

# **PUBLIC CONTRACTS AND POLITICAL CONTESTABILITY: INSIGHTS FROM FRENCH INSTITUTIONAL CATERING<sup>1</sup>**

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*Abstract:* In this paper, we compare the design of procurement contracts when the service is buy either by a private organization or a public body. We rely on a large sample of contracts from one worldwide French company in the catering sector. With the help of a data reading software and textual analysis, we collect textual data that account for contract rigidity. We find that public-to-private contracts are more rigid than private-to-private contract. Based on a subsample of public to private contracts, we also look whether contractual rigidity depends on political contestability. We find that political contestation (using several measures) influence the contractual rigidity. These results support the view that political factors are important drivers of contractual design when the buyer is a public body.

*Keywords:* Contracts, Institutional Catering, Political Oversight, Private and Public Procurement, Rigidity, Third Party Opportunism.

*JEL Classification:* D23, D72, D73, D78, H57

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# 1 INTRODUCTION

In this article, we study the impact of the very nature of public contract, characterized by public scrutiny, using a large number of contracts from one worldwide French company in the institutional catering sector. Indeed, as described by Goldsmith and Eggers (2005), “*when something goes wrong in a public sector network, it tends to end up on the front page of the newspaper, instantly transforming a management issue into a political problem*” (p. 122). Public contracts, unlike private ones, are paid by public funds and consequently are subject to public scrutiny and open to challenge by third-parties such as pressure groups. The literature distinguishes three types of third-parties: political opponents of the elected officials, pressure groups or citizens/voters who may question the right use of public money, and rival firms ousted from the public market (Spiller, 2009; Moszoro and Spiller, 2012, 2014).

This inherent difference between private and public contract prevents the possibility to use relational contracting for public-to-private contracts as a way to “*help circumvent difficulties in formal contracting*” (Baker *et al.*, 2002, p.3). The authors explain: “*a formal contract must be specified ex ante in terms that can be verified ex post by the third-parties, whereas a relational contract can be based on outcomes that are observed by only the contracting parties ex post, and also on outcomes that are prohibitively costly to specify ex ante*” (Baker *et al.*, 2002, p.3). Relational contracts, thus, involve discretion over what has to be done in *ex ante* unspecified circumstances. Although efficient in the private sector, this discretionary power by the parties is thus a potential source of third-party opportunism (TPO hereafter).

Third parties may or decide to challenge a contract signed by a public agent to question its probity and consequently damage its reputation. Challenges may either be “honest” (contestation based on facts) or purely opportunistic and motivated by a will to undermine an elected public agent (fake rumors, demonstration, etc.). To prevent themselves from the occurrence of this opportunistic behavior, farsighted public agents in charge with the contracting process will design the contract to reduce imprecisions in the interpretation of the contract or too vague provisions, in order to diminish both the impact of potential TPO and their incentive to act opportunistically (Spiller, 2009; Moszoro and Spiller, 2012, 2014). As they increase the specificity and rigidity of the contracts, the public agents diminish their own *ex post* discretionary power to adapt to changes to the benefits of a higher trust in the contracts. They arbitrate between the higher cost to specify the terms of the contract and the benefits they get by making contestations less likely.

As Laffont and Tirole (1993) and Moszoro and Spiller (2012, p.6) we refer to contract specificity as “*ex ante* complexity of subject, completeness of clauses, technical provisions, and processing costs”, and contract rigidity as “*ex post* enforcement, penalties, hardness, and intolerance to adaptation of contracts”. Both normally correlates as the more the specific a contract is, the more the variations from the contracts will be punishable in the short (fines) or long (non-renewal of the contract) run. We will then use specificity and rigidity hereinafter as interchangeable, unless specified otherwise. We assume contract specificity to be mainly a way to increase the confidence in the public-private relationship, and thus to secure both the contract and the elected body position. As we will describe in the next section, when the public agent want to increase the specificity of a contract he has to arbitrate between the positive effect on potential TPO, and the negative effect on contracting costs.

From this, we derived two testable hypotheses. First, public-to-private contracts are more rigid than private-to-private contracts for the same service. Second, comparing public contracts only, we expect the level of contract rigidity to be explained by political considerations. More precisely, public contracts should be more rigid in more politically contested environments, in order to secure the contract and the elected body’s probity.

To test these hypotheses, we collected 498 contracts from one of the main institutional catering French company. They are all the contracts signed by this company for the year 2015<sup>2</sup> dedicated to food procurement in scholar and health establishments. 252 of these contracts are public-to-private contracts and 246 are private-to-private ones. We used algorithmic data reading and textual analysis to measure the level of rigidity of a contract, and collected basic information about the contracts (client, price, volume, etc.). We also collected political data on the 2014 local elections from the French Home Office. Then, we regressed the level of rigidity of the contracts on our variables measuring political contestability as well as a set of control variables highlighted by economic literature. We find out that private contracts are less rigid than public ones, and we explain this difference of rigidity thanks to political contestation and the risk of challenge of the contract for public contracts. We also find empirical evidences that the design of public contracts are influenced by the concentration of the political power and its opposition.

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<sup>2</sup> We also have the amendments for this year, but since we do not have several years we cannot link them to previous contracts.

We think the institutional catering service, and especially scholar catering, is a nice setting to study the impact of TPO on public contract design for several reasons. Institutional catering is very well developed in France and primary schools' catering represents almost 3% of total municipal's expenses<sup>3</sup>. Since it is a service largely financed by public subsidies and to the benefits of only a part of the population, we expect this service to be particularly subject to scrutiny by third-parties. In addition, food policy, of which public food procurement is one part, has gained increasing interests in the political agenda. For instance, in the last presidential elections, all the candidates had specific programs related to institutional catering. Finally, public food procurement can have economic, social and health impacts. Focusing only on health issue, school food policy can improve child nutrition, help kids to learn healthy habits, reduce or prevent child obesity and so on. Because of their potential impact on many relevant social issues, various stakeholders such as parental associations, taxpayers or political opponents may be sensitive to school food procurement. .

The paper is organized as follow. In section 2, we present the economic literature on contractual issues. In section 3, we develop our hypotheses based on the economic model of Moszoro and Spiller (2012). In section 4, we present the data and the empirical strategy. We present the results in section 5, and offer limitations and prospective researches in section 6.

## **2 CONTRACTUAL DESIGN IN PUBLIC CONTRACTS**

The economics of contract has been booming over the last thirty years. The fact that many (if not most) of the market transactions between private firms do not take place in arms' length spot market but are governed by long or short-term formal contracts is nowadays well established in economics. Theoretical as well as empirical analysis focused on various issues such as the design of contract (see for Bolton and Dewatripont, 2005, for the theory side and Lafontaine and Slade, 2013, for a recent survey of empirical works), the effect of contracts on outcomes such as price, sales or firm survival, the extent of vertical integration (Tadelis and Williamson, 2013). Most of this literature assumes, that private parties seek to design contracts

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<sup>3</sup> With 180 days of school a year (<http://eduscol.education.fr>), 60% of the 6 760 600 pupils (<http://www.education.gouv.fr>), for a cost per meal between 6 and 8 €, municipal school canteens for the 5 to 10 years old accounts for 2 to 2.6% of the 220 billion spent each year by municipalities (<http://www.collectivites-locales.gouv.fr>). To be noted that we use the budget for every French municipality, whether they have schools, and thus scholar catering, or not. The part of expenses for municipalities with scholar catering is consequently much higher.

in order to maximize the value of trade, the implicit assumption being that inefficient contractual relations will be kick out thanks to competitive pressure and selection.

In contrast, contracts between public and private parties is often seen as rigid, highly bureaucratic and inefficient (Spiller, 2009). Contracting decision with public partners is probably more political as public agents may be less concerned with efficiency of the relation and more about others dimensions of social welfare or strictly political considerations. For instance, the empirical literature on the choice between internalizing versus outsourcing the provision of public services emphasize the role of political factors (Bel and Fageda, 2007, Sundell et al., 2012). Political considerations are often considered by economists as a way to account for the ideology or opportunism of the public agents. In the first case, ideological factors are supposed to partly explain the decisions of public agents to organize the provision of public services. To put it sharply, left-oriented political actors should favor in-house procurement while more right-wings party should prefer delegation (Bel and Fageda, 2007; Dubin and Navarro, 1988; González-Gómez *et al.*, 2011; Sundell *et al.*, 2012). In the second case, it is claimed that political agents can act opportunistically *vis-à-vis* private firms. For instance, in sectors with large investments such as network industries (water, electricity, and telecommunication), private firms fear opportunistic renegotiations by the government or administrative expropriations that would reduce the expected returns on these investments. Some regulatory procedures are thus seen as a way for the public party to credibly commit not to expropriate private investments (Levy and Spiller, 1994). Some also focus on political cycle such as Le Squeren and Moore (2015) whose paper suggests a political cycle of governmental renegotiation of public-private contracts, with a higher rate of renegotiations before elections. A more recent literature explains some features of public contracts as a way to prevent opportunistic behavior by third-parties, namely parties that are not directly part of the contractual negotiation process but who may have a stake in the contract implementation. (Spiller, 2009; Moszoro and Spiller, 2012, 2014).

Due to the use of public money, public-to-private contracts differ from private-to-private contracts as they are subject to public scrutiny by citizens, media, or political opposition (Ring and Perry, 1985; Spiller, 2009). Not all of these scrutinizers have an interest in the good execution of the contract. Some political opponents – elected bodies or citizens – may create contestations about the probity or efficiency of the contract, either to obtain what they consider to be a better contract, or to diminish the trust in the public agent in office by questioning or

contesting the unspecified part of the contract and more generally the probity of the public agents in office.

Examples of third party opportunism are numerous. Many laws in every countries have been modified under the pressure of citizens or lobbies. Some infrastructure projects are doomed or delayed due to local contestation such as Notre-Dame-des-Landes' airport in France, XXL Keystone in the USA. More specifically on public contracts, Beuve *et al.* (2016) illustrate this with the renegotiation of a public car park in Saint-Etienne, France, that led to a great contestation at the city council with political opponents declaring that the contract was “either a gift or poorly negotiated”. Finally, and more directly related to our empirical analysis, the French institutional catering sector faces the same contestations and public scrutiny, if not more. Food and more broadly French gastronomic culture carries in France important social and cultural values as most people see it as part of the national identity. With respect to kids feeding, school lunch makes a substantial contribution to children's nutritional intakes. In addition, school lunches provide a good opportunity to learn healthy food habits at a young age that might have positive health effects in the long run. For instance, in a recent documentary, Michael Moore (2016) contrasts the quality of meal in French and US schools and stresses the good food habits developed in French school canteens.<sup>4</sup> Some powerful third-parties such as parental associations also try to influence public school catering. For instance, in Paris, the city council recently tried to restructure the school catering service. Unsatisfied with the proposal, some citizens created a website to oppose this reform that, according to them would lead to more uncertainty on several dimensions of the quality of the food, the price<sup>5</sup>. The reform has finally be postponed. More broadly, the defiance toward the food industry accused to “cook horses for beef” increases the scrutiny of the citizens with regard to food. This is especially true when it comes to kids meals<sup>6</sup>.

Since elected bodies may face defiance and contestation, they have to adapt the contract design in order to mitigate this potential contestation and increase the trust toward their decisions. Public body will respond to this threat by asking for additional contractual

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<sup>4</sup> At the same time, many documentaries show on French channels focused on school and hospital catering to show that the objectives of some contracts were not always fulfilled on diverse goal such as the quality of supply, the taste, the weight of bread, the diversity of the diet, the room for “home-made meals”, the costs and origins of ingredients, etc. (France 5, 2016; Capital, 2015, 2015; Arte, 2016).

<sup>5</sup> <http://sauvemacantine.fr>

<sup>6</sup> For instance, for the Frenches schools are the first place where to increase the proportion of organic food (Agence Bio, 2016).

specifications during the negotiations with private suppliers. The goal is to reduce the set of unspecified or mis-specified contractual terms that opportunistic third parties might use in order to challenge the probity of the public actors in charge<sup>7</sup>.

### **3 THEORETICAL ANALYSIS**

#### **3.1 PUBLIC CONTRACT RIGIDITY: THE MODEL**

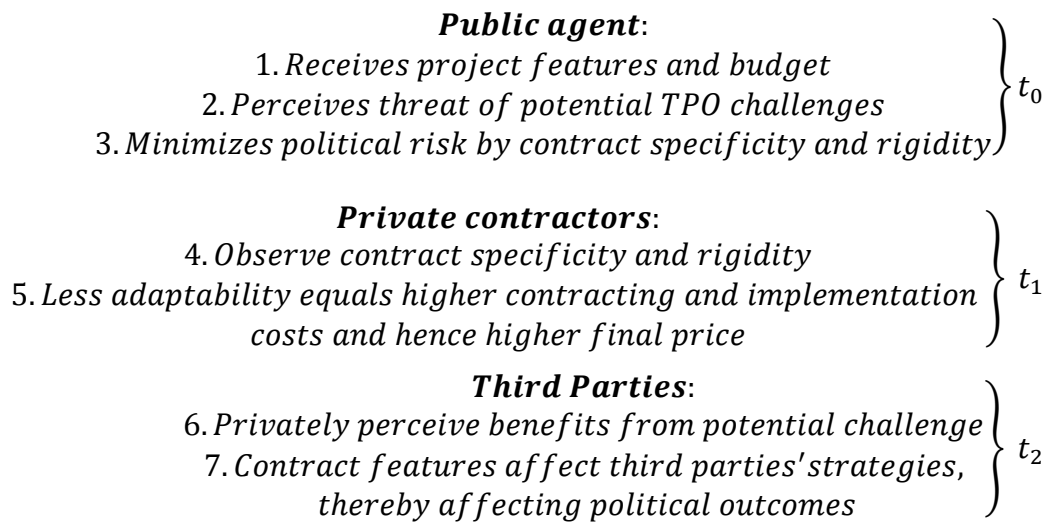
To analyze the potential impact of third parties on the design of public-private contracts, we rely on the model of Moszoro and Spiller (2012). Their model assume a three steps procedure for public contracts (Figure 1). First, the Public agent chooses the level of contract rigidity, anticipating the threat of potential TPO challenges. In response to that level of rigidity, the private contractors adapts his auction price. The price increases with the level of rigidity, as it means more implementation and negotiation costs. Indeed, contracts are negotiated to know if the private partner can comply with the wishes of the public agent, and to define the price accordingly. Moreover, for each extra level of specificity in the contract, there are additional control and implementation costs to assess compliance with the contractual provisions. Finally, third parties perceive expected potential benefits from a challenge and decide or not to challenge the contract. If they challenge the contract, there will be a negative political impact on the Public agent's probity or reputation that threatens her re-election.

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<sup>7</sup> During some interviews with manager of the private suppliers, they even declared that some municipalities were blacklisted due to the extreme degree of completeness of the contract they ask for, leading to financial losses for the private operator.

