
“Political connections, corruption, and privatization of public services: Evidence from contracting out water services in Spain”

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Abstract

Political corruption is a type of market failure. One area of public policy where corruption is relatively common is the contracting out of public services. Private firms can improve their chances of obtaining contracts by bribing politicians or public servants and funding political parties. In the same vein, firms can gain access to policy makers by hiring influential former politicians –a practice commonly referred to as *revolving-doors*. In Spain, a number of corruption cases, involving all the major political parties, are presently under judicial investigation. Some of these cases involve water contracts. Also, there is evidence showing that private firms have been funding political parties as well as hiring former politicians for top positions. In this paper, we use information from 892 privatizations of water services in Spanish municipalities between 1984 and 2014 and logistic multinomial regression techniques to study the association between specific firms securing contracts and the political parties ruling the municipalities. We find evidence of a systematic association between the Popular Party (*Partido Popular* or PP) and the firm, *Aqualia*, part of the large Spanish holding company, *Fomento de Construcciones y Contratas* (FCC), which is known to have funded the PP. Furthermore, former PP politicians have been appointed to top positions in the FCC board of directors.

JEL classification: D73; L33; L95

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POLITICAL CONNECTIONS, CORRUPTION, AND PRIVATIZATION OF PUBLIC SERVICES: EVIDENCE FROM CONTRACTING OUT WATER SERVICES IN SPAIN

1. Introduction

Political corruption is a type of non-market failure (Wolf, 1979), which negatively affects investment and growth (Mauro, 1995; Beekman, G. *et al.*, 2014; Serritzlew *et al.*, 2014) and innovation (Mungiu-Pippidi, 2015). Although more evident in developing countries, corruption affects all countries to some extent (OECD, 2007; Transparency International, 2014; Hessami, 2014), and it is still a matter of controversy whether corruption increases or decreases with decentralization (Fan, Lin, Treisman, 2009; Oto-Peralías, Romero-Ávila, Usabiaga, 2013). One of the fields most closely linked to political corruption is that of privatization of public services (Hart *et al.*, 1997). Regardless of how the concession process is structured, some companies secure public service contracts in exchange for kickbacks. This practice is contrary to the public interest, because it does not guarantee that the best-performing company is awarded the contract. This is therefore likely to lead to inefficiency (Dal Bó, & Rossi, 2007) and extra service delivery costs (Dastidar & Mukherjee, 2014), which will ultimately be borne by users or by taxpayers (Rose-Ackerman, 1999). In short, it adversely affects the expected social welfare of an auction (Boehm & Olaya, 2006).

The financing of political parties has been a controversial issue in Spain since the reestablishment of democracy. It is recognized that the rules on financing of political parties establishes too restrictive a framework for obtaining resources, and creates a system that is overly dependent on government subsidies (Pujas & Rhodes, 1999; Casal *et al.*, 2014). Some authors argue that tighter financing regulations stimulate corruption (Rose-Ackerman, 1978; Sajo, 1998). In fact, this has been used in Spain as an argument to explain why political parties have irregularly obtained resources at some point (Bel *et al.*, 2014). Thus, from the 1990s the parties have been investigated by judiciary courts and by the Court of Auditors (*Tribunal de Cuentas*) over events such as the cancellation of political

parties' bank debts, corporate donations, and bribery. In this context, according to Ariño (2009), decisions related to the procurement of public services are one of the main sources of political corruption in Spain.

There are reasonable grounds for doubt as to the existence of systematic bribery in procurement of water service in Spain. On one hand, scholars and politicians recognize that party funding regulations in Spain have been very restrictive. Legally, most of the funding comes from government transfers. Donations are limited to €60,000 per donor, and the contributions by party members are largely insignificant. Furthermore, the processes for awarding contracts are not characterized by transparency and independence. The lack of transparency was partially addressed some years ago by the Law 30/2007 on public sector contracts. However, external control is insufficient, and the entire hiring process is under the control of local government itself. Finally, an additional problem is the difficulty faced by the judiciary in obtaining evidence of malpractice, and the lengthy judicial processes that go on for ten years or more. An index recently developed by the RAND Corporation (Stanley *et al.*, 2014) assesses aspects such as the expectation of bribes and the anti-bribery laws, and ranks Spain as one of the developed countries with the highest risk of bribery.

