(0.5964)	(1.1231)	(0.4484)	(0.1299)	(0.0825)	(0.0412)	(0.0846)
Changes of affiliation (party)[b]	0.0424	-0.1688	0.0430	0.0090	-0.0053	-0.0085	0.0049
	(0.3281)	(0.5546)	(0.2568)	(0.0666)	(0.0479)	(0.0185)	(0.0406)
Constant	5.9545***	8.9558**	7.8954***				
	(2.1806)	(4.2306)	(2.9198)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.2247	0.2247	0.2247				

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]:number of changes of political affiliation (extreme-left, left, center-left, center-right, right, extreme-right), between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses either (i) to use both in-house provision and contracts with private companies, or (ii) to use both in-house provision and contracts with public companies, or (iii) to use both private contracts and contracts with public companies. The three left-hand side columns present the coefficients of the MNL, while the four right-hand side columns display the marginal effects at mean.

Table 3.10: Additional results on ideology 3: Measuring affiliation changes (party distinction) with a dummy variable

	Private *vs.* Plural	**Public comp. *vs.* Plural**	**Public *vs.* Plural**	**Private**	**Plural**	**Public comp.**	**Public**
	Multinomial Logit (MNL)			*Marginal Effects at Mean (MEM)*			
Mean Population[a]	-0.0149**	-0.0175***	-0.0326***	0.0006	0.0036***	-0.0001	-0.0042***
	(0.0064)	(0.0058)	(0.0103)	(0.0012)	(0.0012)	(0.0002)	(0.0010)
Mean Density[a]	0.1557	0.1791**	0.0765	0.0256*	-0.0225	0.0035	-0.0066
	(0.0983)	(0.0880)	(0.1106)	(0.0131)	(0.0169)	(0.0031)	(0.0123)
Mean Unemployment[a]	0.0439	0.1549	-0.0244	0.0106	-0.0048	0.0060	-0.0118
	(0.1816)	(0.3813)	(0.1852)	(0.0313)	(0.0297)	(0.0127)	(0.0263)
Mean Income *per capita*[a]	-0.2096***	-0.6260***	-0.2774**	-0.0049	0.0439***	-0.0192	-0.0198
	(0.0744)	(0.1807)	(0.1275)	(0.0189)	(0.0128)	(0.0151)	(0.0191)
Mean Debt *per capita*[a]	-1.7526***	-2.6585**	-1.0372**	-0.2532*	0.2699***	-0.0646	0.0479
	(0.6099)	(1.1610)	(0.4535)	(0.1322)	(0.0798)	(0.0418)	(0.0872)
Change of Affiliation (party)[b]	0.5921	0.4037	0.3637	0.0947	-0.0870	0.0004	-0.0080
	(0.7457)	(1.3297)	(0.6857)	(0.1488)	(0.1079)	(0.0524)	(0.0999)
Constant	5.5171***	8.6370*	7.5735***				
	(2.1357)	(4.4451)	(2.8503)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.2272	0.2272	0.2272				

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]: dummy identifying whether there has been a change of political affiliation (extreme-left, left, center-left, center-right, right, extreme-right), between 1989 and 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses either (i) to use both in-house provision and contracts with private companies, or (ii) to use both in-house provision and contracts with public companies, or (iii) to use both private contracts and contracts with public companies. The three left-hand side columns present the coefficients of the MNL, while the four right-hand side columns display the marginal effects at mean.