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**FIGURE 1: TIMING OF THE MODEL**



*Source: Moszoro and Spiller, 2012, pp. 6*

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This model implies a trade-off for the public body in charge with public contracting between the risks of third-party opportunism and contracting costs (that encompasses writing, implementation, negotiation, and adaptation costs). On the one hand, she can reduce the level of specificity to rely more on informal adaptations when unexpected events or misinterpretations occurs. This diminishes consequently the contracting costs and smoother the public-private relationship. On the other hand, when the level of specificity diminishes, third parties are more able to question the good faith of contracts as the elected body has more discretionary power in the contractual implementation. Thus, the risk of third-party opportunism increases with less rigid contracts. Public agents have to choose the optimal level of rigidity,  $R$ , by arbitrating between contracting costs  $K$  (that increases with  $R$ ) and political costs  $P$  (that decreases with  $R$ ) to minimize total expected costs:

$$\min_R P(R) + K(R)$$

Political costs,  $P$ , are the costs  $T_0$  supported by the public agent if a challenge by third parties succeeds, such as not being reelected in the next elections or even legal expenses in case of trials. Political costs have to be weighted by the likelihood of a challenge by third-parties to happen,  $\rho$ , and the likelihood of this challenge to succeed,  $\tau$ , that both decrease when rigidity increases. Political costs are thus:



$$P(R) = T_0\rho(R)\tau(R)$$

On their side, third-parties observe their randomly normally distributed overall benefits,  $\widetilde{T}_0$ , from challenging the contract, and compared it with litigation costs,  $c$ , to decide to act opportunistically or not. Litigation costs increase necessarily with  $R$  as the more detailed a contract is, the more difficult it is to prove that something is going wrong with its implementation without the political body to know it and fix it before the challenge. The overall benefits are, however, weighted by the likelihood of this challenge to succeed  $\tau$ , and by a political structure parameter,  $\zeta \in ]0, 1]$ , that accounts for political opposition atomization. Indeed, if the political opposition is fragmented, then benefits from a challenge can go to any of the political competitors, not necessarily to the challenger who will bear the litigation costs. Then,  $\zeta = 1$  for symmetrical Bertrand duopolies (one's losses, the other one's gains),  $\zeta < 1$  for oligopolies, and  $\zeta \approx 0$  for "perfect political competition" with no incentives for a third party to challenge the contract at all. The likelihood of a challenge by third parties is thus:

$$\rho = \Pr[\widetilde{T}_0\zeta\tau(R) > c(R)]$$

Consequently, the equilibrium is:

$$R^* = \arg \min_R T_0\rho(R)\tau(R) + K(R) \quad [1]$$

$$\rho^* = \Pr[\widetilde{T}_0\zeta\tau(R^*) > c(R^*)] \quad [2]$$

Any deviation from the equilibrium makes the public agents worse off:

1. If  $R < R^*$ , then  $\tau(R) > \tau(R^*)$ ,  $c(R) < c(R^*)$ , therefore  $\rho > \rho^*$  and  $T_0\rho(R)\tau(R) - T_0\rho(R^*)\tau(R^*) > K(R^*) - K(R)$ , meaning that the gains in contracting costs are offset by the increase in political costs;
2. If  $R > R^*$ , then  $\tau(R) < \tau(R^*)$ ,  $c(R) > c(R^*)$ , therefore  $\rho < \rho^*$  and  $T_0\rho(R)\tau(R) - T_0\rho(R^*)\tau(R^*) < K(R^*) - K(R)$ , meaning that the gains in political costs are offset by the increase in contracting costs.

### 3.2 PUBLIC CONTRACT RIGIDITY: THE HYPOTHESES

We argue that the model described above respect the timing of public contracting for institutional catering. First, the public body makes an auction to provide meals and adapts the clauses thanks to observations of the political opponents and citizen's demands. Then, private contractors observe the required targets of the municipality, and hence adapt their auction price.

One firm wins the public auction, and the contract is implemented. Finally, parents, tax-payers, and political opponents observe the implementation of the contract, and decide to contest it or not depending on their expected gain.

We showed that the level of rigidity of a contract depends on a trade-off between political and contracting costs (equation [1]). Therefore, in the absence of political costs, which we assume to be the case for private-to-private contracts, the optimal level of rigidity should be lower. We can then state the following hypothesis:

**Hypothesis 1**            The optimal level of rigidity is lower in the absence of political costs. Thus, public-to-private contracts are more rigid than private-to-private contracts.

Moreover, third-parties decide to challenge a contract or not depending on expected benefits from contestation. These benefits depend on the overall benefits  $\tilde{T}_0$  that the political opponents may expect and on the number of political opponents ( $\zeta$ ). When overall benefits from contestation,  $\tilde{T}_0$ , are high, then the likelihood of a challenge,  $\rho$ , is high as well. Consequently, the optimal level of rigidity should be high too. In the same way, when potential benefits from a challenge are not shared (high political contestable market,  $\zeta$ ), then the likelihood of a challenge increases since all the benefits goes to the challenger. Thus, we can test the two following hypotheses:

**Hypothesis 2**            When the benefits from a challenge are high (high  $\tilde{T}_0$ ), the optimal level of rigidity is high too. Therefore, the impact of political challenge differs depending on the type of clauses in the public contracts. The rigidity is higher on more “touchy” clauses.

Concretely, clauses that accounts for health and environmental issues shall be more rigid for public than private contracts, while others more practical shall be as rigid whatever the nature of the client.

**Hypothesis 3**            In contestable political markets (high  $\zeta$ ), the optimal level of rigidity is higher than in lower contestable political markets. Therefore, when the political opposition is highly atomized, the risks of a challenge decrease, and so does the level of rigidity.

## 4 EMPIRICAL ANALYSIS

### 4.1 SECTOR AND CONTRACT CHARACTERISTICS

For the year considered, our company has signed 500 contracts with French institutional clients in the educational and health sectors. 255 (51%) are made with private clients, and 245 (49%) are made with public clients. The contracts are distributed in 396 cities. 325 cities have only one contract, 52 have two contracts, eight have three contracts, the same number of cities has four contracts, and three cities have five. We do not find any differences in the descriptive statistics between cities with only one contract and those with several contracts (Annex 1). There is 631 clients since a contract can be made with several institutional clients. For instance, a contract may gather several public entities in a municipality (Nursery, School, Middle School, Home Retirement, and Home Delivery) in order to benefits from a greater bargaining power, economies of scale, and thus a lower price. The public entities gathered in a contract are not necessarily managed at the same political level (Municipality, Department, Region, and State). 74 contracts are multi-clients ranged from 2 (62%) to 5 (4%) clients, with a mean of 2.53 clients per contract. 59 of those multi-clients contracts are in public sector (80%) and 15 in the private one (20%). We also notice that schools are in 86% of those contracts. Moreover, all the public multi-clients' contracts are made with a municipality. That is normal as they are the only one to manage several institutional catering such as the nursery, the school, the home retirement, the home delivery, and holiday's facilities.

For the whole sample, the educational sector is composed of 77 nursery (15.4% of total contracts<sup>8</sup>), 172 schools (34.4%), 30 middle schools (6%), 34 high schools (6.8%), and 143 holidays facilities (28.6%), being 456 clients (74.4% of total clients). The health sector is composed of 61 retirement houses (12.2% of total contracts), 55 home delivery institutions (11%), and 18 hospitals (3.6%), being 134 clients (21.9% of total clients). Finally, we have 23 other clients (4.6% of total contracts, and 3.8% of total clients).

In France, education is compulsory from the age of 6 to 16 but a large majority of children starts school before the minimum age (and over 50 % of 18-21 are still in fulltime education). There are four different types of schools (or layers of the educational system) taken by age of

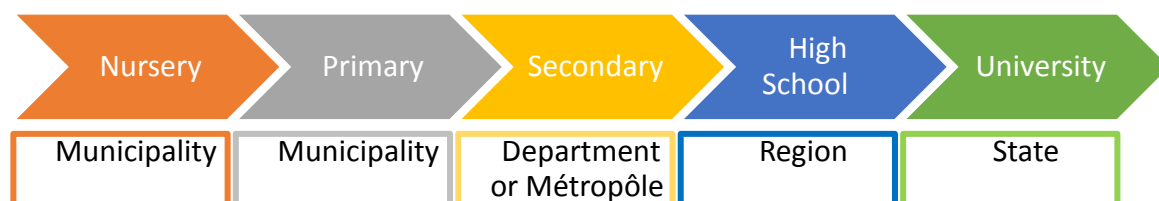
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<sup>8</sup> As we have 613 clients for 500 contracts, the sum of the percent of clients over total contracts will be more than 100%.

pupils before going to higher education. Each types of public school is under the responsibility of a particular layer of the public administration:<sup>9</sup> (i) kindergarten (or pre-school – *école maternelle*) takes pupils from the age of 2 (or 3) to six; (ii) primary schools (*école primaire*) from the age of 6 to 11; (iii) middle school (*collège*) normally for pupils aged 11-15; (iv) high school (*lycée*) which covers the last three years of secondary education (up to 18 years old). The first two layers are under the responsibility of the municipalities and denominated by school, middle schools are managed at the department level while high school are managed at the regional level (Figure 2).<sup>10</sup> In 2014-2015, there was 12.775.400 children attending the school system (17% in private schools, the rest in the public system) in 63.600 schools at all layers (Ministry of Education). The annual budget of the Ministry of Education was 146 billion Euros in 2014, the largest ministry budget.

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**FIGURE 2: ORGANIZATION OF PUBLIC SCHOLAR CATERING**



*Sources: French Code of Education, articles R. 531-52 and R. 531-53.*

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For the public schools that fall under their jurisdiction, municipalities are compelled to provide a lunch for pupils attending their schools. Thus, 63% of children before 10 eat at school at least once a week, as well as 69% of the teens (ANSES, 2006-2007), for an annual turnover of 17 billion euros and 3 billion meals served (DRAAF Rhône-Alpes, 2012). The turnover benefits lately from the aging population and strong French natality, as it increases the demand.

The provision of meals by public schools under the responsibility of municipalities is organized in two different ways: in-house procurement and contracting-out. In the “in-house”

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<sup>9</sup> Beyond the national state, there are three layers of public administration: cities, departments and regions. Each of this layer has particular competences that do not overlap. There are elections for each of this layer.

<sup>10</sup> Here, we speak only of public schools. Parents can choose to send their children to private schools as well. The private system also covers the four stages.

situation meals are prepared in facilities owned by the city (even if the procurement of raw ingredients is through public markets) while in the outsourcing scenario, the municipality delegates to a private contract the task of preparing the meals. According to the IGD (2015), at the national level and based on a survey of cities of a size above 40,000 inhabitants 65% is in-house, 26% delegated, and the rest (9%) is a mixed of both. However those numbers are only on few major cities, and the author notes that the percentage of contracting-out increases for smaller cities. We have showed in chapter 1 that in the “Paris area” (*i.e.* Paris and its suburbs) the delegation represents 65% of the school catering service. About half of the meals are provided internally for hospitals and elderlies’ facilities (Gira FoodService, 2014). Public hospitals are managed by the State, while public elderlies’ facilities are managed by municipalities.

In France, food is an important matter, especially for the children. That is why there have been several legal rules to regulate various dimensions of the quality of the meals provided to kids the last 20 years, in particular about conception, certification, diet, organic and local supply, and sustainable development, some of the topics we focus on in this chapter (see 4.3 Table 1). In 2001, the French government decides to regulate the food portions served to the children, as well as the total nutrients in a meal, or the maximum frequency of fried products a year (circular 200-118). This process was included in a more global fight against increasing child overweight that strikes France<sup>11</sup>. Since that circular, there have been other rules to regulate the environmental quality of the supply, as well as the quantity of organic food served (Grenelle I and II, 2008-2009, Law “Manger local”, 2016). Furthermore, the quality of the food and the supply was part of the 2017 debate for French presidency<sup>12</sup>, as a response to the desire for more “sustainable” food (Agence Bio, 2016). Still, the client cannot observe the characteristics of the ingredients. She has to trust the delivery coupons, which are sometimes wrong or vague<sup>13</sup>. Controls over meals’ quality have then to be frequent, unexpected, and on every item and dimension.

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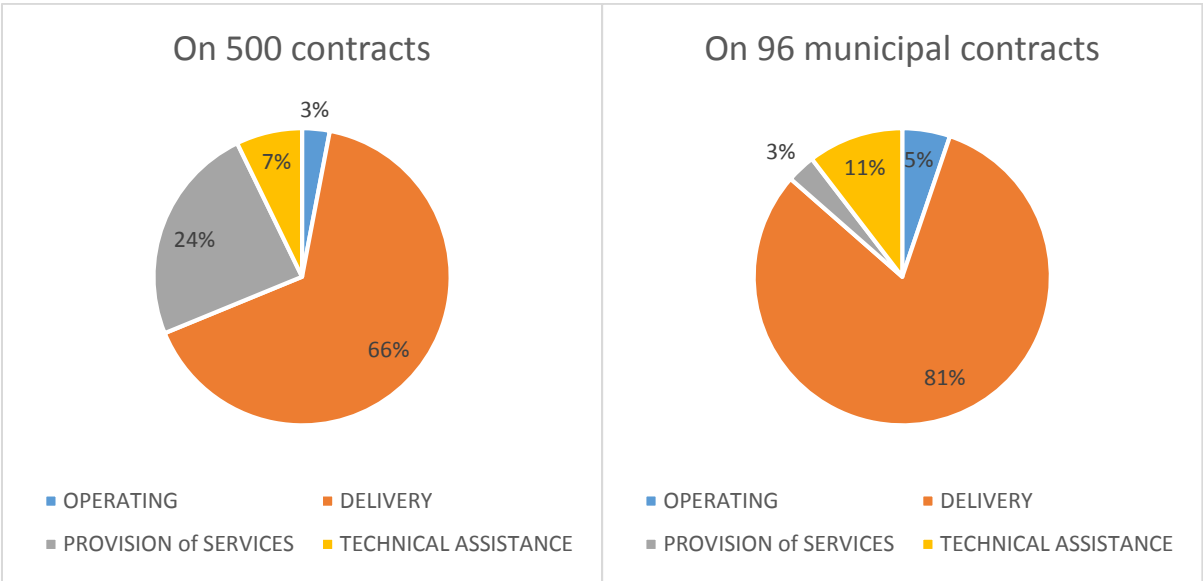
<sup>11</sup> From 5% in 1980, to 16% in 2010, and 12% in 1996 (PNNS).

<sup>12</sup> The ecologic party is for 100% organic food at school, the challenger Emmanuel Macron asked for 50% of organic food, and the extreme-right Marine Le Pen wants to increase the part of local food.

<sup>13</sup> The origin of the product is sometimes the place where is located the wholesaler and not the production. Frozen vegetables are used instead of fresh vegetables. Quantities of salt and additives are unknown. And many other examples are given concerning issues about non-observable quality. Several TV reports show examples of misbehaviors by private providers.

The sector is characterized by the existence of four main contractual arrangements once the city has decided to contract out the provision of the service: “delivery”, “operating”, “provision of services”, and “technical assistance” contracts. To tackle the issue of the impact of political contestation on public contracts, we select a sample with 96 municipal contracts. Figure 3 shows the repartition of the type of contracts in our whole sample and the municipal subsample.

**FIGURE 3: REPARTITION OF THE TYPE OF CONTRACT IN OUR SAMPLES**



*Delivery Contracts:* Some client have all the facilities to re-heat and serve the meals. They only buy the meals to be served and choose its composition. The client bears the demand risk as she ordered and pay the meals before knowing the quantity finally needed. The contract’s duration is generally one year renewable three times for public customer or unlimited duration for private contracts.

*Operating Contracts:* When the catering facilities are already built and requires investments to renovate and maintain, operating contracts are used. The company is the one to exploit the facilities, cook and eventually re-heat the meals for the users. These contracts are no necessarily longer than delivery contracts (an average of 3.8 years in our dataset), but can go up to 7 years in our dataset. Unlike delivery contracts, the operator bears the demand risk and is remunerated with user fees.

*Provision of Services Contracts:* Those contracts are used for punctual demand such as holidays child care for client that have no facilities. The service is delivered all-inclusive. Unlike delivery contracts, the client does not choose the meals, which only need to meet the legal standards.

*Technical Assistance Contracts:* Those contracts are made to help the client to move upmarket, or improve the quality of its supply and meals. They may be used to “rent” a chief, or the service of an expert in supply.

## **4.2 POLITICAL DATA**

We also gathered political data from the municipal elections in March 2014 (sources: French Home Ministry) to build our set of political explanatory factors. The contracts have then all been signed and contracted by the new 2014 municipal majority. Elections at the municipal level take place usually every six years<sup>14</sup>. French electoral law disentangles two voting systems depending on the size of the municipalities. For cities above 1,000 inhabitants (89.2% in our sample), the voting system is a list system. After the first round, if a list got at least 50% of the vote and 25% of the potential voters then this winning list gets 50% of the seats and the rest is shared proportionally with all the candidates above 5%. If no list reaches the 50% threshold in the first round, then there is a second round. The lists above 10% in the first round can maintain to the second one. The lists above 5% can merge with another list above 10% for the second round. After the second turn, the first list gets 50% of the seats and the rest is shared proportionally with all the candidates above 5%, including the majority list. Under 1,000 inhabitants (54 in our sample), the voting system is a split voting system. A voter chooses to vote for or against every candidate at the city council. Then, the candidate with the more votes is elected at the city council, the second one as well, and so on until all the seats are assigned to someone. The city council elects a mayor among the city councilors. Then, the elected city council decides of local taxes, organization of public services, including the governance of municipal canteens, the price of the meals, the frequency of the meals, the composition of the meals, etc.

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<sup>14</sup> Municipal election in 2008 were organized seven years after the 2001 municipal election in order not to be the same year than the 2007 presidential election. Moreover, if a mayor dies or quit then new municipal election will be organized. However, the new mayor will be elected only to the next national day of municipal election and not for six years.