In this framework, our research analyzes the possible existence of favorable treatment by the main Spanish political parties to the private companies that are the leading actors in urban water service management in Spain. In the international arena, several authors have warned of corruption cases involving water companies and political parties (Lobina, 2005; Hall & Lobina, 2007; Hall *et al.*, 2013). Our hypothesis is that political parties might be seeking illegal funding for their activities in exchange for systematically favoring certain firms in the process of awarding water service contracts. This is a reasonable suspicion in Spain if we take into account the many cases that are currently under judicial investigation for alleged corporate payments in exchange for preferential treatment in the awarding of public contracts for water service management (Global Water Intelligence, 2013).

2. Literature review

The study of rent-seeking has long been a key element in the analysis of the motivations of government's decisions. In his seminal paper, Stigler (1971) discusses financial support for electoral campaigns, and funding for the bureaucratic tasks of the political party machinery as potential demands that governing parties can make in exchange for regulation in favor of specific industries or firms. Shleifer & Vishny (1993) argue that the design of institutions and the political process are important determinants of the level of corruption. More closely related to public services delivery, Hart *et al.* (1997) show that the policy makers engaging in rent-seeking are incentivized to create overemployment when public services are delivered in-house, thus engaging in political patronage and obtaining political support. Conversely, if service delivery is contracted out, rent-seeking politicians will tend to obtain financial resources (rather than over-employment). These financial resources can be used to fund political activities (elections and party machinery), for personal enrichment, or both at the same time.

There is relevant theoretical literature on bribery in procurement processes (OECD, 2007; Celentani & Ganuza, 2002; Burguet & Che, 2004; Menezes & Monteiro, 2006; Burguet & Perry, 2007; Koc & Neilson, 2008; Lengwiler & Wolfstetter, 2010), but available evidence is extremely scarce. In fact, the main problem when investigating bribery in public procurement is the difficulty of obtaining evidence. This is because there is no legal market for corruption and bribery and so those involved hide this illegal activity. A methodological approach to investigate the relationship between bribery and public procurement is through questionnaires, but the results tend to underestimate the scale of the corruption (Reinikka & Svensson, 2006; Olken, 2009). More recently, Buchner *et al.* (2008) and Mironov & Zhuravskaya (2012) propose an experimental study to induce the behavior of agents, but this method of analysis also has limitations (Guala, 2005; Ortmann, 2005).

The empirical works tend to focus on the political factors explaining the extent of corruption and its political effects, and typically use judiciary inquiries and media scandals as data. In the case of Spain, Costas-Pérez *et al.*, (2012) analyze local corruption in 1999-2007 and find that average vote loss after a corruption scandal was around 4 percent, and –interestingly– punishment is more severe when there has been intense media attention. Jiménez & García (2012) analyze local corruption in 2000-2011 and find that corruption increases (although moderately) voter abstention, and also has partisan effects. Costas-Pérez (2014) finds that repeated corruption cases promote abstention, and that voters with no attachment to any political party are the only ones that withdraw from elections because of corruption, while parties’ core supporters do not modify their electoral participation. Solé-Ollé & Sorribas-Navarro (2014) find that corruption scandals have a marked negative effect on trust in local politicians, particularly among citizens with no strong party attachment (to the party in question) and who follow media news more frequently. A more recent paper by González Lopez-Valcárcel *et al.* (2015) analyzes whether there are mimetic effects between neighboring municipalities and finds some contagious effects of corruption.

Our research takes a different path. We analyze the potential relationships between the successful tenderers for the water service and the governing political parties in the town when the contest is granted. The study centers on 892 agreements to privatize water services management made by local governments in Spain between 1984 and 2014. The methodology used is multinomial logistic regression. Our results show evidence of a significant association between the frequency of specific firms obtaining (or not) the contracts, and the presence of a specific political party in government. In this way, we contribute to the literature by providing evidence of systematic bias in awarding contracts, depending on the governing political party in the municipality.