Table 3.11: Additional results on ideology 4: Measuring the longevity of the left

	Private *vs.* Plural	**Public comp. *vs.* Plural**	**Public *vs.* Plural**	**Private**	**Plural**	**Public comp.**	**Public**
	Multinomial Logit (MNL)			*Marginal Effects at Mean (MEM)*			
Mean Population[a]	-0.0149**	-0.0169***	-0.0328***	0.0006	0.0036***	-0.0000	-0.0042***
	(0.0073)	(0.0055)	(0.0108)	(0.0013)	(0.0013)	(0.0001)	(0.0010)
Mean Density[a]	0.1480	0.1670*	0.0726	0.0247*	-0.0217	0.0031	-0.0061
	(0.1011)	(0.0931)	(0.1128)	(0.0130)	(0.0177)	(0.0026)	(0.0120)
Mean Unemployment[a]	0.0165	0.0960	-0.0538	0.0086	0.0003	0.0043	-0.0132
	(0.1894)	(0.3789)	(0.1912)	(0.0312)	(0.0315)	(0.0122)	(0.0252)
Mean Income *per capita*[a]	-0.1971**	-0.6665***	-0.2642**	-0.0032	0.0427***	-0.0209	-0.0185
	(0.0799)	(0.1811)	(0.1277)	(0.0198)	(0.0136)	(0.0153)	(0.0195)
Mean Debt *per capita*[a]	-1.6643***	-2.6754**	-1.0308**	-0.2345*	0.2637***	-0.0657	0.0366
	(0.6005)	(1.2023)	(0.4708)	(0.1273)	(0.0860)	(0.0415)	(0.0826)
Longevity of Left from 2010[b]	0.2452	-0.1088	0.2489	0.0334	-0.0394	-0.0125	0.0184
	(0.3042)	(0.3672)	(0.2564)	(0.0613)	(0.0460)	(0.0173)	(0.0400)
Constant	5.6322**	9.9238**	7.6428***				
	(2.2711)	(4.7897)	(2.9359)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.2287	0.2287	0.2287				

Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors clustered at the departmental level in parenthesis. [a]: mean values (2006-2010). [b]: number of consecutive left-wing mayors at office, departing from 2010. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of public services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The "plural" alternative is the base category, and corresponds to situations where the municipality chooses either (i) to use both in-house provision and contracts with private companies, or (ii) to use both in-house provision and contracts with public companies, or (iii) to use both private contracts and contracts with public companies. The three left-hand side columns present the coefficients of the MNL, while the four right-hand side columns display the marginal effects at mean.

General Conclusion

The literature in New Public Management insists on the comparability between public and private management [Savas, 1989], while other public administration scholars highlight the inherent specificities of the public sector [Ring and Perry, 1985; Boyne, 1998a, 2002]. This opposition raises two important questions: should public organizations import management rules from the private sector in order to solve their inefficiencies? What makes public and private organizations different? This dissertation proposes to build upon Ring and Perry [1985]'s argument: the authors postulate that public organizations are permeable to their political environment, and therefore cannot be compared to private firms. While this argument was elaborated more than thirty years ago, its empirical investigation is rare among public administration works. More precisely, while many studies in the public administration field have been dedicated to prove that public organizations suffer from more red tape, bureaucracy, or complex and vague goals [Boyne, 2002; Rainey and Bozeman, 2000], few scholars attempted to show that the origin of the differences between private and public managers lie in the political considerations of the latter. On that subject, a recent set of studies have investigated the differences between public and private contracting [Spiller, 2008; Moszoro et al., 2016; Beuve et al., 2014], and have proven that public contracts feature more rigid clauses than their private counterparts, because parties have to protect against additional types of hazard, which are inherent to the public nature of contracts. This dissertation

contributes to this recent literature, and shows that political factors have to be taken into account when studying the decisions of public entities. More specifically, we claim that the ideology and electoral motives of mayors have to be taken into account in order to properly study local public procurement. Chapters 1 and 2 highlight the key importance of the political sphere at two distinct phases of local procurement, that is *ex ante* (before the sourcing decision), and *ex post* (after the externalization decision). However, the results derived in Chapter 3 allow to qualify that argument, as they show that some public entities' decisions are motivated by efficiency concerns. This general conclusion first briefly summarizes the main findings of this dissertation, discusses their implications, the limitations of the results, and the areas for future research.