## 4.3 EMPIRICAL STRATEGY

### *DEPENDENT VARIABLES*

Our dependent variables accounts for the level of rigidity of a contract. However, there exists several dimensions of rigidity (Battigalli and Maggi, 2002; Schwartz and Watson, 2012; Beuve *et al.*, 2016). With the help of the lawyers of the firm that provides the data, we selected rigidity dimensions that are relevant to the institutional catering context, and we built “dictionaries” (Table 1). Then, we machine-read the contracts to count the level of rigidity for each contract and category, looking for the words and their derivation (see Table 1)<sup>15</sup>.

Our theoretical framework suggests that each type of rigidity decreases the room for a challenge by third parties, as the words to account for rigidity specify a little bit more the respective obligations of the contracting parties, and thus, make it harder for third parties to take advantage of the “shadow area” of the contract. Then, the higher the number of words accounting for rigidity there are, the lower is the expected benefits from a challenge by third parties.

Arbitration clauses are meant to arbitrate litigations by letting first the court aside. Certification clauses regulate the contractor to verify that he has the sanitarian certification to cook, deliver, and do any other task demanded in the contract<sup>16</sup>. Evaluation clauses control the right delivery of the service. Litigation clauses indicates the cases for legal suits. Penalties describe the sanctions toward the contractor if she does not fulfill her contractual requirements. Termination clauses frame termination of the contract before the contracted initial term. Contingencies clauses anticipate potential unpredicted event and how to handle them in the contract. Conception clauses describe service features. Sustainable Development account for clauses dedicated to environmental protection. Organic and local clauses stand for the quality of the food and the supply. Finally, health clauses stand for hygienic and dietary rules<sup>17</sup>.

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<sup>15</sup> For instance, we looked for ‘termination’, but also for ‘terminate’, ‘terminated’, etc.

<sup>16</sup> There exists many certifications needed to work in institutional catering. For instance, to be certified that the firm can cook organic food, or that it can deliver hot meals, and cold meals, and can conserve them, or is authorized to compost them, etc. Certifications may also be about job conditions, the weight of plates, the energy used, etc.

<sup>17</sup> If hygienic standards are necessary to cook for institutional catering, the client may add controls from a specialized and independent firm and ask for additional controls (such as to keep a blank sample in case of intestinal flu) in the contract.



**TABLE 1: CONTRACT RIGIDITY CATEGORIES**

<i>Clauses</i>	<i>Dictionary</i>	<i>Occurrences</i>
Arbitration	guarantee, intervention, resolution, mediation, settlement, clause, given that, whereas, warranty, contradictory, justification, responsibility	5,231
Certification	certification, rule, regulation, permit	2,037
Evaluation	control, commitment, obligation, quality <sup>18</sup> , specification, responsibility, inspection, report, safety, GEMRCN, certify, lab, process	5,302
Litigation	court, dispute, indictment, jury, lawsuit, litigation, pleading, prosecution, trial	9,918
Penalties	Damage, fine, compensation, allowance, penalty, sanction	2,059
Termination	abuse, rupture, end, termination, unilateral, cessation	4,588
Contingencies	contingent, if, provided that, subject to, in case, whenever, whether	16,775
Conception	waiting, event, program, project, menu commission, menu, delivery, maintenance, service's rules	11,144
Sustainable Development	sustainable development, carbon footprint, label, season, waste, recycling, conditioning, Grenelle, environment, wrapping, sustainability, supply mode	3,811
Organic	organic, certified organic	794
Local	local food, local products, proximity, kilometers, short supply chain	483
Health	salubrious, microbiologic, analysis, salt, texture, fat level, temperature, cold, hygiene, blank sample, cold delivery, hot delivery	7,400
<b><i>Total number of words categorized in the contracts</i></b>		<b>69,542</b>

Due to differences in the topic they encompass, we expect clauses to be more or less subject to public scrutiny and contestation. We assume that sensitive or “touchy” clauses

<sup>18</sup> We take off the expression with our words but unlinked to our matter, such as “in quality of”.

concern the quality of the food in its several dimensions: Conception, Certification, Health, Organic, Local, and Sustainable Development. Conception, Certification, and Health gathers concerns about the sanitarian issues in institutional catering. Local and Sustainable Development are concerns about the environment and the economy. While Organic is crosswise.

As Beuve *et al.* (2016), we use the normalized frequencies of word categories (i.e., z-values) to measure the degree of difference between contracts:

$$zClauses = \frac{Clauses - \mu}{\sigma}$$

with  $\mu$  the mean and  $\sigma$  the standard deviation of the count of *Clauses* words across all contracts.

This gives us a global rigidity measure:

$$\begin{aligned} zRigidity &= \sum zClauses \\ &= zArbitration + zCertification + zEvaluation + zLitigation \\ &\quad + zPenalties + zTermination + zContingencies + zConception \\ &\quad + zSustainable + zOrganic + zLocal + zHealth \end{aligned}$$

## ***PUBLIC VERSUS PRIVATE CONTRACTS***

We created a dummy variable *Private<sub>i</sub>* that equals 1 for private-to-private contracts, and 0 for public-to-private contracts.

## ***POLITICAL CONTESTABILITY***

To account for political contestability, and its atomization, we define different variables that refers to the concentration of the local political market. First, we define the Herfindahl-Hirschman Index *HHI* as follows:

$$HHI_i = A_i^2 + B_i^2 + C_i^2 + D_i^2 + \dots$$

Where  $A_i$  is the vote share of the first candidate at the municipal election  $i$  in 2014<sup>19</sup>,  $B_i$  is the vote share of the second candidate, etc. The Herfindahl-Hirschman Index accounts for the concentration of the political supply. The larger it is, the more the political power is

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<sup>19</sup> We will consider *HHI* calculated on the round of election, and *HHI 2<sup>nd</sup> round* calculated on the second round if any.

concentrated. We should then observe a negative sign of its coefficient on rigidity. Indeed, let's take two cities 1 and 2, for which we have the following electoral results:  $A_1 = .8$ ,  $B_1 = .1$ ,  $C_1 = .05$ ,  $D_1 = .05$ , and  $A_2 = .5$ ,  $B_2 = .3$ ,  $C_2 = .1$ ,  $D_2 = .1$ . We calculate  $HHI_1 = 1.15$  and  $HHI_2 = .36$ . Then, the more concentrated the political power is, the largest the HHI is, and the lowest the risk of political contestation will be, and consequently the lowest the rigidity of the contract will be as well.

With the same variables, we also define the Residual Herfindahl-Hirschman Index:

$$ResidualHHI_{i,t} = \frac{B_{i,t}^2 + C_{i,t}^2 + D_{i,t}^2 + \dots}{1 - A_{i,t}^2}$$

Unlike the HHI, the ResidualHHI measure the concentration of the political opposition. We shall then observe a positive impact on the rigidity. Let's take our two cities 1 and 2 above, and the city 3 which have the following results:  $A_3 = .5$ ,  $B_3 = .4$ ,  $C_3 = .05$ ,  $D_3 = .05$ . We calculate  $ResidualHHI_1 = .04$ ,  $ResidualHHI_2 = .147$  and  $ResidualHHI_3 = .22$ . We see that the more concentrated the political opposition is (city 3), the largest the ResidualHHI will be, and the highest the rigidity is expected to be.

In order to measure the strength of the political opposition, we also add the variables *NumberList<sub>i,t</sub>* and *SquareNumberList<sub>i,t</sub>* to take into account the number of lists in competition and a supposedly non-linear effect of the number of lists on rigidity. Indeed, large number of lists may increase the strength of the opposition, but will eventually make it inaudible.

Finally, we expect a difference in rigidity between mayor elected with a large margin and mayor elected on the edge. The last one will be more subject to challenges and will, thus, increase the level of rigidity of contracts. We then introduce the variables *Margin<sub>i</sub>* and *Margin<sub>i</sub><sup>2</sup>* for the difference between the winning list and the runner-up party, and a potential non-linear effect. Indeed, the mayor will be concerned if the margin of victory is low, but less if she is elected hands down.

## **CONTROL VARIABLES**

We expressed the variables we are interested in testing, but some other variables need to be taken into account as they may also influence the rigidity of contracts. First, if the final goods (the meals) served are pretty homogeneous products, the contracts differ in their level of investment, depending on the existing facilities. Consequently the service with more investments might be more rigid as the investments made by the supplier need to be secured in

order to avoid or mitigate hold up issues. Then, we create the following dummies from the highest level of investment to the lowest: *OPERATING<sub>i</sub>* (mean of *zRigidity* = 20.17), *DELIVERY<sub>i</sub>* (mean of *zRigidity* = -0.61), *PROVISIONofSERVICES<sub>i</sub>* (mean of *zRigidity* = -1.39), and *TECHNICALASSISTANCE<sub>i</sub>* (mean of *zRigidity* = 1.84).

Second, the users of the catering service do not all have the same demands. For instance school canteens and retirement homes have different requirements over a range of issues such as environmental concerns, health, sanitary precautions or quality of the delivered product. Parental associations may push towards the procurement of more pesticide-free or organic products, etc. whereas retirement homes are more careful about the texture of the food, and quantities of salt or fat. These differences imply different kind of investments on the supply chain, the cooking facilities, which means different ways to monitor the contract, and thus, different level of rigidities. Indeed, a school will ask for specific needs toward organic food for instance, making the level of rigidity on this subject higher. On the contrary, a hospital will insist on differentiated meals for their patients with different diseases, but will care less about organic food as patients eat only few days at the hospital and are not to be retained customers. We have then the following variables: *NURSERY<sub>i</sub>*, *SCHOOL<sub>i</sub>*, *HIGHSCHOOL<sub>i</sub>*, *RETIREMENT<sub>i</sub>*, *HOSPITAL<sub>i</sub>*, *HOLLIDAYS<sub>i</sub>*, and *HOMEDELIVERY<sub>i</sub>*. We also control for interactions with a variable that stands for the number of different users of the service, *USERS<sub>i</sub>*.

As highlighted in the model, we expect rigidity to increase with the potential benefits from political contestation. Those benefits from political contestation depend on the number of citizens concerned by the service and on the level of public expenses engaged in the contract. We, thus, expect that the larger the size of the contract (measured as number of meals) and the lengthier it lasts, the higher the expected gain from political contestation are. To tackle this issue, we introduce variables to control for the number of meals per day *MEALS<sub>i</sub>*, and the duration of the contract *DURATION<sub>i</sub>*. We also add the variable *POPULATION<sub>i</sub>*, for the numbers of inhabitants in the city, to control for political benefits for a party at the national level. Indeed, larger cities are more scrutinized at the national level when election comes, as they are considered as a political laboratory or showcase.

We also control for the political color of the mayor. Indeed, left mayors are less prone to externalize the school canteen service (see chapter 1), so if they contract out a catering service they might also increase the specificity of the contract to balance the negative impact on their voters. Then, we add two dummies for the left, *LEFT<sub>i</sub>*, and the right parties, *RIGHT<sub>i</sub>*.

In order to control for a signal from the municipality on environmental issues, and quality and supply of the food, we add the dummy variable  $AGENDA21_i$  for the presence of an Agenda 21 in the municipality<sup>20</sup>. We expect a negative effect of this variable on rigidity of public contracts. However, it might also impact positively the clauses about environmental issues if it accounts more for the sensitivity of the citizen for environmental issues than for a signal of the mayor's commitment toward environmentally-friendly practices.

Finally, rigidity can change because of previous business relations with a given city. This might lead to the development of trust among the parties, better knowledge of the local needs for the private firms through learning-by-doing. If partners renew a contract, we expect them to trust each other more than for the first contract signed. Then, they might diminish the rigidity of the contract. We control for the renewal of the contract, with the dummy  $RENEWAL_i$ .

### ***IDENTIFICATION STRATEGY***

To test our hypotheses we need to use different models. First, we want to compare the level of rigidity of public-to-private and private-to-private contracts with the following models (Hypothesis 1):

$$zClauses_i = Private_i + X_i + \varepsilon_t$$

$$zRigidity_i = Private_i + X_i + \varepsilon_t$$

With  $zClauses_i$  and  $zRigidity_i$ , being the variables of rigidity described in section 4.3.1.,  $Private_i$  being the dummy variable for private-to-private contracts (section 4.3.2.),  $X_i$  being the set of control variables describe in section 4.3.4., and  $\varepsilon_t$  the error term.

To test the impact of political contestability on the rigidity of contracts (Hypothesis 3), we use the following models on the subsample of public-to-private contracts:

$$zClauses_i = PC_i + X_i + \nu_t$$

$$zRigidity_i = PC_i + X_i + \nu_t$$

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<sup>20</sup> An Agenda 21 is a chart voted by the municipality that engages it in an environmental saving process. It engages the administration, the citizens, and the majority in place.

With  $zClauses_i$  and  $zRigidity_i$ , being the variables of rigidity described in section 4.3.1.,  $PC_i$  being a set of variables for political contestability (section 4.3.3.),  $X_i$  being the set of control variables describe in section 4.3.4., and  $v$  the error term.

Finally, to test if “touchy” clauses are more subject to political contestability, and thus to rigidity (Hypothesis 2), we compare the level of rigidity induced by private contracts for each of our 13 categories of rigidity. If our hypothesis is true, we should observe larger level of rigidity for the following categories: Certification, Conception, Sustainable Development, Organic, Local and Health as they are very important categories for public power due to sanitarian scandals and the political will to increase the quality of the food and raw materials.

## 5 RESULTS

### 5.1 DESCRIPTIVE STATISTICS

The duration of the contracts is limited by law for public contracts, but not for private contracts. We, thus, have 31% contracts with unlimited duration (all of them are private contracts), and a mean of 1 year and a half for contracts with a limited duration, ranged from a few days to almost 14 years. Besides, 33.8% of total contracts are renewed contracts. Finally, the numbers of inhabitants and of meals expected in the contracts are given in Table 2, along with  $zRigidity$  (statistics for  $zClauses$  are in Annex 9.1 Table 1). It has to be noted that two contracts do not have the number of meals, and two other contracts are in cities with unknown population due to administrative reform. We, then, take them off the regressions and use the 496 remaining observations.

**TABLE 2: DESCRIPTIVE STATISTICS – ALL OBSERVATIONS**

	Mean	Std. Dev.	Min.	Max.	N
<i>zRigidity</i>	3.28e-08	8.798729	-9.363912	66.42826	500
<i>MEALS</i>	264.6888	781.7262	2	11750	498
<i>Population</i>	39038.1	70548.39	6	458298	498

In order to focus on political contestation, we only keep contracts which have a municipality as client. We, then, select municipalities with more than 1,000 inhabitants for which we have a list voting system. We have consequently 96 contracts. They encompass

institutional catering for nurseries (31.25%), schools (81.25%), middle-schools (4.17%), high-schools (2%), retirement homes (2%), holiday's centers (33.3%), and home deliveries (19.79%). Since we have contracts with several customers, we have a mean of 1.74 customers per contract (from one to five). The duration of the contracts is limited by law, so we have a mean of 2.83 years per contract, ranged from a few days to seven years. Besides, 51% of total contracts are renewed contracts. Finally, the numbers of inhabitants and of meals expected in the contracts are given in Table 3, along with  $zRigidity$  (statistics for  $zClauses$  are in Annex 9.1 Table 2).

**TABLE 3: DESCRIPTIVE STATISTICS – POLITICAL SUBSAMPLE (96 OBSERVATIONS)**

	Mean	Std. Dev.	Min.	Max.	N
<i>zRigidity</i>	2.19e-08	8.522353	-9.151251	38.38649	96
<i>MEALS</i>	556.8854	1052.308	14	6601	96
<i>Population</i>	16018.75	37035.98	1010	342295	96

Furthermore, we have the political data for the political subsample summed-up in Table 4. In those municipalities, 55% of mayors were elected at the first round in 2014 with a mean of 2.75 lists, ranged from two to six lists. In the municipalities with a second round, there were a mean of 2.98 lists at the second round, from two to four. Finally, 15.6% of the municipalities of our subsample have an Agenda 21 in force.