3. A short review of judicial investigations, suspicions of bribery and political connections related to contracting of local public services in Spain.

When Spaniards these days are surveyed about Spain's problems, corruption is revealed to be a major concern (Schwab, 2014; European Commission, 2014). Suspicions of corruption and judiciary investigations affect many areas of public policy and virtually all political parties that have held significant government positions in the last decades. Within this context, there are many cases of procurement under investigation by the Spanish judiciary for alleged bribery. A number of contracts are under judicial investigation, such as those relating to the *Gürtel Case*, the *Púnica Operation*, and the *Pokemon Case* (also known as the *Bárceñas Case*),¹ among others. In these cases, investigations focus on major business groups that operate in Spain. For instance, within the investigation of the *Gürtel Case*, a judiciary writ issued by the Spanish *Audiencia Nacional* –one of Spain's highest judicial bodies– (*Juzgado de Instrucción Central* n. 5; Writ of November 26, 2014, pp. 94–95) presents indicia that a concessionaire owned by *Fomento de Construcciones y Contratas* (FCC) and *SUFI Group* did pay commissions in exchange for local services contracts in the municipality of Majadahonda (Madrid), which was governed by the Popular Party.

Furthermore, within the investigation of the *Bárceñas Case* it has been proved that large business groups did supply large amounts of money to the Popular Party. Between 2002 and 2009, FCC contributed €5.03 million to the Popular Party, making it the second largest donor after the public works company *Sacyr*, which contributed about €6 million.² Indeed, José María Mayor Oreja, former president of FCC's construction division and brother of Jaime Mayor Oreja, minister in the Popular Party central government between 1996 and 2001, admitted before Judge

¹ This case has been named the *Bárceñas Case* after Luis Bárceñas, who was Manager (1982-1987, 1993-2008) and later Treasurer (2008-2009) of the Popular Party, and also member of the Senate for this party (2004-2010). The Popular Party holds the central government in Spain, as well as most regional and local governments.

² See details in *Huffington Post*, 11 May 2014 (http://www.huffingtonpost.es/2014/11/05/hacienda-caso-barcenas_n_6108430.html); and *Europa Press*, 11 May 2014 (<http://www.europapress.es/nacional/noticia-barcenas-hacienda-cree-no-hay-correlacion-temporal-donaciones-pp-contratos-publicos-20141105165940.html>).

Ruz (*Audiencia Nacional*, investigation into the *Bárceñas Case*) that he had made financial contributions to the Popular Party.³

Within the water distribution sector itself, numerous cases of bribery have been subject to judicial investigation. Those cases have been frequent enough as to be the object of a report issued by Global Water Intelligence (Global Water Intelligence, 2013), which provides extensive information on judiciary inquiries affecting the two major water distribution firms in Spain, *Aqualia* and *Agbar*, as well as minor firms such as *Emarsa* and *Aguas de Valencia*.⁴ In addition to ongoing cases at different stages of legal proceedings, other contracting cases have been denounced by opposition political parties, alleging irregularities of various kinds. Moreover, we must keep in mind that, due to the hidden nature of criminal activity, there may well be a number of bribery cases that remain unseen.

Finally, mention has to be made of the common practice of *revolving-doors* between politics and big business in Spain, as documented by Castell & Trillas (2013, pp. 109–110). This practice means that politicians holding high positions in government are subsequently appointed as members of the Board of Directors of large firms that have regulatory or contractual relations with the government, after they have withdrawn from institutional political activities. Within the context of this study, it is worth recalling that two prominent former members of the Popular Party were members of the FCC Board of Directors at the end of 2014 (FCC, 2015, p. 3). One was Marcelino Oreja Aguirre, minister in the Spanish government (1976–1980) and first Popular Party candidate elected to the European Parliament in the 1989 election. He was later appointed Commissioner of Transportation and Energy for the European Commission (1994–1999), a job which he was put forward for by the Popular Party. The second was Gustavo Villapalos Salas, who had formerly been minister of Education, Culture, and

³ See *El País*, 28 May 2013 (http://politica.elpais.com/politica/2013/05/28/actualidad/1369751484_277881.html).