Summary of Main Findings and Contributions

In the first chapter of this dissertation, we focused on the influence of electoral considerations of mayors on their *ex post* management of public contracts. We proposed to test a fundamental difference between public and private arrangements: while public contract renegotiation patterns are impacted by the proximity of elections (that is, by their political environment), private renegotiations are not subject to political cycles. Our results indicate that mayors favor their personal interest (*i.e.* their political ambitions), and use contractual renegotiations to enhance their reelection perspectives. The contribution of this first chapter can therefore be summarized as follows:

Conclusion 1. *Mayors' electoral motivations have an impact on their propensity to renegotiate public contracts.*

Moreover, we highlighted in this chapter that pre-electoral renegotiations relate to the financial dimensions of the contracts; and that political competition influences the conduct of pre-electoral manipulations. This result is important, and contributes to the public administration literature in two ways. First, and to the best

of our knowledge, we are among the first to directly test Ring and Perry [1985]'s assumption, that public organizations are permeable to their political environment. We also contribute to the small but growing literature studying the differences between public and private arrangements [Beuve et al., 2014; Moszoro et al., 2016; Spiller, 2008]. More generally, we empirically demonstrate that otherwise similar arrangements differ, depending on the identity (public *versus* private) of the buyer. Our results therefore conflicts the assumptions of the New Public Management literature, as the public sector is inherently different than the private sector.

As highlighted at the end of Chapter 1, our results also points to important public policy recommendations. Since renegotiations of public agreements can relate to political manipulations, the way in which contractual renegotiations are achieved and the reasons why they occur should be made much more transparent to all the stakeholders, including citizens [Saussier and Tirole, 2015].

While the first chapter establishes evidence of political manipulations once mayors have decided to outsource a public service, it leaves unanswered the question of the influence of political motives on *ex ante* sourcing decisions. The second chapter therefore investigates this question.

In the second chapter, we study whether mayors' political affiliation impact their sourcing decisions for public services. We proposed to investigate the influence of successive mayors' political affiliation on the proportion of services that are provided in-house in a municipality. Our results highlight the importance of constructing political variables over a long period when studying sourcing decisions; we find that the extend to which local governments have been governed by left-wing mayors in the past is positively associated with the proportion of services provided in-house. The main result of this chapter can therefore be summarized in the following way:

Conclusion 2. *Successive mayors' political affiliation contribute to explain the level of in-house provision of municipalities.*

Furthermore, we showed in this chapter that the influence mayors' political affiliation on their sourcing choices is all the more important for services characterized by high degrees of resident sensitivity. We also highlighted that it is more important to measure ideology in the long run for services which are characterized by long-term contracts on the market. The results of this second chapter are important in two ways. First, it contributes to reestablish the importance of ideology variables when studying sourcing decisions for public services. We therefore contradict the results of many recent empirical studies, which consider that sourcing decisions are motivated by pragmatism, rather than by ideology [Warner and Hebdon, 2001; Bel and Fageda, 2007]. Second, because this result can contribute to explain why the externalization of public services is not steadily associated with cost decreases or performance enhancements [Boyne, 1998a; Hodge, 2000; Bel et al., 2010].

Again, the second chapter highlighted an important implication for our results. Because make-or-buy decisions are path-dependent, and since local public procurement represents large amounts of money, we claim that it is crucial to take careful decisions regarding the mode of provision of each public service.

The second chapter therefore establishes evidence of the influence of mayors' ideology on their make-or-buy decisions. However, one governance mechanisms was eluded in this chapter. We indeed considered that a municipality externalizes a public service as long as one long-term contract was concluded with a (public or private) company. Therefore, we did not investigate the specific case of plural governance.