**TABLE 4: POLITICAL CONTESTATION – POLITICAL SUBSAMPLE (96 OBSERVATIONS)**

	Mean	Std. Dev.	Min.	Max.	N
<i>HHI</i>	.4507318	.0856475	.312096	.6624942	96
<i>HHI 2<sup>nd</sup> round, 2014</i>	.4018006	.0651091	.312096	.5894303	43
<i>Margin</i>	.1994657	.1601798	.0012361	.614228	96
<i>Square Margin</i>	.0651769	.0877598	1.53e-06	.3772761	96
<i>ResidualHHI 2<sup>nd</sup> round, 2014</i>	.0980035	.1131629	0	.3212121	96
<i>Number of List elected 1<sup>st</sup> round, 2014</i>	2.735849	1.002899	2	6	53
<i>Number of List 2<sup>nd</sup> round, 2014</i>	2.976744	.5558508	2	4	43

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## 5.2 EMPIRICAL MODEL

### *TOTAL RIGIDITY*

We first estimate the difference in rigidity between private and public contracts. Results are given in Table 1. Our first model (1) confirms our hypothesis: private contracts are less rigid than public contracts. The level of rigidity seems also to increase with the size of the market (number of meals), but surprisingly its duration and the size of the population have no influence on rigidity. The level of rigidity depends also on the type of contracts. As anticipated, operating contracts are largely the more rigid contracts as they need to foresee large investments. We can also notice that rigidity depends on the type of clients. The level of rigidity seems to decrease in the school sector according to the age of the children at school, then reaches its highest level for the aging population. There is no economical explanation for that phenomenon, except maybe that citizens vote more for municipal election than for other territorial elections, so the benefits from political contestation are potentially higher in municipalities than in departments or regions. Besides, the elderly are the more constant voters, which implies a higher political risk on contracts, and consequently a higher rigidity. We could speculate about the existence of a “*democratic scale*”: the closer the center of decision is on this scale, the more rigid the contract is. Indeed, it is more difficult to publicly contest the President of the Region than the Mayor of the city. For instance, a demonstration is often in front of the Head Office of the political power. It is more costly and difficult to gather people from the whole region, especially in large ones, than from the municipality. Finally, when the number of clients increases, the level of rigidity also increases as the market becomes bigger and more important for the client.

We then estimate the same model on public contracts (2). In order to have the rigidity calculated on only those sub-samples, we repeat this estimation in model (3), for which we have  $E(zRigidity; Private=0) = 0$ . We obtain similar results with two noticeable changes. First, the longer the contract is, the more the contract is rigid. Second, the “*democratic scale*” does not stand out. If coefficients are of the right sign, they are not significant. Similar estimations have been run for private contracts only (see Annex 9.3). However, the variables explain only 4% to 6% of the variation in rigidity.



Finally, we regress on the population studied for political contestation (4) that is the public and municipal clients. We find similar results, with some variations for the client, which is normal as we do not have Hospitals and Other Clients anymore.

**TABLE 5: PUBLIC VERSUS PRIVATE RIGIDITY**

<i>zRigidity</i>	(1) OLS	(2) OLS Private=0	(3) OLS (Private=0; Rigidity Public only)	(4) OLS (Private=0; on Municipality=1)
<i>Private</i>	-2.079** (.0394)	<i>None</i>	<i>None</i>	<i>None</i>
<i>Meals</i>	.00270*** (9.26e-11)	.00697*** (.000)	.006*** (.000)	0.00474*** (0)
<i>Population</i>	-2.81e-07 (.952)	6.24e-06 (.665)	4.45e-6 (.704)	1.61e-05 (0.450)
<i>Duration</i>	.326 (.181)	.861** (.0151)	.687** (.017)	0.310 (0.467)
<i>Unlimited Duration</i>	-.146 (.886)	<i>None</i>	<i>None</i>	<i>None</i>
<i>Renewal</i>	.652 (.328)	.202 (.828)	.148 (.845)	-0.227 (0.844)
<i>Operating</i>	13.99*** (.000)	11.28*** (3.78e-07)	9.477*** (.000)	12.41*** (1.66e-05)
<i>Provision of Services</i>	.715 (.419)	.783 (.750)	.836 (.675)	-0.761 (0.811)
<i>Other Contract</i>	.440 (.726)	1.923 (.239)	1.558 (.241)	1.863 (0.321)
<i>Number of Users</i>	3.492*** (.03e-05)	1.939* (.0949)	1.661* (.079)	-1.716 (0.511)
<i>Nursery</i>	1.574+ (.131)	1.719 (.263)	1.329 (.287)	0.694 (0.658)
<i>School</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
<i>Middle School</i>	-2.770+ (.100)	.0140 (.996)	.118 (.959)	8.902* (0.0966)
<i>High School</i>	-2.627* (.0697)	-3.068 (.156)	-2.517 (.152)	-8.060 (0.245)
<i>Holidays</i>	1.068 (.325)	-.134 (.937)	-.219 (.873)	2.218 (0.522)
<i>Retirement Home</i>	4.617*** (.000115)	7.727*** (.00105)	6.291*** (.001)	5.637 (0.339)

<i>Home Delivery</i>	4.230*** (.000280)	5.117*** (.000188)	4.075*** (.000)	6.247** (0.0439)
<i>Hospital</i>	1.834 (.297)	-5.599 (.280)	-4.443 (.292)	<i>None</i>
<i>Other Clients</i>	.424 (.789)	4.411+ (.124)	3.539+ (.129)	<i>None</i>
<i>Observation</i>	496	242	242	96
<i>Adjusted R-squared</i>	.458	.606	.6023	0.631

Note: Home delivery increases *zRigidity* by 4.230 with a *p*-value of (.000280), for model 1. *P*-val in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$

### **RIGIDITY BY CATEGORY**

We show in Annex (9.4) the results of the regressions by categories of rigidity. We find similar results than with the total rigidity. Private contracts are less rigid than public ones for the following categories (\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$ ): Arbitration\*, Organic<sup>+</sup>, Conception\*\*, Certification<sup>+</sup>, Evaluation\*\*\*, Local<sup>+</sup>, Health\*\*\*, and Litigation\*\*. On the contrary, Termination\*\*\* is positively influenced by private contracts, but this has to be balanced in regard with the large negative sign of the variable *Unlimited Duration*, which only concerns private contracts. Public and private contracts do not seem to differ in the following dimensions: Sustainable, Contingencies, and Penalties. We find similar results for other variables.

When we focus on Public contracts (Annex 9.5), we find that the rigidity in each category increases with the number of meals but for Local and Organic clauses. This might be explained due to sequential choice for Organic and Local clauses. First, the mayor decide to implement or not local and organic procurement. Then, she decides the number of clauses if any. Those clauses are thus marked out on the left, and our model does not capture this sequential choice. This is the difference between mandatory clauses such as Termination and optional clauses such as Organic and Local. Still, the Certification clause becomes more rigid with the number of meals, which is coherent with quality being a more sensitive issue when the size of the market increases.

Similarly, as expected we find that clauses meant to control the private partner and adapt the contract to unpredicted events (Arbitration, Conception, Evaluation, Contingencies, Penalties, and Termination) get more rigid as the contract last longer. On the contrary, clauses that define a goal for quality (Organic, Local, Certification, Sustainable, and Health) are not driven by duration effect.

Finally, the public catering contracts for the elders are the more rigid (compared with other clients) on the following quality clauses: Arbitration, Conception, Sustainable, Contingencies, Local, and Health, and on the Termination clauses in case of non-respect of the contract. This might be due to the great implication of the elders in (local and national) elections, and then the largest concerns from the public authorities.

### ***RIGIDITY AND POLITICAL CONTESTATION***

We have highlighted that public contracts are, all other things being equal, more rigid than private contracts (Hypothesis 1). We, now, attempt to explain this difference in rigidity by the existence of political contestation and risk for public contracts. We expect this over rigidity in public contracts to vary according to the level of political risk (Hypotheses 2 and 3). To tackle this issue, we select 96 contracts, which are all the contracts that have a municipality as client (Nursery, School, Middle-School, High-School, Retirement House, Home delivery), for which the municipality has more than 1,000 inhabitants so the mayor is elected on a list in 2014<sup>21</sup>. Usually, Middle-School and High-School are not managed by municipalities, but sometimes the catering service is delegated to the municipality so as to benefit from scale economies. We notice also that our sample has no switch in management. We do the same regression than in (4) but the *zRigidity* variable is calculated only on that sample so as  $E(zRigidity; Private = 0; Client = Municipality; Pop < 1000) = 0$ . There is no major change except that the duration of the contract is no longer a significant variable, and there are some variations in the coefficients of the variables *Client* due to the absence of Hospitals and Other Clients.

As we expected, our models seems to confirm that the more concentrated the political power in a municipality is, the less rigid the contract will be (Table 6). The models (5) and (6) show that the largest the HHI is, meaning the more concentrated the political power is, the lowest the rigidity will be. We found those results with the HHI calculated only for the second turn, and with the HHI calculated for the round of election, such as  $HHI = HHI_{2^{nd} \text{ round}} + HHI_{1^{st} \text{ round}}$  when elected at the 1<sup>st</sup> round. In equation (6), we also find that being elected at the 1<sup>st</sup> round implies less rigidity in the contract, which is coherent with a strong political power being less concern about political opposition. We reinforce those results with the introduction of the

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<sup>21</sup> We select those contract in order to study the political contestability at the municipal level, which seems the most pertinent scale as it is the public political power the closest to the citizens.

margin of the winner (7). First, a higher margin increases rigidity, but with a negative non-linear effect. Then, the higher the margin is, the less the rigidity of the contract will be.

However, whatever the equations<sup>22</sup> we find a negative sign of the Residual HHI (8) when we expect a positive one. Residual HHI normally accounts for the power of the opposition, the largest it is, the more concentrated the political opposition is, and the more rigid the contract should be in order to decrease the potential gain from a challenge. However, Residual HHI might account for two other effects. First, a more concentrated opposition might reflect a lack of emulation in the opposition. Indeed, when there are several political oppositions, they fight for the 1<sup>st</sup> place and attack the majority. However, when there is only one opposition, it will avoid overacting on every subject in order not to seem to be a systematic opposition but a constructive one. Consequently, rigidity decreases along with the risk of political contestation. Second, a more concentrated opposition might be the result of instable political alliances among various constituencies of the opposition because of internal divergences. In that case, the different parties in the opposition will fight against each other to be the main opposition, instead of attacking the majority in place. Thus, the contestation power of the opposition decreases along with the rigidity of the contract.

We also notice that the variable *Agenda 21* has no effect on rigidity on our model. It might not be a good indicator since it can be interpreted as a proxy for signaling probity (decreases rigidity) or for citizen's sensitivity to environmental issues (increases rigidity). On the contrary, the number of meals in the contract increases its rigidity. That is coherent with the assumption that the public body increases rigidity of the contract when the expected benefits from political contestation becomes larger.

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<sup>22</sup> We tried to add control variables for the number of lists, only for the 1<sup>st</sup> or the 2<sup>nd</sup> round of election or for both. We always obtain the same results.

**TABLE 6: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY**

<i>zRigidity</i>	(5) OLS Private=0	(6) OLS Private=0	(7) OLS Private=0	(8) OLS Private=0	(9) OLS Private=0
<i>HHI</i>	-15.47* (0.0842)				
<i>HHI 2<sup>nd</sup> round, 2014</i>		-32.20** (0.0237)			
<i>Margin</i>			24.43** (0.0403)		
<i>Square Margin</i>			-42.75** (0.0474)		
<i>ResidualHHI 2<sup>nd</sup> round, 2014</i>				-64.80*** (0.00273)	
<i>Number of Lists elected 1<sup>st</sup> round, 2014</i>					0.968 (0.342)
<i>Number of Lists 2<sup>nd</sup> round, 2014</i>					3.747* (0.0552)
<i>Elected 1<sup>st</sup> round, 2014</i>	0.400 (0.766)	-1.980 (0.479)	-1.327 (0.333)	-3.461 (0.182)	7.343 (0.223)
<i>Elected 2<sup>nd</sup> round, 2014</i>	-	11.85+ (0.104)	-	11.925** (0.039)	-
<i>Agenda 21</i>	1.214 (0.485)	1.793 (0.283)	1.389 (0.422)	1.880 (0.248)	1.645 (0.348)
<i>Meals</i>	0.00455* ** (1.27e-10)	0.00484* ** (0)	0.00466* ** (0)	0.00511* ** (0)	0.00460* ** (3.75e-09)
<i>Population</i>	4.57e-06 (0.836)	1.17e-07 (0.996)	1.15e-05 (0.588)	-1.08e-05 (0.625)	-1.02e-05 (0.678)
<i>Duration</i>	0.0996 (0.823)	0.117 (0.787)	0.150 (0.740)	0.250 (0.552)	0.146 (0.739)
<i>Renewal</i>	0.0367 (0.975)	-0.461 (0.685)	0.0319 (0.978)	-0.238 (0.829)	-0.328 (0.779)
<i>Operating</i>	12.99*** (8.06e-06)	13.77*** (2.82e-06)	11.61*** (6.91e-05)	10.66*** (0.000127)	12.98*** (8.10e-06)
<i>Provision of Services</i>	1.038 (0.754)	-0.654 (0.836)	1.273 (0.708)	-0.433 (0.888)	-0.193 (0.952)
<i>Other Contract</i>	1.649 (0.377)	1.274 (0.492)	2.173 (0.246)	1.431 (0.426)	1.574 (0.400)
<i>Users</i>	-2.115	-3.272	-1.019	-2.055	-2.145

	(0.417)	(0.218)	(0.699)	(0.411)	(0.431)
<i>Nursery</i>	-0.0504	0.580	0.404	0.597	-0.586
	(0.975)	(0.707)	(0.797)	(0.691)	(0.739)
<i>School</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
<i>Middle School</i>	9.465*	10.26*	7.748+	9.109*	8.387+
	(0.0759)	(0.0525)	(0.147)	(0.0754)	(0.116)
<i>High School</i>	-5.788	-3.148	-9.301	-6.440	-3.002
	(0.412)	(0.660)	(0.181)	(0.334)	(0.686)
<i>Holidays</i>	2.780	4.582	1.088	2.935	3.139
	(0.420)	(0.197)	(0.758)	(0.376)	(0.391)
<i>Retirement Home</i>	8.709	9.903+	5.945	7.775	8.002
	(0.155)	(0.104)	(0.340)	(0.175)	(0.211)
<i>Home Delivery</i>	6.113**	6.918**	5.884*	4.905+	5.393*
	(0.0492)	(0.0258)	(0.0587)	(0.102)	(0.0875)
<i>Observations</i>	96	96	96	96	96
<i>Adjusted R-squared</i>	0.637	0.643	0.639	0.660	0.638
		Elected 2 <sup>nd</sup> round > Elected 1 <sup>st</sup> round **		Elected 2 <sup>nd</sup> round > Elected 1 <sup>st</sup> round ***	
		(.020)		(.002)	

Note: Home delivery increases zRigidity by 6.113 with a p-value of (.0492), in model (5).

P-val in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$

### **RIGIDITY BY CATEGORY AND POLITICAL CONTESTATION**

We run the same models for political contestation on each clauses of rigidity (Annexes 9.6, 9.7, 9.8, and 9.9) and we summed-up the results in Table 7. The effects are similar than the one observed on zRigidity for Certification, Sustainable, Contingencies, Local, Health, and Termination. We observe also effects of some political contestation variables, but not all, on Evaluation, Litigation, and Conception. We have no effect for the Arbitration, Organic, and Penalties clauses.