⁴ Judicial inquiries and investigations have been set up with respect to concessions awarded to *Aqualia* in Andalusia and Castile-La Mancha, to concessions awarded to *Agbar* in Galicia and Asturias, and to concessions awarded to *Acciona* in Castile-La Mancha. Different political parties were involved in cases affecting each firm.

Sports (1995-2001) in the regional government of Madrid, under the ruling of the Popular Party. It is also interesting to note that in 2001, Abel Matutes was appointed to the FCC Board of Directors just after being minister of foreign affairs in the Popular Party's first government (1996-2004). He was a member of that board for most of the last decade. No such political connections with former members of governments exist in the Boards of Directors of others firms in the urban water delivery sector; neither in *Agbar*⁵ –the other dominant firm–, nor in other firms with lesser market share.

The question we address is whether the sum of the cases under legal proceedings, cases reported by local opposition parties, and the unknown number of unrecognized cases, are isolated cases of corruption caused by some members of municipal governments seeking illicit enrichment; or, on the contrary, if it is conceivable that this reflects a more complex plot, in which members of municipal governments act on the instructions of their political party to finance its activities. The hypothesis to be tested is the existence of a systematic relationship between companies that win privatization contests, and the political party that holds the municipal government. If there are indeed significant relationships, these could be interpreted as evidence of favoritism that should be investigated, given the possible use of bribery to illicitly finance political parties.

4. Privatization of urban water management in Spain

4.1 Legal framework

In Spain, municipal governments are responsible for the urban water supply, and they can choose between different forms of service delivery⁶, which are set out in the current legislation. First, the municipal government may choose to manage the service in-house (the government itself manages the service) or to externalize

⁵ Actually, five out of the seven members of *Agbar*'s Board of Directors are French. Its Executive President has never had any involvement in institutional activities.

⁶ The regulation of the management of municipal services in Spain is set out in Law 7/1985 (Local Government Regulations) and Law 57/2003 (Measures for the Modernization of Local Government).

it. Externalization can be effected by means of transferring delivery to a government-owned company (public firm), or privatizing it. In case of the latter option, privatization can be either partial, by means of a mixed firm (institutional public-private partnership, PPP), or full, whereby the service is contracted out to a private firm (contractual public-private partnership).⁷

The comparative prevalence of different delivery forms varies widely between Spanish regions. In the last decades concession agreements have increasingly been used by municipal governments (Bel, 2006). By means of concession agreements, municipal governments award a public services management contract to a private firm. The government usually retains the ownership of the assets and the ultimate responsibility for the service, while the private firm manages the service during the term of the contract.⁸ After a competitive bidding process, the water service management is awarded to a private company for a fixed period of time. This period of time cannot exceed 25 years in management-only contracts, but contracts involving the construction and operation of infrastructure can extend to 50 years.

The bidding process develops as follows: first, an announcement of the public tender of the contract is made, which includes the technical and economic conditions of the contract and the procedure and assessment criteria. Details are also given on the commitments that must be fulfilled by the private firm awarded the contract. In light of all that information, private firms place a first-price sealed-bid, in which bidders must submit their technical and financial proposal. Finally, the municipal government awards the contract to the firm that made the best proposal with respect to a number of criteria.

⁷ Although private firms sometimes own the water system assets in Spain, this is very unusual. For instance, among the large cities, Barcelona is the only such case.

⁸ Partial privatization, by means of mixed firms, is also becoming increasingly common. Ownership is shared between the government, who usually retains ownership of a large fraction of the firm's capital and is expected to ensure the public interest, and the private partner, who has know-how of the industry and is often in charge of the day-to-day management (Warner & Bel, 2008, González-Gómez *et al.*, 2009).