In the third and last chapter of this dissertation, we investigated the reasons why municipalities sometimes decide to produce a portion of one public service in-house, while delegating another portion to external (public or private) companies. Chapter 2 indirectly proposes an explanation for this phenomenon. Previous chapter indeed highlights that mayors' hands can be tied by past decisions, partly because of the length of contracts. Plural governance can therefore be the result of successive decisions, made by successive mayors of different investigations. However, the existing literature also suggests that plural governance can be motivated by efficiency concerns, because it allows to decrease the transaction costs associated with externalization. Finally, plural governance can result from the existence of constraints, such as a lack of capital. The final chapter therefore opposes three sets of propositions, to investigate the factors explaining plural governance for one public service. Our results indicate that plural sourcing cannot be explained by cities' history of ideology, but is rather a strategic choice, motivated by efficiency concerns. Our main finding can therefore be summarized in the following way:

Conclusion 3. *Plural governance is motivated by efficiency concerns.*

This result is important, because it allows to qualify the findings of Chapter 2. We indeed find that some sourcing decisions are not motivated by political considerations. We suspect that, since the sector studied in this chapter is characterized by low levels of resident sensitivity, the decisions of local governments are more motivated by pragmatism than by ideology. As highlighted in this dissertation, the results of chapters 1, 2 and 3 indicate that citizens are sensitive to the price of parking (Chapter 1), and not to the governance structure of parking services (Chapters 2 and 3). Moreover, our results contribute to the literature in public administration studying plural governance; this research question being rather new in this field, as discussed in the chapter.

Limitations and Areas for Future Research

In order to conclude this dissertation, let us highlight the limitations of the empirical studies conducted through the chapters. As underlined in the concluding section of each chapter, those limitations suggest avenues for future research.

In the first chapter, we elaborated on the key importance of contractual renegotiations. The theoretical elements presented in the General Introduction also highlighted this major importance. Even if we proved that renegotiations are subject to political cycles, we were unable to assess the influence of those renegotiations on the overall surplus of the transaction. We therefore could not provide any clearcut answer to two important questions: do politically motivated renegotiations harm the relationship of the two partners? And, more importantly, do they lead to price reductions and/or quality improvement of the public service? In other words, how to they impact social surplus? Future research on those subjects would be of primary interest. In order to investigate these questions, more data is needed about the effects of renegotiations, both on the quality and on the price, but also qualitative information about the relationship between the contracting partners.

Moreover, we lack information to conduct a more in-depth study of the mechanisms leading to pre-electoral manipulations. Again, more information about the relationship between municipalities and private companies would be compelling to conduct such studies. In addition, and as highlighted in the first chapter, an investigation of the links between contractual rigidity [Spiller, 2008; Beuve et al., 2014] and renegotiations would be compelling, as it would allow to better understand the singularities of public contracting, and the links between contract design and renegotiations. This investigation would also be of primary interest to contribute to the theoretical literature on contractual incompleteness and renegotiations. Finally, a study about the influence of pre-electoral manipulations on the chances for

a mayor to be reelected would provide highly interesting insights. One could for instance investigate whether mayors who renegotiate their public contracts before local elections indeed increase their probability of being reelected.

In the second and third chapters, we highlighted some limitations linked to the lack of data regarding the sourcing decisions of municipalities. In order to complement our studies, panel data would be highly valuable. More precisely, it would not only be valuable to have information about the time decisions were taken, but also and more importantly about the precise length of each delegation contract that is concluded when a municipality decides to outsource a public service. Information about the length of contracts would allow to distinguish between the two mechanisms exposed in Chapter 2, namely the issue of contract duration and of the loss of competences linked to externalization. As highlighted in Chapter 3, panel data would allow a finer study of the plural choice by local governments. Moreover, the question of the stability of plural forms could motivate further works. However, the main limitations of the two last chapters may be that we were unable to link sourcing decision to *ex post* outcomes. Like in the first chapter, we lacked information about the prices, costs, and quality of public services to conduct such studies. More information would for instance allow to investigate whether externalizations motivated by ideology are indeed less likely to lead to cost decreases than externalizations based on pragmatism; or alternatively whether plural governance is associated with cost reductions and/or performance increases. Finally, and in general, we believe that more studies which try to link the decisions of elected mayors and their political motivations would be of primary interest.

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