**TABLE 7: POLITICAL CONTESTATION BY CLAUSES OF RIGIDITY**

		(1)		(2)			(3)		(4)		
		<i>Model with no Political variables: Adj. R<sup>2</sup></i>	<i>HHI 2<sup>nd</sup> round, 2014</i>	<i>Adj. R<sup>2</sup></i>	<i>Margin</i>	<i>Square Margin</i>	<i>Adj. R<sup>2</sup></i>	<i>Residual HHI 2<sup>nd</sup> round, 2014</i>	<i>Adj. R<sup>2</sup></i>	<i>Number of Lists elected 1<sup>st</sup> round, 2014</i>	<i>Number of Lists elected 2<sup>nd</sup> round, 2014</i>
(1) <i>zArbitration</i>	.51	-2.424 (0.215)	.51	1.948 (0.236)	-3.109 (0.300)	.50	-4.075 (0.175)	.51	0.193 (0.186)	0.115 (0.666)	.50
(2) <i>zOrganic</i>	.10	-0.840 (0.752)	.08	1.518 (0.497)	-3.405 (0.404)	.07	-3.686 (0.367)	.08	0.227 (0.245)	0.567+ (0.115)	.10
(3) <i>zConception</i>	.57	-2.947+ (0.106)	.58	2.215+ (0.147)	-2.739 (0.325)	.57	-5.967** (0.0324)	.58	0.105 (0.440)	0.360+ (0.150)	.57
(4) <i>zCertification</i>	.41	-2.621 (0.220)	.41	3.585** (0.0437)	-5.464* (0.0912)	.42	-8.396*** (0.00931)	.48	0.127 (0.416)	0.510* (0.0792)	.42
(5) <i>zSustainable</i>	.56	-4.476** (0.0137)	.59	2.021 (0.191)	-4.018 (0.155)	.56	-6.067** (0.0305)	.57	0.0283 (0.833)	0.526** (0.0354)	.57
(6) <i>zEvaluation</i>	.33	-2.126 (0.347)	.34	1.618 (0.389)	-4.446 (0.197)	.34	-1.275 (0.714)	.31	0.0310 (0.854)	-0.0941 (0.762)	.32
(7) <i>zContingen.</i>	.52	-3.009+ (0.114)	.53	3.276** (0.0393)	-5.191* (0.0730)	.54	-8.178*** (0.00445)	.56	0.101 (0.476)	0.274 (0.294)	.52
(8) <i>zLocal</i>	.16	-4.566* (0.0718)	.18	-0.585 (0.786)	0.349 (0.929)	.13	-3.553 (0.366)	.15	0.0718 (0.702)	0.572+ (0.100)	.16
(9) <i>zPenalties</i>	.38	-1.591 (0.468)	.37	-.105 (0.954)	1.331 (0.692)	.37	-4.808 (0.152)	.38	-.0224 (0.891)	0.246 (0.412)	.37
(10) <i>zHealth</i>	.55	-3.732** (0.0410)	.58	3.016** (0.0496)	-4.861* (0.0825)	.57	-8.949*** (0.00114)	.60	-0.103 (0.441)	0.522** (0.0356)	.58
(11) <i>zLitigation</i>	.49	-3.761* (0.0576)	.50	1.486 (0.376)	-2.531 (0.410)	.48	-4.659+ (0.128)	.49	-0.101 (0.494)	0.271 (0.320)	.48
(12) <i>zTerminat.</i>	.56	-0.0669 (0.971)	.55	3.298** (0.0321)	-5.585** (0.0466)	.57	-5.561** (0.0488)	.57	0.0599 (0.665)	-0.0968 (0.704)	.55

*Note: For the model (1), an increase of HHI by one decreases zLocal by 4.566, with a p-value of .0718. The model has an adjusted R square of 19%.*

## 6 CONCLUSION

In this chapter, we investigated the specific nature of public contracts *vis-à-vis* private ones. Public contracts are quite often qualified as inefficient because they are rigid, rely on administrative procedures, and are difficult to adapt to unforeseen contingencies. We gathered all the contracts signed in 2015 in France by one of the largest catering company, one year after the municipal election in 2014. We selected with algorithmic textual analysis key-words in the contracts to calculate the rigidity. We highlighted evidences of a higher level of rigidity for public contracts with respect to public ones. Building on Spiller (2008) and Moszoro and Spiller

(2016), we argue that this additional formalization of public contracts does not result from an inefficient design. Public contracts are more rigid because the public parties have to factor political risks in the contractual design. These risks come from the action engaged by (potentially) opportunistic third parties. Public contracts involve money coming out of taxpayers and are subject to both important media exposure and scrutiny from third parties. When contracts are subject to more contestation and political scrutiny, the majority increases the specifications of the contract (that is the rigidity) to mitigate the risk for an opportunistic challenge of the contract by third parties. Consequently, we have shown that “touchy” issues are more particularly concerned by risk of opportunism, and, thus, lead to more rigidity in the contractual design. Following Spiller (2009) and Spiller and Moszoro (2012, 2014), we think that this specificity can be extended to other choices, such as the choice for municipal bonds (Aneja, Moszoro and Spiller, 2015) or the Make-or-Buy choice (see chapter 1) for instance.

We also found that the *Residual HHI* that accounts for the concentration of the opposition has an unexpected negative influence on the rigidity of the contract. We argue that it might be because instead of accounting for the concentration of the opposition, in our case it reflects the instable municipal majority made of several political alliances. This remains to investigate and, according to us, this possible effect shall be verified in future researches.

Finally, we tried to control for the out-of-contracts signals given by the political body for “touchy” matters, but with no observable effect on rigidity. We do not conclude that signals cannot reduce rigidity, but the variable we use (*Agenda 21*) might not be a good proxy. We expect further researches to investigate this effect through better proxies.

Due to the methodology, we can formulate some limitations. First, since the contracts we rely on are just the year after municipal elections, they might be less subject to third-party opportunism, in particular by political opponents, as the political risks for the next election are farer and that there will be another contract before the next election. Those contracts might, thus, be less sensitive to political considerations than, for instance, the same contracts that would be signed just before the end of the political mandate. We, then, would like to confirm and strengthen those results through the same analysis at the end of the political cycle. Second, our contracts are all from the same company operating in only one sector of activity. As a consequence, we should be cautious in generalizing our results as they may be sector (and even firm)-specific. However most of our results are convergent with previous studies in different sectors (Beuve et al., 2016) as well as in different institutional contexts (Moszoro et al., 2016) suggesting that our results go beyond the particular sector and country we look at. Third, the



algorithmic textual analysis is in its early stage of development. While it allows to obtain and quickly analyze a large set of written documents, the quality of the interpretation is probably lesser than with human expertise as it does not take into account legal nuances. However, we try as much as we can to reduce ambiguity in the interpretation of the written contracts. We did so by selecting contractual provisions whose wording have a uniform meaning and do not suffer from too much alternative interpretations. For instance, when the word termination appears in the contract, this mostly refers on the conditions under which each party can end the contractual relation, not the fact that the parties agreed that none of us will terminate the contract whatever the external conditions are. Similarly, when the words “organic”, or “local” appears in the contracts, that means that the buyers have special requirements about these issues, not that he wants to discard them. Yet, those two clauses seem to be not enough used in contracts to study them adequately.

## 7 REFERENCES

- Aneja, A., Moszoro, M., & Spiller, P. T. (2015). *Political Bonds: Political Hazards and the Choice of Municipal Financial Instruments* (No. w21188). National Bureau of Economic Research., doi: 10.3386/w21188
- Baker, G., Gibbons, R., & Murphy, K. J. (2002). Relational Contracts and the Theory of the Firm. *The Quarterly Journal of Economics*, 117(1), 39-84.
- Battigalli, P. & Maggi, G. (2002). Rigidity, Discretion, and the Costs of Writing Contracts. *The American Economic Review*, 92(4), 798–817.
- Bel, G., & Fageda, X. (2007). Why do local governments privatise public services? A survey of empirical studies. *Local Government Studies*, 33(4), 517-534.
- Beuve, J., Moszoro, M. W., & Saussier, S. (2016). Political contestability and contract rigidity: An analysis of procurement contracts. EPPP DP No. 2015-2.
- Bolton, P., & Dewatripont, M. (2005). *Contract theory*. MIT press.
- Buso, M., Marty, F., & Tran, P. T. (2017). Public-private partnerships from budget constraints: Looking for debt hiding? *International Journal of Industrial Organization*, 51, 56-84.
- Dubin, J. A., & Navarro, P. (1988). How markets for impure public goods organize: the case of household refuse collection. *Journal of Law, Economics, & Organization*, 4, 217–241.
- Filipini, R., De Noni, I., Corsi, S., Spigarolo, R., Bocchi, S. (2018). Sustainable School Food Procurement: what Factors do Affect and Increase the Introduction and the Increase of Organic Food? *Food Policy* (forthcoming).
- Goldsmith, S., & Eggers, W. D. (2005). *Governing by network: The new shape of the public sector*. Brookings Institution Press.
- González-Gómez, F., Picazo-Tadeo, A.J., & Guardiola, J. (2011). Why do local governments privatize the provision of water services? Empirical evidence from Spain. *Public Administration*, 89(2), 471-492.
- Laffont, J. J., & Tirole, J. (1993). *A theory of incentives in procurement and regulation*. MIT press.

- Lafontaine, F., & Slade, M. (2013). Inter-firm contracts. *The handbook of organizational economics*, 958-1013.
- Le Squeren, Z., & Moore, J. (2015, January). The Political Cycle of Public-Private Contract Renegotiations. In *Academy of Management Proceedings* (Vol. 2015, No. 1, p. 14612). Academy of Management.
- Levy, B., & Spiller, P. T. (1994). The institutional foundations of regulatory commitment: a comparative analysis of telecommunications regulation. *The Journal of Law, Economics, and Organization*, 10(2), 201-246.
- Moszoro, M. W., & Spiller, P. T. (2012). *Third-party opportunism and the nature of public contracts* (No. w18636). National Bureau of Economic Research.
- Moszoro, M. W. & Spiller, P. T. (2014). *Third-party opportunism and the theory of public contracts: Operationalization and applications*. In Brousseau, E., & Glachant, J. M. (Eds.) (2014). *The manufacturing of markets: legal, political and economic dynamics*. Cambridge University Press, pp. 229-252.
- Moszoro, M., Spiller, P. T., & Stolorz, S. (2016). Rigidity of public contracts. *Journal of Empirical Legal Studies*, 13(3), 396-427.
- Ring, P. S., & Perry, J. L. (1985). Strategic management in public and private organizations: Implications of distinctive contexts and constraints. *Academy of management review*, 10(2), 276-286.
- Schwartz, A., & Watson, J. (2013). Conceptualizing contractual interpretation. *The Journal of Legal Studies*, 42(1), 1-34.
- Spiller, P., (2009). An Institutional Theory of Public Contracts: Regulatory Implications, in C. Menard and M. Ghertman (eds.), *Regulation, Deregulation, Re-regulation, Cheltenham, UK and Northampton, MA, USA* : Edward Elgar Publishing, pp. 45-66.
- Sundell, A., & Lapuente, V. (2012). Adam Smith or Machiavelli? Political incentives for contracting out local public services. *Public Choice*, 1-17.
- Tadelis, S., & Williamson, O.E. (2013). *Transaction cost economics*, In Gibbons, R., Roberts, J. (Eds.) (2013), *The Handbook of Organizational Economics*, Princeton University Press, New Jersey, pp. 159-189.



## 8 DATA SOURCES

Agenda21, available at: <http://www.agenda21france.org/agenda-21-de-territoire/agenda-21-local/communes.html?order=4>

French Home Office, 2008, 2014, *Elections Municipales*, available at <https://www.interieur.gouv.fr>

INSEE, *Chômage 2011*, available at <https://www.data.gouv.fr>

INSEE, *Familles, 2013*, available at <https://www.data.gouv.fr>

INSEE, *Population et Aire*, available at <https://www.data.gouv.fr>

## 9 PUBLIC AND PRIVATE INSTITUTIONAL REPORTS

Agence Bio, (2016). *La Bio en France, des Producteurs aux Consommateurs*. Les Carnets de l'Agence Bio.

Ministry of Agriculture, Draaf Rhône-Alpes, (2012). Favoriser une restauration collective de proximité et de qualité, available at: [http://draaf.auvergne-rhone-alpes.agriculture.gouv.fr/Favoriser-une-restauration?id\\_rubrique=345](http://draaf.auvergne-rhone-alpes.agriculture.gouv.fr/Favoriser-une-restauration?id_rubrique=345)

ANSES, La restauration scolaire (2006-2007), available at: <https://www.anses.fr/fr/content/la-restauration-scolaire>

Gira FoodService, (2014). available at: <http://www.girafoodservice.com/en/publications/2014/>

Institut de la Gestion Déléguée, (2015). Atlas de la Gestion des Services Publics Locaux 2015, available at:

[https://www.economie.gouv.fr/files/files/directions\\_services/ppp/Atlas\\_complet\\_FINAL\\_BA\\_T\\_9\\_nov\\_2015.pdf](https://www.economie.gouv.fr/files/files/directions_services/ppp/Atlas_complet_FINAL_BA_T_9_nov_2015.pdf)

Report of the *Cour des Comptes*, (1998). Chapitre XII (pages 643 à 670): Collectivités et organismes relevant du contrôle des chambres régionales et territoriales des comptes: Le Service public communal en Provence-Alpes-Côte d'Azur. « La gestion déléguée du service public communal de la restauration collective en Ile-de-France », rapport public 1998, pages 469 et ss.

Report of the *Cour des Comptes*. (2004). « Le service public communal de la restauration collective en Provence-Alpes-Côte d'Azur », rapport public 2004, pages 645 et ss.

UNESCO, (2010). available at: <http://www.unesco.org/culture/ich/fr/RL/le-repas-gastronomique-des-francais-00437>

## **10 PRESS AND MEDIA**

Moore, M. (2016). *Where to invade next*. Aec.

# 11 ANNEX

## 11.1 DESCRIPTIVE STATISTICS

**TABLE 8: RIGIDITY BY CLAUSES – ALL OBSERVATIONS**

	N	Mean	Std. Dev.	Min	Max
<i>zArbitration</i>	500	2.16e-10	1	-.9884575	8.554097
<i>zOrganic</i>	500	5.62e-09	1	-.3310037	11.13323
<i>zConception</i>	500	-1.80e-09	1	-.9287401	8.780361
<i>zCertification</i>	500	-1.01e-09	1	-.8840869	10.40028
<i>zSustainable</i>	500	3.02e-09	1	-.6078266	8.563002
<i>zEvaluation</i>	500	-3.87e-09	1	-.4278005	6.470906
<i>zContingencies</i>	500	7.51e-09	1	-1.385124	6.004956
<i>zLocal</i>	500	6.65e-09	1	-.2590207	10.19834
<i>zPenalties</i>	500	-4.47e-10	1	-.8550552	17.00185
<i>zHealth</i>	500	-9.61e-10	1	-.724949	9.512506
<i>zLitigation</i>	500	-1.39e-09	1	-.5495838	9.374681

**TABLE 9: RIGIDITY BY CLAUSES – 96 OBSERVATIONS**

	N	Mean	Std. Dev.	Min	Max
<i>zArbitration</i>	96	-3.76e-09	1	-1.055749	4.994216
<i>zOrganic</i>	96	1.90e-09	1	-.4991252	5.790567
<i>zConception</i>	96	2.12e-09	1	-.9551101	4.869701
<i>zCertification</i>	96	2.21e-09	1	-.8027809	6.32797
<i>zSustainable</i>	96	8.15e-09	1	-.7305723	4.203544
<i>zEvaluation</i>	96	-1.24e-09	1	-.7410185	4.0052
<i>zContingencies</i>	96	-9.31e-10	1	-1.173828	3.41796
<i>zLocal</i>	96	1.86e-09	1	-.4441203	5.690492
<i>zPenalties</i>	96	3.26e-09	1	-.6377056	8.730439
<i>zHealth</i>	96	-3.00e-09	1	-.9486239	5.180611
<i>zLitigation</i>	96	-2.57e-10	1	-.7175083	6.085534

## 11.2 CORRELATION MATRIX

		1	2	3	4	5	6	7	8
1	<i>Private</i>	1.00							
2	<i>Meals</i>	-.07	1.00						
3	<i>Unlimited Duration</i>	.66	-.03	1.00					
4	<i>Renewal</i>	-.26	.15	-.30	1.00				
5	<i>Operating</i>	-.18	.16	-.12	.10	1.00			
6	<i>Provision of Services</i>	.47	.07	.28	-.01	-.10	1.00		
7	<i>Other Contract</i>	-.10	.00	-.05	.08	-.05	-.16	1.00	
8	<i>Users</i>	-.25	.33	-.16	.13	.24	-.06	.01	1.00
9	<i>Nursery</i>	.01	.01	.09	-.06	.09	-.23	-.08	.22
10	<i>Middle School</i>	.08	.15	.10	.03	-.04	.23	-.01	.27
11	<i>High School</i>	-.01	.12	.01	.03	.23	.15	-.04	.13
12	<i>Holidays</i>	.07	.06	-.22	.03	.02	.08	-.02	.31
13	<i>Retirement Home</i>	.23	-.01	.27	-.07	-.03	.22	.16	-.02
14	<i>Home Delivery</i>	-.33	.08	-.21	.15	.09	-.18	-.05	.39
15	<i>Hospital</i>	.15	-.02	.15	-.02	-.03	.14	.07	-.07
16	<i>Other Client</i>	.06	.14	.08	-.02	.07	.01	.01	-.02
17	<i>Population</i>	.27	.01	.26	-.09	.03	.02	.07	-.04
		9	10	11	12	13	14	15	16
9	<i>Nursery</i>	1.00							
10	<i>Middle School</i>	-.08	1.00						
11	<i>High School</i>	-.12	.33	1.00					
12	<i>Holidays</i>	-.12	-.14	-.17	1.00				
13	<i>Retirement Home</i>	-.11	-.09	-.10	-.20	1.00			
14	<i>Home Delivery</i>	.01	-.06	-.09	-.01	-.07	1.00		
15	<i>Hospital</i>	-.08	-.05	-.05	-.12	-.07	-.07	1.00	
16	<i>Other Client</i>	-.07	-.06	-.06	-.12	-.08	-.05	-.04	1.00
17	<i>Population</i>	.03	.10	.17	-.04	.09	-.12	.03	.12