4.2. *The urban water industry in Spain: Evolution and current situation*

The participation of the private sector in the management of urban water supply in Spain is among the largest in the OECD countries, as a percentage of the population served, second only to France (Pérard, 2009).⁹ According to González-Gómez *et al.* (2014), in 23 percent of Spanish municipalities urban water supply is delivered via one of the forms of private management referred to in the legal system. However, this percentage rises to 55 percent when expressed in terms of population. This is indicative of the concentration of the privatization process in the more populated municipalities. Cities where private companies –whether fully private or partially private– deliver the water service have an average population of 14,008 inhabitants, whereas cities where urban water is managed by the public sector have an average population of 3,416 inhabitants.

After the entry into force of Law 7/1985 (Local Government Regulations), many Spanish municipalities decided to privatize the management of water services. The main motivations for water privatization in Spain have been pragmatic and, to a lesser extent, ideological and political (González-Gómez *et al.*, 2011; Picazo-Tadeo *et al.*, 2012). These results align closely with those obtained in Bel & Fageda's (2009) meta-regression analysis to explain local privatization decisions.

One of the features of the Spanish model of privatization is the high concentration of private participation in a few dominant firms. Data obtained from our fieldwork shows that *Agbar* –an acronym of *Aguas de Barcelona*– and *Aqualia* groups are involved in the management of 67 percent of the municipalities that have privatized the delivery of urban water service. In terms of population, these two companies control 75 percent of the private part of the industry. It is worth recalling that our figures are quite similar to those obtained by Bel (2006, p. 246), which showed that in 2003 *Agbar* and *Aqualia* together made up 72 percent of the concessions, and served 82 percent of the population. Clearly, the market

⁹ Private ownership of the water system assets is the general rule in England and Wales, and also in the Czech Republic.

structure of the water industry in Spain is characterized by an oligopoly with two dominant companies. Furthermore, these companies are integrated into two major business groups.

Agbar is a subsidiary of the French holding *Suez Environment*. It comprises over 150 companies and around 13,000 employees, and provides water services not only in Spain but also in countries such as the United Kingdom, Mexico, China, Chile, Cuba, Colombia and Algeria; moreover, this company operates under diverse denominations in different Spanish regions.¹⁰ *Aqualia* belongs to *Fomento de Construcciones y Contratas* (FCC), a group that used to be controlled by the Spanish Koplowitz family, until *Inmobiliaria Carso* (owned by the Mexican magnate Carlos Slim) bought a 25.6 percent ownership stake in FCC in late 2014 (FCC, 2015), thus becoming the major shareowner. In addition to providing water services to more than 850 Spanish municipalities, this holding company is also present in more than 50 countries, including China, Mexico, Portugal, the Czech Republic, Poland and Algeria.

Another notable feature of the Spanish model of urban water services provision is the regional specialization of the private part of the industry. Although these leading firms have a presence throughout Spain, over time they have strengthened their positions in certain geographical areas. *Agbar* has a leading position in Catalonia and a major presence in the provinces of Alicante, Murcia, Granada and Ciudad Real, among others. *Aqualia* has a greater presence in the municipalities of the Andalusian coast, Toledo and Badajoz. Meanwhile, there are a few private firms of a markedly local nature, such as *Aguas de Valencia* in the province of Valencia, *Facsá* in the province of Castellón, *Prodaisa* in Girona, and *Espina & Delfín* in Galicia.

¹⁰ These are *Aigües de Barcelona* in the metropolitan area of Barcelona and *Sorea* in the rest of Catalonia; *Aquanex* in Extremadura; *Aquara* in Aragon; *Aquarbe* in Cantabria, Basque Country and La Rioja; *Aquaona* in Castile-La Mancha and Castile and León; *Asturagua* in Asturias; *Canaragua* in the Canary Islands; *Hidralia* in Andalusia; *Hidraqua* in the Valencian Community; *Hidrobal* in the Balearic Islands; *Hidrogea* in Murcia; and, finally, *Viaqua* in Galicia.

5. Data and methodology

5.1. Variables, data and sources

In this paper, we use information from 892 privatizations of the urban water service that occurred in Spain between 1984 and 2014. Given that our aim is to shed some light on why local governments choose one particular firm over other alternatives, the first variable of interest is the name of the firm to which the contract was awarded.

As already noted, private firms, either contractual or institutionalized PPPs, manage the urban water service in approximately 1,800 Spanish municipalities in 2014. It is worth noting that until 2008 there was no public register with information about contracting procedures of local services in Spain. From April 30th 2008, however, the Law 30/2007 on public sector contracts required local administrations to create an institutional webpage named *Contractor Profile*, which is aimed at ensuring transparency and affording public access to the information relating to the contractual activity of public administrations. Accordingly, from this date onwards, when a local government privatizes the management of a given service it must grant public access through the abovementioned webpage to all information related to the privatization. We have thus made use of this resource to collect information about privatizations taking place after Law 30/2007 was passed, and particularly the name of the firm awarded the contract for the urban water service provision.

In addition, we submitted postal or electronic requests to local councils that had privatized the service before that time, asking them for the date of the town council plenary session in which the decision to privatize was taken. We then referred to municipalities' *Official Gazettes* to obtain the name of the provider of the urban water service. Furthermore, in a few cases, we obtained this information directly from the webpages of the town councils.

Taking the two abovementioned sources together, we have collected information about 892 privatizations of the urban water service that occurred in Spanish municipalities during the period 1984-2014, which represent nearly 50 percent of total privatizations.

For the purpose of our research, we have firstly established three possible options for the firm chosen to privatize the urban water service, namely, *Aqualia*, *Agbar* and *Others*. The group *Others* includes all firms other than those included in the first two groups, e.g., firms that operate at national level such as *Acciona*, *Agua & Gestión*, *Gestagua*, *Hidrogestión*, *Urbaser* and *Valoriza*, in addition to some companies that, as mentioned, operate mainly at regional level, including *Aguas de Valencia*, *Facsa*, *Prodaisa* and *Espina & Delfín*. Table 1 shows the shares of each one of these three alternatives in terms of the total privatizations included in our sample for the whole period 1984-2014. We also identify the political party ruling the local government at the time when the decision to privatize was taken.

Table 1. Privatizations of the urban water supply in Spanish municipalities, 1984-2014: Frequencies in the sample (number of cases; percentage in brackets).

Firm	Total	Political party ruling the local government		
		PSOE	PP	Others
<i>Aqualia</i>	304 (34.1)	153 (39.7)	107 (36.4)	44 (20.8)
<i>Agbar</i>	301 (33.7)	120 (31.1)	71 (24.1)	110 (51.8)
<i>Others</i>	287 (32.2)	113 (29.2)	116 (39.5)	58 (27.4)
<i>TOTAL</i>	892 (100.0)	386 (100.0)	294 (100.0)	212 (100.0)

Source: Authors

In our sample, *Aqualia* was chosen to privatize the urban water service 304 times (34.1 percent), the *Agbar* group 301 times (33.7 percent), while firms included in the group *Others* were chosen 287 times (the remaining 32.2 percent). Both of the two biggest Spanish political parties, the Spanish Socialist Workers' Party (*Partido Socialista Obrero Español* or PSOE) and the Popular Party (PP) have awarded more contracts to *Aqualia* than the average that this firm obtained all over Spain, while

the opposite happens in the case of *Agbar*, to which PSOE, and particularly PP, have awarded a lower percentage of contracts than the share of contracts that *Agbar* has obtained all over Spain.

Secondly, we have selected two sets of variables aimed at explaining the choice of the firm selected to privatize the urban water service, relating to some features of the municipality, and also to the party in power of the local government at the time the decision was made. On the one hand, the control variables related to the municipality that privatizes the urban water service include *Population*, measured as the number of inhabitants in 2012 and taken from the Spanish Statistical Office (INE); *Economic activity*, measured by the indicator of economic activity provided for Spanish municipalities by La Caixa (2014). And, lastly, sixteen geographical dummies with a value equal to 1 if the municipality belongs to the regions of *Andalusia, Aragon, Asturias, Balearic Islands, Basque Country, Canary Islands, Cantabria, Castile-La Mancha, Castile and León, Catalonia, Extremadura, Galicia, Madrid, Murcia, La Rioja* and the *Valencian Community*, and 0 otherwise.¹¹