### 11.3 PRIVATE RIGIDITY

#### PUBLIC VERSUS PRIVATE RIGIDITY

	(1)	(2)	(3)	(4)	(5)
	OLS	OLS (Private=0)	OLS (Private=1)	OLS (Private=0; Rigidity on Public only)	OLS (Private=1; Rigidity on Private only)
<i>Private</i>	-2.080** (.039)	None	All	None	All
<i>Meals</i>	.003*** (.000)	.007*** (.000)	2.85e-4 (.445)	.006*** (.000)	4.48e-4 (.448)
<i>Population</i>	-2.81e-7 (.952)	6.24e-6 (.665)	-4.03e-6 (.268)	4.45e-6 (.704)	-6.27e-6 (.277)
<i>Duration</i>	.326 (.181)	.861** (.015)	-.420+ (.117)	.687** (.017)	-.684+ (.108)
<i>Unlimited Duration</i>	-.146 (.886)	None	-.785 (.355)	None	-1.180 (.380)
<i>Renewal</i>	.652 (.328)	.202 (.828)	1.201+ (.123)	.148 (.845)	1.755 (.155)
<i>Operating</i>	13.994*** (.000)	11.282*** (.000)	None	9.477*** (.000)	None
<i>Delivery Provision Of Services Other Contract Number Of Users Nursery School</i>	<i>Reference</i> .715 (.419) .440 (.726) 3.492*** (.000) 1.574+ (.131) <i>Reference</i>	<i>Reference</i> .783 (.750) 1.923 (.239) 1.940* (.095) 1.720 (.263) <i>Reference</i>	<i>Reference</i> .995 (.176) -2.381+ (.137) 1.484 (.363) .399 (.736) <i>Reference</i>	<i>Reference</i> .836 (.675) 1.558 (.241) 1.661* (.079) 1.329 (.287) <i>Reference</i>	<i>Reference</i> .168 (.885) -4.241* (.095) 2.515 (.331) .894 (.633) <i>Reference</i>

<i>Middle School</i>	-2.770*	.014	-2.668	.118	-4.683 <sup>+</sup>
	(.100)	(.996)	(.170)	(.959)	(.129)
<i>High School</i>	-2.627*	-3.068	-.903	-2.517	-1.544
	(.070)	(.156)	(.593)	(.152)	(.565)
<i>Holidays</i>	1.068	-.134	-.320	-.219	-.933
	(.325)	(.937)	(.786)	(.873)	(.617)
<i>Retirement</i>	4.617***	7.727***	2.844**	6.291***	3.962**
	(.000)	(.001)	(.019)	(.001)	(.038)
<i>Home Delivery</i>	4.230***	5.117***	-2.837	4.075***	-5.772
	(.000)	(.000)	(.403)	(.000)	(.283)
<i>Hospital</i>	1.834	-5.599	1.556	-4.443	2.437
	(.297)	(.280)	(.309)	(.292)	(.315)
<i>Other Client</i>	.424	4.411 <sup>+</sup>	-1.417	3.539 <sup>+</sup>	-2.783
	(.789)	(.124)	(.356)	(.129)	(.253)
Adjusted R-Squared	.4581	.6059	.0680	.6023	.0447
N	496	242	254	242	254

*Note: Private contracts are less rigid than public contracts, with a p-value equals .039. \*\*\* for p-values < .01; \*\* for p-values < .05; \* for p-values < .10; <sup>+</sup> for p-values < .15.*

## 11.4 PUBLIC VERSUS PRIVATE RIGIDITY-CLAUSES

### PUBLIC VERSUS PRIVATE RIGIDITY-CLAUSES – PART 1

	(1) OLS zArbitration	(2) OLS zOrganic	(3) OLS zConcepti on	(4) OLS zCertifica tion	(5) OLS zSustaina ble	(6) OLS zEvaluati on
<i>Private</i>	-0.218* (0.0596)	-0.222+ (0.112)	-0.238** (0.0477)	-0.189+ (0.143)	-0.160 (0.203)	-0.595*** (5.14e-06)
<i>Meals</i>	0.000273*** (1.01e-08)	6.28e-05 (0.268)	0.000383*** (0)	0.000247*** (2.97e-06)	0.000244*** (2.19e-06)	0.000229*** (1.48e-05)
<i>Population</i>	1.19e-07 (0.826)	-2.18e-09 (0.997)	8.22e-08 (0.883)	-3.86e-07 (0.521)	-1.96e-07 (0.738)	1.13e-07 (0.852)
<i>Duration</i>	0.0423+ (0.131)	0.00742 (0.826)	0.0485* (0.0947)	-0.0147 (0.636)	0.0116 (0.703)	0.103*** (0.00105)
<i>Unlimited Duration</i>	-0.0292 (0.802)	-0.00926 (0.948)	0.0170 (0.888)	-0.0586 (0.651)	0.00436 (0.973)	0.167 (0.201)
<i>Renewal</i>	0.0802 (0.295)	-0.0203 (0.826)	-0.00131 (0.987)	0.156* (0.0674)	0.0723 (0.385)	0.0819 (0.337)
<i>Operating</i>	1.741*** (0)	0.166 (0.524)	0.128 (0.566)	1.598*** (7.70e-11)	1.356*** (1.36e-08)	1.279*** (1.66e-07)
<i>Provision of Services</i>	0.129 (0.203)	0.0325 (0.791)	-0.616*** (9.43e-09)	0.315*** (0.00557)	0.00690 (0.950)	-0.0537 (0.636)
<i>Other Contract</i>	0.212+ (0.142)	0.351** (0.0440)	-0.560*** (0.000196)	-0.0461 (0.774)	-0.0285 (0.855)	0.405** (0.0120)
<i>Users</i>	0.374*** (9.97e-05)	0.531*** (4.95e-06)	0.229** (0.0210)	0.270** (0.0111)	0.392*** (0.000173)	0.00113 (0.992)
<i>Nursery</i>	0.226* (0.0596)	0.190 (0.188)	0.267** (0.0319)	0.175 (0.190)	0.0331 (0.799)	0.135 (0.313)
<i>Middle School</i>	-0.352* (0.0691)	-0.568** (0.0153)	-0.0554 (0.782)	-0.255 (0.236)	-0.290 (0.168)	0.119 (0.582)
<i>High School</i>	-0.309* (0.0631)	-0.218 (0.278)	-0.177 (0.304)	-0.181 (0.328)	-0.357** (0.0489)	-0.0312 (0.866)
<i>Holidays</i>	0.206* (0.0992)	-0.155 (0.303)	0.188+ (0.147)	0.154 (0.266)	0.0838 (0.536)	0.205+ (0.140)
<i>Retirement Home</i>	0.424*** (0.00200)	-0.0593 (0.719)	0.459*** (0.00126)	0.383** (0.0121)	0.501*** (0.000786)	0.170 (0.264)

<i>Home Delivery</i>	0.452*** (0.000726)	0.366** (0.0228)	0.585*** (2.61e-05)	0.564*** (0.000152)	0.404*** (0.00536)	0.0210 (0.887)
<i>Hospital</i>	0.269 (0.183)	-0.115 (0.636)	0.152 (0.469)	0.141 (0.531)	-0.0464 (0.833)	0.0264 (0.907)
<i>Other Client</i>	0.0816 (0.654)	-0.0939 (0.669)	-0.0352 (0.852)	0.0378 (0.852)	-0.0786 (0.692)	0.547*** (0.00734)
Observations	496	496	496	496	496	496
Adjusted R-squared	0.449	0.201	0.405	0.318	0.326	0.315

*p*val in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$

**PUBLIC VERSUS PRIVATE RIGIDITY-CLAUSES – PART 2**

	(7) OLS zContingen.	(8) OLS zLocal	(9) OLS zPenalties	(10) OLS zHealth	(11) OLS zLitigation	(12) OLS zTermination
<i>Private</i>	-0.0872 (0.480)	-0.233+ (0.101)	0.0739 (0.599)	-0.359*** (0.00414)	-0.267** (0.0288)	0.416*** (0.000721)
<i>Meals</i>	0.000237*** (2.69e-06)	-2.22e-05 (0.699)	0.000453*** (0)	0.000337*** (7.29e-11)	0.000103** (0.0373)	0.000158*** (0.00154)
<i>Population</i>	6.29e-08 (0.913)	-4.93e-07 (0.456)	7.29e-07 (0.266)	1.18e-07 (0.839)	-1.31e-07 (0.817)	-2.95e-07 (0.605)
<i>Duration</i>	0.0774*** (0.00955)	-0.0107 (0.754)	0.0430 (0.205)	0.0161 (0.592)	-0.00298 (0.919)	0.00511 (0.863)
<i>Unlimited Duration</i>	0.0931 (0.453)	0.0228 (0.873)	-0.0508 (0.719)	0.0413 (0.742)	-0.0505 (0.680)	-0.292** (0.0179)
<i>Renewal</i>	-0.00836 (0.918)	0.0723 (0.441)	0.0285 (0.759)	0.0148 (0.858)	0.0794 (0.324)	0.0964 (0.234)
<i>Operating</i>	1.228*** (1.41e-07)	0.878*** (0.000960)	0.422+ (0.108)	0.293 (0.207)	2.755*** (0)	2.150*** (0)
<i>Provision of Services</i>	0.357*** (0.00105)	0.324*** (0.00949)	-0.261** (0.0351)	-0.386*** (0.000468)	0.258** (0.0162)	0.608*** (2.60e-08)
<i>Other Contract</i>	0.251+ (0.102)	-0.102 (0.562)	-0.187 (0.284)	-0.573*** (0.000249)	0.145 (0.340)	0.573*** (0.000184)
<i>Users</i>	0.419*** (4.29e-05)	0.258** (0.0276)	0.0135 (0.907)	0.359*** (0.000512)	0.326*** (0.00121)	0.320*** (0.00158)
<i>Nursery</i>	0.161 (0.206)	-0.0794 (0.588)	0.100 (0.490)	0.208+ (0.107)	-0.0505 (0.688)	0.211* (0.0956)
<i>Middle School</i>	-0.278 (0.178)	-0.115 (0.627)	-0.254 (0.280)	-0.237 (0.256)	-0.240 (0.238)	-0.244 (0.233)
<i>High School</i>	-0.164 (0.355)	-0.352* (0.0843)	-0.0846 (0.675)	-0.201 (0.261)	-0.422** (0.0161)	-0.131 (0.456)
<i>Holidays</i>	0.000235 (0.999)	-0.176 (0.249)	0.255* (0.0912)	0.213+ (0.113)	0.0603 (0.645)	0.0327 (0.804)
<i>Retirement Home</i>	0.473*** (0.00122)	0.366** (0.0289)	0.343** (0.0387)	0.703*** (2.34e-06)	0.327** (0.0230)	0.527*** (0.000282)
<i>Home Delivery</i>	0.611*** (1.91e-05)	-0.0207 (0.899)	0.367** (0.0233)	0.316** (0.0277)	0.224+ (0.110)	0.343** (0.0149)
<i>Hospital</i>	0.406* (0.0593)	0.123 (0.618)	0.269 (0.272)	0.320+ (0.142)	-0.0290 (0.891)	0.318+ (0.136)
<i>Other Client</i>	0.0522 (0.788)	-0.0502 (0.822)	0.0218 (0.921)	-0.194 (0.323)	0.0471 (0.806)	0.0884 (0.646)
<i>Observations</i>	496	496	496	496	496	496
<i>Adjusted R-squared</i>	0.375	0.0713	0.186	0.358	0.393	0.385

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

## 11.5 PUBLIC RIGIDITY BY CATEGORY

### PUBLIC RIGIDITY-CLAUSES

	(1) OLS zArbitration	(2) OLS zOrganic	(3) OLS zConception	(4) OLS zCertification	(5) OLS zSustainable	(6) OLS zEvaluation
<i>Meals</i>	0.000693*** (0)	0.000148 (0.270)	0.00103*** (0)	0.000523*** (6.80e-07)	0.000666*** (0)	0.000706*** (3.43e-09)
<i>Population</i>	1.66e-06 (0.346)	6.38e-07 (0.810)	6.36e-07 (0.737)	-5.30e-07 (0.794)	1.81e-07 (0.919)	-1.27e-06 (0.576)
<i>Duration</i>	0.112*** (0.00959)	0.0180 (0.782)	0.0929** (0.0452)	0.0270 (0.586)	0.0305 (0.484)	0.171*** (0.00231)
<i>Renewal</i>	0.0355 (0.754)	-0.0290 (0.866)	-0.0689 (0.573)	0.182 (0.164)	0.00304 (0.979)	0.0979 (0.505)
<i>Operating</i>	1.438*** (1.12e-07)	0.0416 (0.917)	-0.161 (0.569)	1.350*** (1.31e-05)	1.226*** (7.19e-06)	0.930*** (0.00675)
<i>Provision of Services</i>	-0.0109 (0.971)	-0.0477 (0.916)	-0.436 (0.177)	-0.150 (0.664)	0.143 (0.638)	0.110 (0.776)
<i>Other Contract</i>	0.385* (0.0537)	0.521* (0.0842)	-0.546** (0.0113)	0.190 (0.408)	0.205 (0.311)	0.555** (0.0319)
<i>Users</i>	0.149 (0.292)	0.620*** (0.00396)	-0.0775 (0.610)	0.173 (0.288)	0.280* (0.0515)	-0.236 (0.198)
<i>Nursery</i>	0.368** (0.0492)	0.103 (0.716)	0.391* (0.0530)	0.175 (0.417)	-0.0357 (0.851)	0.209 (0.389)
<i>Middle School</i>	-0.140 (0.684)	-0.824+ (0.113)	0.284 (0.442)	0.236 (0.552)	-0.0275 (0.937)	0.628 (0.158)
<i>High School</i>	-0.375 (0.154)	-0.235 (0.553)	-0.336 (0.236)	-0.0307 (0.919)	-0.529** (0.0485)	0.106 (0.755)
<i>Holidays</i>	0.215 (0.295)	-0.404 (0.195)	0.150 (0.498)	0.0922 (0.698)	-0.0824 (0.693)	0.184 (0.490)
<i>Retirement Home</i>	0.573** (0.0443)	0.295 (0.492)	0.744** (0.0156)	0.272 (0.406)	0.867*** (0.00290)	0.451 (0.221)
<i>Home Delivery</i>	0.573*** (0.000570)	0.319 (0.201)	0.733*** (4.81e-05)	0.668*** (0.000507)	0.457*** (0.00667)	0.141 (0.507)
<i>Hospital</i>	-0.308 (0.626)	-0.695 (0.467)	-0.745 (0.274)	-0.0396 (0.957)	-0.475 (0.459)	-0.686 (0.402)
<i>Other Client</i>	0.525+ (0.133)	-0.0478 (0.928)	0.343 (0.361)	0.522 (0.195)	0.0286 (0.936)	1.653*** (0.000309)
<i>Observations</i>	242	242	242	242	242	242
<i>Adjusted R-squared</i>	0.558	0.133	0.494	0.378	0.476	0.304