On the other hand, the political variables intended to capture the effect of the party in power in the local government are the following: *PSOE*, which is a dummy that equals 1 if the left-wing Spanish Socialist Workers' Party was in power when the decision to privatize was taken and 0 otherwise; and *PP*, which takes a value of 1 if the right-wing Popular Party was ruling the local government at the time of privatization and 0 otherwise. In both cases the data come from the Spanish Ministry of Finance and Public Administration. *Majority* is a dummy equal to 1 if the party in power, either *PSOE* or *PP*, held a majority when the decision to privatize was taken, and 0 otherwise; this variable is defined by the number of city councillors, with data from the Spanish Ministry of Home Affairs. Finally, *Continuity* is a dummy that takes a value of 1 if the decision to privatize was taken in the second or a subsequent term of office of the party ruling the town council. Table 2 presents some basic statistics of these variables.

¹¹ In this respect is it worth highlighting that these dummies represent all Spanish regions except *Navarra*, for which we have no observations in the sample.

Table 2.- Sample description: Explanatory variables

	<i>All</i>		<i>Aqualia</i>		<i>Agbar</i>		<i>Others</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Population (<i>inhabitants</i>)	17,765	35,610	19,556	35,097	20,391	42,936	13,137	26,103
Economic activity (<i>no dimension</i>)	30.28	77.75	31.88	72.58	36.19	97.58	22.43	56.32
Andalusia	0.299	-	0.392	-	0.182	-	0.138	-
Aragon	0.022	-	0.013	-	0.026	-	0.027	-
Asturias	0.017	-	0.019	-	0.033	-	0.000	-
Balearic Islands	0.012	-	0.013	-	0.003	-	0.020	-
Basque Country	0.006	-	0.006	-	0.013	-	0.000	-
Canary Islands	0.019	-	0.023	-	0.029	-	0.003	-
Cantabria	0.030	-	0.013	-	0.019	-	0.059	-
Castile-La Mancha	0.152	-	0.191	-	0.099	-	0.166	-
Castile and León	0.057	-	0.062	-	0.093	-	0.013	-
Catalonia	0.162	-	0.066	-	0.295	-	0.125	-
Extremadura	0.058	-	0.075	-	0.043	-	0.055	-
Galicia	0.054	-	0.026	-	0.063	-	0.076	-
Madrid	0.002	-	0.000	-	0.000	-	0.006	-
Murcia	0.034	-	0.042	-	0.029	-	0.031	-
La Rioja	0.006	-	0.013	-	0.003	-	0.003	-
Valencian Community	0.122	-	0.039	-	0.063	-	0.270	-
<i>Political variables</i>								
PSOE	0.423	-	0.504	-	0.398	-	0.392	-
PP	0.329	-	0.349	-	0.235	-	0.406	-
Majority	0.665	-	0.663	-	0.641	-	0.694	-
Continuity	0.681	-	0.716	-	0.691	-	0.482	-

5.2. A brief methodological note

In order to formalize the choice of the firm selected to privatize the urban water service, represented by the variable Y , we use multinomial logit regression techniques (see Greene, 2012: 763–766 for details). In particular, we compare the probability that municipality i selects firm m to privatize the urban water service, where $m = Aqualia$ and $Agbar$, against the base category which is set to $Others$. In formal terms:

$$\ln \left[\frac{\text{Probability}(Y_i = \text{Firm } m)}{\text{Probability}(Y_i = \text{Firm } Others)} \right] = \alpha_m + \sum_{k=1}^K \beta_{mk} \text{Municipality}_i + \sum_{h=1}^H \gamma_{mh} \text{Political}_i \quad (1)$$

where Municipality_i and Political_i are two vectors of variables capturing features of the municipality and political variables related to the party in power of the local government, respectively. The parameters to be estimated are the constant α , and the vectors β_{mk} and γ_{mh} .