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

**PUBLIC RIGIDITY-CLAUSES**

	(7) OLS zContingen.	(8) OLS zLocal	(9) OLS zPenalties	(10) OLS zHealth	(11) OLS zLitigation	(12) OLS zTermination
<i>Meals</i>	0.000546*** (5.11e-08)	5.26e-06 (0.959)	0.00117*** (0)	0.000853*** (0)	0.000295*** (0.00203)	0.000330*** (4.34e-05)
<i>Population</i>	5.46e-07 (0.776)	-1.52e-06 (0.453)	2.72e-06 (0.220)	2.04e-06 (0.305)	1.78e-06 (0.343)	-6.34e-07 (0.686)
<i>Duration</i>	0.144*** (0.00235)	0.00989 (0.841)	0.101* (0.0632)	0.0348 (0.474)	0.0191 (0.676)	0.101*** (0.00849)
<i>Renewal</i>	0.0418 (0.736)	-0.0742 (0.569)	0.0747 (0.601)	-0.0351 (0.784)	-0.0539 (0.655)	0.0278 (0.784)
<i>Operating</i>	0.995*** (0.000632)	0.919*** (0.00266)	0.0340 (0.918)	0.106 (0.722)	2.659*** (0)	1.746*** (0)
<i>Provision of Services</i>	0.747** (0.0231)	0.840** (0.0153)	-0.388 (0.303)	-0.358 (0.290)	0.190 (0.550)	0.143 (0.592)
<i>Other Contract</i>	0.421* (0.0541)	-0.0747 (0.744)	-0.0550 (0.826)	-0.486** (0.0316)	0.370* (0.0816)	0.438** (0.0142)
<i>Users</i>	0.264* (0.0873)	0.383** (0.0191)	-0.371** (0.0378)	0.141 (0.379)	0.332** (0.0282)	0.282** (0.0261)
<i>Nursery</i>	0.228 (0.264)	-0.226 (0.293)	0.164 (0.485)	0.170 (0.421)	-0.146 (0.463)	0.319* (0.0566)
<i>Middle School</i>	-0.105 (0.779)	0.312 (0.431)	-0.155 (0.720)	-0.0957 (0.805)	-0.171 (0.640)	0.0714 (0.816)
<i>High School</i>	-0.164 (0.568)	-0.399 (0.188)	-0.173 (0.601)	-0.402 (0.177)	-0.668** (0.0178)	0.137 (0.558)
<i>Holidays</i>	-0.0585 (0.795)	-0.472** (0.0469)	0.353 (0.173)	0.136 (0.559)	-0.129 (0.555)	-0.119 (0.518)
<i>Retirement Home</i>	0.875*** (0.00519)	0.620* (0.0587)	0.440 (0.219)	1.640*** (6.80e-07)	0.416 (0.170)	0.535** (0.0358)
<i>Home Delivery</i>	0.719*** (8.54e-05)	-0.0734 (0.698)	0.557*** (0.00755)	0.394** (0.0352)	0.224 (0.202)	0.406*** (0.00611)
<i>Hospital</i>	-0.479 (0.487)	-0.123 (0.866)	-0.578 (0.467)	-0.549 (0.442)	-0.620 (0.357)	-0.302 (0.592)
<i>Other Client</i>	0.396 (0.300)	-0.156 (0.699)	0.359 (0.415)	-0.370 (0.349)	0.259 (0.487)	0.899*** (0.00422)
<i>Observations</i>	242	242	242	242	242	242
<i>Adjusted R-squared</i>	0.476	0.0995	0.387	0.457	0.458	0.538

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

## 11.6 PUBLIC RIGIDITY AND POLITICAL CONTESTATION BY CATEGORY – HHI

### IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY – PART 1

	(1) zArbitration	(2) zOrganic	(3) zConception	(4) zCertification	(5) zSustainable	(6) zEvaluation
<i>HHI 2<sup>nd</sup> round, 2014</i>	-2.424 (0.215)	-0.840 (0.752)	-2.947+ (0.106)	-2.621 (0.220)	-4.476** (0.0137)	-2.126 (0.347)
<i>Elected 1<sup>st</sup> round, 2014</i>	-1.063 (0.194)	-0.233 (0.835)	-1.221+ (0.110)	-0.946 (0.289)	-1.832** (0.0158)	-1.039 (0.272)
<i>Agenda 21</i>	0.165 (0.476)	-0.116 (0.713)	0.142 (0.511)	0.131 (0.604)	0.297 (0.164)	0.423+ (0.117)
<i>Meals</i>	0.000376*** (3.38e-05)	8.80e-05 (0.454)	0.000624*** (0)	0.000371*** (0.000151)	0.000587*** (7.78e-11)	0.000417*** (6.51e-05)
<i>Population</i>	5.55e-07 (0.855)	1.78e-08 (0.997)	2.33e-06 (0.413)	-3.25e-06 (0.330)	-3.09e-06 (0.270)	-2.92e-06 (0.408)
<i>Duration</i>	0.0645 (0.288)	-0.0215 (0.795)	0.0376 (0.505)	-0.0103 (0.876)	-0.0586 (0.291)	0.0771 (0.273)
<i>Renewal</i>	-0.00135 (0.993)	-0.0476 (0.826)	-0.109 (0.462)	0.267+ (0.126)	0.0329 (0.820)	-0.277+ (0.134)
<i>Operating</i>	1.504*** (0.000163)	0.181 (0.729)	0.757** (0.0350)	1.396*** (0.00118)	1.402*** (0.000125)	1.391*** (0.00220)
<i>Provision of Services</i>	-0.352 (0.427)	-0.138 (0.819)	-0.0717 (0.862)	-0.0562 (0.907)	0.214 (0.597)	0.380 (0.459)
<i>Other Contract</i>	0.213 (0.410)	0.682* (0.0568)	-0.234 (0.331)	-0.0276 (0.922)	0.311 (0.191)	0.452+ (0.133)
<i>Users</i>	-0.271 (0.472)	-0.402 (0.436)	-0.693* (0.0505)	0.0499 (0.903)	-0.215 (0.532)	-0.509 (0.244)
<i>Nursery</i>	0.171 (0.441)	0.107 (0.724)	0.317+ (0.127)	0.138 (0.570)	0.0141 (0.945)	0.0141 (0.956)
<i>Middle School</i>	0.452 (0.536)	0.0990 (0.921)	1.830*** (0.00845)	0.362 (0.650)	-0.0181 (0.978)	1.243+ (0.144)
<i>High School</i>	-0.152 (0.882)	0.601 (0.669)	-1.318 (0.170)	0.519 (0.643)	1.311 (0.165)	-0.145 (0.903)
<i>Holidays</i>	0.601 (0.230)	0.320 (0.640)	0.881* (0.0603)	-0.00519 (0.992)	0.197 (0.665)	0.692 (0.232)
<i>Retirement Home</i>	1.746** (0.0404)	2.364** (0.0425)	1.643** (0.0381)	-1.141 (0.216)	-0.654 (0.395)	2.390** (0.0159)
<i>Home Delivery</i>	0.574 (0.190)	1.105* (0.0663)	0.908** (0.0272)	0.753+ (0.116)	0.951** (0.0189)	-0.0693 (0.891)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.505	0.0724	0.572	0.410	0.586	0.337

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*



**IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY –  
PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>HHI 2<sup>nd</sup> round, 2014</i>	-3.009+ (0.114)	-4.566* (0.0718)	-1.591 (0.468)	-3.732** (0.0410)	-3.761* (0.0576)	-0.0669 (0.971)
<i>Elected 1<sup>st</sup> round, 2014</i>	-1.379* (0.0837)	-2.130** (0.0451)	-0.578 (0.529)	-1.763** (0.0214)	-1.649** (0.0468)	-0.113 (0.884)
<i>Agenda 21</i>	0.265 (0.241)	0.125 (0.676)	0.250 (0.338)	0.247 (0.251)	-0.104 (0.654)	-0.0299 (0.892)
<i>Meals</i>	0.000388*** (1.15e-05)	9.86e-05 (0.373)	0.000595*** (2.55e-08)	0.000659*** (0)	0.000161* (0.0646)	0.000318*** (0.000199)
<i>Population</i>	-2.07e-06 (0.486)	-2.73e-06 (0.489)	3.60e-06 (0.295)	8.43e-07 (0.765)	3.08e-06 (0.317)	2.17e-06 (0.456)
<i>Duration</i>	0.0384 (0.513)	-0.00372 (0.962)	0.0152 (0.823)	-0.0517 (0.357)	-0.0259 (0.670)	0.0177 (0.759)
<i>Renewal</i>	0.00612 (0.968)	0.104 (0.612)	0.0319 (0.858)	-0.0698 (0.634)	-0.225 (0.160)	-0.0448 (0.767)
<i>Operating</i>	1.210*** (0.00152)	0.106 (0.829)	0.215 (0.616)	0.158 (0.654)	3.186*** (0)	2.156*** (7.15e-08)
<i>Provision of Services</i>	-0.487 (0.259)	-0.248 (0.664)	-0.297 (0.550)	-0.180 (0.660)	0.0382 (0.932)	0.153 (0.718)
<i>Other Contract</i>	0.127 (0.612)	-0.0572 (0.864)	0.0450 (0.877)	-0.286 (0.234)	0.109 (0.675)	0.146 (0.554)
<i>Users</i>	0.0688 (0.850)	0.322 (0.507)	-0.477 (0.261)	-0.174 (0.617)	-0.594+ (0.119)	0.242 (0.501)
<i>Nursery</i>	-0.0634 (0.768)	-0.623** (0.0320)	0.0560 (0.823)	-0.00533 (0.979)	-0.178 (0.425)	0.180 (0.396)
<i>Middle School</i>	0.587 (0.408)	2.257** (0.0185)	0.826 (0.316)	0.412 (0.543)	0.944 (0.201)	0.722 (0.302)
<i>High School</i>	-0.414 (0.677)	-3.011** (0.0252)	-1.195 (0.302)	-0.581 (0.541)	-0.217 (0.833)	-0.507 (0.605)
<i>Holidays</i>	0.0833 (0.863)	-0.743 (0.250)	0.651 (0.247)	0.494 (0.286)	0.915* (0.0710)	-0.181 (0.703)
<i>Retirement Home</i>	0.899 (0.272)	-0.700 (0.519)	1.016 (0.284)	0.255 (0.743)	2.226*** (0.00995)	-0.178 (0.825)
<i>Home Delivery</i>	0.563 (0.185)	-0.101 (0.857)	0.286 (0.559)	0.365 (0.366)	0.711+ (0.107)	0.130 (0.753)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.534	0.177	0.374	0.576	0.499	0.549

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

## 11.7 PUBLIC RIGIDITY AND POLITICAL CONTESTATION BY CATEGORY – MARGIN

### IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY – PART 1

	(1)	(2)	(3)	(4)	(5)	(6)
	zArbitration	zOrganic	zConception	zCertification	zSustainable	zEvaluation
<i>Margin</i>	1.948 (0.236)	1.518 (0.497)	2.215+ (0.147)	3.585** (0.0437)	2.021 (0.191)	1.618 (0.389)
<i>Square Margin</i>	-3.109 (0.300)	-3.405 (0.404)	-2.739 (0.325)	-5.464* (0.0912)	-4.018 (0.155)	-4.446 (0.197)
<i>Elected 1<sup>st</sup> round, 2014</i>	-0.143 (0.453)	0.124 (0.633)	-0.153 (0.387)	-0.0242 (0.906)	-0.0183 (0.919)	-0.0978 (0.654)
<i>Agenda 21</i>	0.139 (0.560)	-0.174 (0.593)	0.142 (0.520)	0.0924 (0.718)	0.240 (0.285)	0.331 (0.228)
<i>Meals</i>	0.000365*** (5.91e-05)	8.36e-05 (0.477)	0.000611*** (0)	0.000357*** (0.000221)	0.000571*** (5.47e-10)	0.000410*** (7.91e-05)
<i>Population</i>	1.39e-06 (0.637)	2.78e-07 (0.945)	3.27e-06 (0.232)	-2.65e-06 (0.401)	-1.17e-06 (0.670)	-1.95e-06 (0.562)
<i>Duration</i>	0.0715 (0.255)	-0.0341 (0.689)	0.0575 (0.323)	-0.00148 (0.982)	-0.0542 (0.357)	0.0573 (0.424)
<i>Renewal</i>	0.0302 (0.852)	-0.0138 (0.950)	-0.0835 (0.577)	0.312* (0.0737)	0.0871 (0.565)	-0.223 (0.230)
<i>Operating</i>	1.320*** (0.000905)	0.150 (0.775)	0.488 (0.173)	1.124*** (0.00753)	1.174*** (0.00159)	1.355*** (0.00272)
<i>Provision of Services</i>	-0.226 (0.636)	0.0677 (0.917)	-0.0200 (0.964)	0.134 (0.793)	0.450 (0.317)	0.703 (0.201)
<i>Other Contract</i>	0.285 (0.273)	0.694* (0.0526)	-0.129 (0.592)	0.0769 (0.782)	0.402+ (0.101)	0.468+ (0.118)
<i>Users</i>	-0.0928 (0.804)	-0.376 (0.462)	-0.432 (0.215)	0.302 (0.453)	0.0188 (0.957)	-0.470 (0.274)
<i>Nursery</i>	0.157 (0.489)	0.127 (0.680)	0.276 (0.191)	0.103 (0.672)	0.0253 (0.905)	0.0618 (0.812)
<i>Middle School</i>	0.249 (0.736)	0.0503 (0.960)	1.538** (0.0270)	0.0489 (0.951)	-0.259 (0.708)	1.194 (0.160)
<i>High School</i>	-0.619 (0.534)	0.541 (0.690)	-1.987** (0.0336)	-0.0719 (0.946)	0.611 (0.513)	-0.302 (0.791)
<i>Holidays</i>	0.321 (0.518)	0.262 (0.699)	0.481 (0.298)	-0.409 (0.442)	-0.167 (0.720)	0.611 (0.284)
<i>Retirement Home</i>	1.373+ (0.114)	2.443** (0.0399)	0.997 (0.214)	-1.675* (0.0724)	-1.074 (0.186)	2.533** (0.0118)
<i>Home Delivery</i>	0.495 (0.260)	1.124* (0.0626)	0.773* (0.0597)	0.649 (0.169)	0.854** (0.0405)	-0.0431 (0.931)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.498	0.0685	0.569	0.424	0.558	0.342

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

**IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY –  
PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>Margin</i>	3.276** (0.0393)	-0.585 (0.786)	-0.105 (0.954)	3.016** (0.0496)	1.486 (0.376)	3.298** (0.0321)
<i>Square Margin</i>	-5.191* (0.0730)	0.349 (0.929)	1.331 (0.692)	-4.861* (0.0825)	-2.531 (0.410)	-5.585** (0.0466)
<i>Elected 1<sup>st</sup> round, 2014</i>	-0.271+ (0.140)	-0.198 (0.431)	-0.00406 (0.985)	-0.344* (0.0543)	-0.153 (0.435)	-0.185 (0.296)
<i>Agenda 21</i>	0.222 (0.333)	0.112 (0.721)	0.296 (0.271)	0.205 (0.355)	-0.130 (0.596)	-0.0871 (0.693)
<i>Meals</i>	0.000373*** (2.04e-05)	8.70e-05 (0.442)	0.000589*** (3.64e-08)	0.000642*** (0)	0.000147* (0.0977)	0.000312*** (0.000186)
<i>Population</i>	-1.19e-06 (0.672)	-3.31e-07 (0.932)	4.25e-06 (0.199)	2.13e-06 (0.435)	4.66e-06+ (0.123)	1.66e-06 (0.542)
<i>Duration</i>	0.0463 (0.441)	0.00805 (0.922)	0.0383 (0.585)	-0.0416 (0.473)	-0.0148 (0.817)	0.00825 (0.887)
<i>Renewal</i>	0.0533 (0.730)	0.129 (0.542)	0.0217 (0.905)	-0.0204 (0.891)	-0.189 (0.253)	-0.00683 (0.963)
<i>Operating</i>	0.947** (0.0116)	-0.0400 (0.937)	0.0705 (0.870)	-0.122 (0.731)	2.970*** (6.29e-11)	2.049*** (1.46e-07)
<i>Provision of Services</i>	-0.286 (0.532)	-0.184 (0.769)	-0.429 (0.424)	0.0203 (0.963)	0.165 (0.735)	0.378 (0.394)
<i>Other Contract</i>	0.229 (0.358)	0.00576 (0.987)	0.102 (0.727)	-0.176 (0.466)	0.196 (0.462)	0.185 (0.443)
<i>Users</i>	0.317 (0.377)	0.497 (0.314)	-0.330 (0.432)	0.0974 (0.779)	-0.372 (0.333)	0.323 (0.353)
<i>Nursery</i>	-0.0889 (0.682)	-0.599** (0.0470)	0.0202 (0.937)	-0.0258 (0.902)	-0.184 (0.430)	0.165 (0.431)
<i>Middle School</i>	0.288 (0.684)	2.133** (0.0303)	0.687 (0.408)	0.102 (0.882)	0.719 (0.343)	0.570 (0.405)
<i>High School</i>	-1.029 (0.281)	-3.660*** (0.00624)	-1.608 (0.152)	-1.293 (0.163)	-0.866 (0.396)	-0.592 (0.521)
<i>Holidays</i>	-0.314 (0.510)	-0.991+ (0.131)	0.442 (0.428)	0.0663 (0.885)	0.577 (0.259)	-0.336 (0.466)
<i>Retirement Home</i>	0.388 (0.638)	-1.066 (0.347)	0.542 (0.575)	-0.308 (0.700)	1.756** (0.0492)	-0.253 (0.751)
<i>Home Delivery</i>	0.460 (0.275)	-0.199 (0.729)	0.182 (0.711)	0.247 (0.544)	0.605 (0.180)	0.130 (0.749)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.539	0.133	0.368	0.569	0.474	0.570

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

## 11.8 PUBLIC RIGIDITY AND POLITICAL CONTESTATION BY CATEGORY – RESIDUAL HHI

### IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY – PART 1

		(1)	(2)	(3)	(4)	(5)	(6)
		zArbitration	zOrganic	zConception	zCertification	zSustainable	zEvaluation
<i>ResidualHHI</i>	<i>2<sup>nd</sup></i>	-4.075	-3.686	-5.967**	-8.396***	-6.067**	-1.275
		(0.175)	(0.367)	(0.0324)	(0.00931)	(0.0305)	(0.714)
<i>Elected</i>	<i>1<sup>st</sup> round,</i>	-0.626*	0.279	-0.0768	-0.675*	-0.438	-0.105
	<i>2014</i>	(0.1000)	(0.588)	(0.825)	(0.0934)	(0.212)	(0.811)
<i>Elected</i>	<i>2<sup>nd</sup> round,</i>	0.373	1.006	1.296*	1.108	0.942	0.354
	<i>2014</i>	(0.646)	(0.365)	(0.0856)	(0.199)	(0.212)	(0.708)
<i>Agenda 21</i>		0.171	-0.112	0.150	0.142	0.305	0.425+
		(0.460)	(0.723)	(0.482)	(0.562)	(0.156)	(0.117)
<i>Meals</i>		0.000391***	0.000106	0.000649***	0.000410***	0.000608***	0.000418***
		(2.19e-05)	(0.373)	(0)	(2.53e-05)	(5.73e-11)	(8.66e-05)
<i>Population</i>		5.76e-08	-1.09e-06	1.31e-06	-5.43e-06+	-3.41e-06	-2.41e-06
		(0.985)	(0.800)	(0.652)	(0.105)	(0.243)	(0.510)
<i>Duration</i>		0.0744	-0.0182	0.0495	0.000182	-0.0402	0.0859
		(0.216)	(0.824)	(0.369)	(0.998)	(0.468)	(0.220)
<i>Renewal</i>		0.0150	-0.0395	-0.0876	0.289*	0.0617	-0.265
		(0.924)	(0.855)	(0.547)	(0.0864)	(0.673)	(0.152)
<i>Operating</i>		1.290***	0.0486	0.472	1.062***	1.044***	1.262***
		(0.000974)	(0.925)	(0.177)	(0.00922)	(0.00362)	(0.00516)
<i>Provision of Services</i>		-0.337	-0.133	-0.0532	-0.0399	0.242	0.394
		(0.446)	(0.825)	(0.896)	(0.932)	(0.553)	(0.445)
<i>Other Contract</i>		0.231	0.673*	-0.219	-0.0350	0.353+	0.484+
		(0.368)	(0.0572)	(0.354)	(0.897)	(0.138)	(0.108)
<i>Users</i>		-0.173	-0.381	-0.579*	0.134	-0.0256	-0.411
		(0.635)	(0.443)	(0.0862)	(0.727)	(0.939)	(0.333)
<i>Nursery</i>		0.171	0.107	0.317+	0.137	0.0142	0.0145
		(0.441)	(0.724)	(0.123)	(0.560)	(0.945)	(0.955)
<i>Middle School</i>		0.361	0.0737	1.722**	0.274	-0.191	1.157
		(0.618)	(0.941)	(0.0114)	(0.720)	(0.776)	(0.173)
<i>High School</i>		-0.430	0.571	-1.627*	0.335	0.754	-0.456
		(0.660)	(0.669)	(0.0733)	(0.746)	(0.405)	(0.689)
<i>Holidays</i>		0.467	0.296	0.728+	-0.111	-0.0655	0.551
		(0.330)	(0.651)	(0.101)	(0.827)	(0.882)	(0.324)
<i>Retirement Home</i>		1.565*	2.360**	1.449*	-1.234	-1.026	2.172**
		(0.0563)	(0.0355)	(0.0548)	(0.152)	(0.173)	(0.0237)
<i>Home Delivery</i>		0.433	1.017*	0.720*	0.532	0.717*	-0.152
		(0.319)	(0.0888)	(0.0742)	(0.248)	(0.0766)	(0.763)

<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.505	0.0815	0.581	0.447	0.568	0.310

*pval in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$*

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**IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY –  
PART 2**

		(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>ResidualHHI</i>	<i>2<sup>nd</sup></i>	-8.178***	-3.553	-4.808	-8.949***	-4.659+	-5.561**
		(0.00445)	(0.366)	(0.152)	(0.00114)	(0.128)	(0.0488)
<i>Elected 1<sup>st</sup> round,</i>		-0.869**	-0.581	-0.0173	-0.432	0.183	-0.815**
<i>2014</i>		(0.0159)	(0.243)	(0.967)	(0.200)	(0.634)	(0.0227)
<i>Elected 2<sup>nd</sup> round,</i>		1.139+	0.488	1.003	1.839**	1.351+	0.535
<i>2014</i>		(0.137)	(0.647)	(0.270)	(0.0126)	(0.104)	(0.480)
<i>Agenda 21</i>		0.275	0.130	0.256	0.259	-0.0976	-0.0232
		(0.206)	(0.668)	(0.321)	(0.211)	(0.678)	(0.914)
<i>Meals</i>		0.000425***	0.000105	0.000617***	0.000697***	0.000176**	0.000349***
		(1.37e-06)	(0.358)	(1.14e-08)	(0)	(0.0492)	(4.57e-05)
<i>Population</i>		-3.97e-06	-1.97e-06	2.40e-06	-1.02e-06	2.99e-06	-8.00e-08
		(0.181)	(0.633)	(0.495)	(0.715)	(0.350)	(0.978)
<i>Duration</i>		0.0505	0.0151	0.0216	-0.0366	-0.0105	0.0177
		(0.369)	(0.847)	(0.746)	(0.492)	(0.863)	(0.751)
<i>Renewal</i>		0.0298	0.130	0.0449	-0.0418	-0.202	-0.0386
		(0.841)	(0.530)	(0.799)	(0.766)	(0.211)	(0.793)
<i>Operating</i>		0.865**	-0.192	0.0199	-0.240	2.897***	2.011***
		(0.0165)	(0.699)	(0.962)	(0.476)	(6.21e-11)	(1.81e-07)
<i>Provision of Services</i>		-0.468	-0.219	-0.288	-0.157	0.0620	0.153
		(0.260)	(0.705)	(0.560)	(0.690)	(0.890)	(0.711)
<i>Other Contract</i>		0.129	0.00432	0.0424	-0.276	0.148	0.110
		(0.593)	(0.990)	(0.882)	(0.228)	(0.570)	(0.645)
<i>Users</i>		0.174	0.530	-0.425	-0.0376	-0.432	0.215
		(0.610)	(0.268)	(0.296)	(0.907)	(0.244)	(0.527)
<i>Nursery</i>		-0.0643	-0.623**	0.0554	-0.00614	-0.178	0.179
		(0.757)	(0.0348)	(0.823)	(0.975)	(0.430)	(0.387)
<i>Middle School</i>		0.483	2.074**	0.772	0.279	0.798	0.735
		(0.478)	(0.0316)	(0.341)	(0.665)	(0.280)	(0.279)
<i>High School</i>		-0.669	-3.656***	-1.315	-0.931	-0.698	-0.355
		(0.466)	(0.00544)	(0.230)	(0.286)	(0.483)	(0.697)
<i>Holidays</i>		-0.0524	-1.037+	0.584	0.314	0.689	-0.130
		(0.907)	(0.101)	(0.275)	(0.462)	(0.159)	(0.770)
<i>Retirement Home</i>		0.755	-1.147	0.952	0.0454	1.902**	-0.0426
		(0.322)	(0.283)	(0.294)	(0.950)	(0.0231)	(0.955)
<i>Home Delivery</i>		0.334	-0.293	0.157	0.102	0.523	0.0317
		(0.412)	(0.607)	(0.746)	(0.791)	(0.238)	(0.938)
<i>Observations</i>		96	96	96	96	96	96
<i>Adjusted R-squared</i>		0.558	0.150	0.380	0.602	0.491	0.572

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*

## 11.9 PUBLIC RIGIDITY AND POLITICAL CONTESTATION BY CATEGORY – NUMBER OF LISTS

### IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY – PART 1

	(1) zArbitration	(2) zOrganic	(3) zConception	(4) zCertification	(5) zSustainable	(6) zEvaluation
<i>Number of Lists elected 1<sup>st</sup> round, 2014</i>	0.193 (0.186)	0.227 (0.245)	0.105 (0.440)	0.127 (0.416)	0.0283 (0.833)	0.0310 (0.854)
<i>Number of Lists 2<sup>nd</sup> round, 2014</i>	0.115 (0.666)	0.567+ (0.115)	0.360+ (0.150)	0.510* (0.0792)	0.526** (0.0354)	-0.0941 (0.762)
<i>Elected 1<sup>st</sup> round, 2014</i>	-0.272 (0.744)	1.104 (0.324)	0.723 (0.352)	1.230 (0.174)	1.422* (0.0678)	-0.522 (0.591)
<i>Agenda 21</i>	0.0876 (0.716)	-0.191 (0.554)	0.112 (0.618)	0.0974 (0.708)	0.307 (0.171)	0.406 (0.150)
<i>Meals</i>	0.000316*** (0.00147)	4.22e-05 (0.743)	0.000600*** (2.87e-09)	0.000348*** (0.00122)	0.000588*** (4.07e-09)	0.000398*** (0.000637)
<i>Population</i>	4.34e-07 (0.898)	-3.72e-06 (0.414)	1.25e-06 (0.692)	-5.47e-06+ (0.138)	-4.19e-06 (0.184)	-1.42e-06 (0.720)
<i>Duration</i>	0.0741 (0.225)	-0.0318 (0.697)	0.0405 (0.476)	-0.0130 (0.843)	-0.0556 (0.324)	0.0893 (0.209)
<i>Renewal</i>	0.0376 (0.816)	-0.0364 (0.866)	-0.0963 (0.523)	0.273+ (0.120)	0.0302 (0.840)	-0.256 (0.176)
<i>Operating</i>	1.404*** (0.000342)	0.240 (0.634)	0.689* (0.0523)	1.370*** (0.00112)	1.302*** (0.000337)	1.274*** (0.00461)
<i>Provision of Services</i>	-0.235 (0.602)	-0.0406 (0.947)	-0.0165 (0.969)	0.000505 (0.999)	0.226 (0.589)	0.417 (0.429)
<i>Other Contract</i>	0.260 (0.316)	0.653* (0.0628)	-0.210 (0.385)	-0.0241 (0.931)	0.340 (0.158)	0.504* (0.0971)
<i>Users</i>	-0.0809 (0.831)	-0.403 (0.429)	-0.594* (0.0960)	0.101 (0.805)	-0.129 (0.714)	-0.360 (0.416)
<i>Nursery</i>	0.0365 (0.882)	-0.110 (0.737)	0.204 (0.372)	-0.00993 (0.970)	-0.0734 (0.746)	0.00825 (0.977)
<i>Middle School</i>	0.253 (0.730)	-0.0437 (0.965)	1.657** (0.0173)	0.194 (0.807)	-0.214 (0.753)	1.136 (0.186)
<i>High School</i>	-0.315 (0.765)	1.356 (0.339)	-1.249 (0.206)	0.865 (0.448)	1.339 (0.173)	-0.617 (0.616)
<i>Holidays</i>	0.326 (0.520)	0.344 (0.613)	0.753+ (0.114)	-0.0575 (0.916)	0.0975 (0.835)	0.470 (0.427)
<i>Retirement Home</i>	1.231 (0.165)	2.411** (0.0441)	1.458* (0.0789)	-1.184 (0.216)	-0.725 (0.375)	1.994* (0.0549)
<i>Home Delivery</i>	0.419	0.971+	0.771*	0.612	0.799*	-0.141

	(0.340)	(0.101)	(0.0620)	(0.198)	(0.0516)	(0.782)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.501	0.100	0.565	0.417	0.572	0.322

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*pval in parentheses, \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ , +  $p < 0.15$*

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**IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY CATEGORY –  
PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>Number of Lists elected 1<sup>st</sup> round, 2014</i>	0.101 (0.476)	0.0718 (0.702)	-0.0224 (0.891)	-0.103 (0.441)	-0.101 (0.494)	0.0599 (0.665)
<i>Number of Lists 2<sup>nd</sup> round, 2014</i>	0.274 (0.294)	0.572+ (0.100)	0.246 (0.412)	0.522** (0.0356)	0.271 (0.320)	-0.0968 (0.704)
<i>Elected 1<sup>st</sup> round, 2014</i>	0.356 (0.662)	1.171 (0.279)	0.837 (0.373)	1.533** (0.0479)	0.942 (0.269)	-0.525 (0.509)
<i>Agenda 21</i>	0.233 (0.324)	0.118 (0.705)	0.270 (0.320)	0.313 (0.160)	-0.0487 (0.843)	-0.0595 (0.795)
<i>Meals</i>	0.000361*** (0.000241)	8.84e-05 (0.479)	0.000607*** (2.78e-07)	0.000701*** (0)	0.000192* (0.0536)	0.000296*** (0.00177)
<i>Population</i>	-2.58e-06 (0.437)	-4.20e-06 (0.340)	2.95e-06 (0.440)	-1.88e-07 (0.952)	3.58e-06 (0.302)	2.61e-06 (0.421)
<i>Duration</i>	0.0441 (0.459)	-0.00111 (0.989)	0.0139 (0.838)	-0.0538 (0.337)	-0.0202 (0.745)	0.0219 (0.706)
<i>Renewal</i>	0.0230 (0.884)	0.106 (0.611)	0.0219 (0.904)	-0.0988 (0.506)	-0.240+ (0.149)	-0.0286 (0.853)
<i>Operating</i>	1.121*** (0.00305)	0.00812 (0.987)	0.193 (0.648)	0.0997 (0.773)	3.077*** (0)	2.130*** (7.17e-08)
<i>Provision of Services</i>	-0.428 (0.334)	-0.214 (0.714)	-0.315 (0.535)	-0.247 (0.553)	-0.0117 (0.980)	0.193 (0.655)
<i>Other Contract</i>	0.161 (0.524)	-0.0279 (0.934)	0.0468 (0.872)	-0.279 (0.243)	0.143 (0.588)	0.162 (0.512)
<i>Users</i>	0.193 (0.602)	0.423 (0.390)	-0.481 (0.261)	-0.194 (0.579)	-0.538 (0.167)	0.305 (0.400)
<i>Nursery</i>	-0.163 (0.498)	-0.744** (0.0212)	0.0370 (0.893)	-0.0109 (0.961)	-0.151 (0.546)	0.156 (0.504)
<i>Middle School</i>	0.412 (0.566)	2.036** (0.0345)	0.774 (0.349)	0.315 (0.641)	0.841 (0.263)	0.687 (0.327)
<i>High School</i>	-0.479 (0.643)	-2.916** (0.0354)	-1.112 (0.350)	-0.484 (0.618)	-0.483 (0.654)	-0.634 (0.529)
<i>Holidays</i>	-0.0865 (0.861)	-0.862 (0.191)	0.669 (0.242)	0.551 (0.239)	0.851+ (0.103)	-0.279 (0.564)
<i>Retirement Home</i>	0.630 (0.466)	-0.814 (0.476)	1.105 (0.267)	0.500 (0.538)	2.223** (0.0153)	-0.385 (0.647)
<i>Home Delivery</i>	0.427 (0.320)	-0.275 (0.628)	0.245 (0.620)	0.291 (0.472)	0.641 (0.154)	0.105 (0.802)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.522	0.161	0.367	0.577	0.480	0.545

*pval in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.10, + p<0.15*