The expression (1) has been fitted by maximum likelihood using *Stata 13* software, with robust standard errors to account for the presence of heterogeneity in the sample. In addition, and provided that the coefficients from the multinomial logit do not have a direct interpretation, i.e., they are relative to the base outcome, we have computed the marginal effects that measure the effect of changing the value of each explanatory variable on the probability of observing a given outcome, i.e., *Aqualia*, *Agbar* and *Others*.

6. Results

The results for the estimated marginal effects of the explanatory variables included in our analysis are in Table 3. The model is jointly significant and the goodness-of-fit is high compared to other studies conducting logistic regressions.

Table 3.- Multinomial logistic regression: Estimated marginal effects

	<i>Aqualia</i>	<i>Agbar</i>	<i>Others</i>
Population	2.96e-7 (0.869)	2.73e-6 (0.126)	-3.03e-6 (0.311)
Economic activity	1.28e-4 (0.870)	7.88e-4 (0.308)	6.60e-4 (0.584)
Andalusia	0.013 (0.915)	-0.222 (0.083)*	0.209 (0.279)
Aragon	-0.293 (0.076)*	-0.060 (0.700)	0.354 (0.088)*
Asturias	1.079 (0.000)***	1.294 (0.000)***	-2.379 (0.000)***
Balearic Islands	-0.086 (0.643)	-0.446 (0.061)*	0.534 (0.017)**
Basque Country	1.085 (0.000)***	1.250 (0.000)***	-2.343 (0.000)***
Cantabria	-0.340 (0.037)**	-0.203 (0.202)	0.543 (0.007)***
Castile-La Mancha	-0.085 (0.514)	-0.227 (0.085)*	0.313 (0.103)
Castile and León	-0.086 (0.550)	0.100 (0.488)	-0.014 (0.948)
Catalonia	-0.328 (0.016)**	0.029 (0.821)	0.298 (0.135)
Extremadura	-0.071 (0.602)	-0.214 (0.127)	0.286 (0.148)
Galicia	-0.353 (0.016)**	-0.065 (0.642)	0.418 (0.034)**
Madrid	1.357 (0.000)***	-3.193 (0.000)***	1.836 (0.000)***
Murcia	-0.110 (0.449)	-0.199 (0.174)	0.310 (0.131)
La Rioja	0.088 (0.671)	-0.233 (0.348)	0.145 (0.606)
Valencian Community	-0.388 (0.005)***	-0.216 (0.110)	0.605 (0.002)***
<i>Political variables</i>			
PSOE	0.058 (0.205)	-0.070 (0.114)	0.017 (0.778)
PP	0.095 (0.062)*	-0.148 (0.003)***	0.053 (0.233)
Majority	-0.045 (0.177)	-0.017 (0.597)	0.066 (0.060)*
Continuity	0.057 (0.104)	0.019 (0.556)	-0.077 (0.012)**
Observations	892		
Log likelihood	-837.37		
LR Chi-squared	4,752.95 (0.000)***		
Pseudo R-squared	0.1453		

Note: *p*-values in brackets; *, ** and *** mean statistical significance at 10, 5 and 1 percent, respectively.

As for the results, control variables *Population* and *Economic activity* are not significant at standard confidence levels. The set of regional variables reflects the greater relative presence of some companies in certain areas of Spain. This may be due to a business strategy phenomenon: companies that are the first to enter a particular area may have an advantage for business expansion in that area. This could be facilitated by a better understanding of the area, and/or by an emulation effect, whereby municipalities tend to follow the behavior of their neighbors.

The political variables *Majority* and *Continuity* are significant, although with different signs, for the group *Others*. Governments of political parties that enjoy a majority have a higher probability of choosing firms other than *Agbar* and *Aqualia*. Furthermore, governments that have been re-elected are less inclined to contract with firms other than the two major ones. Perhaps the extended period spent in local government facilitates the creation of networks that ultimately promote the awarding of contracts to the major firms.

Our main focus is on the variables representing the political party ruling the local government at the time when privatization took place, which allow us to test the main hypothesis. In this sense, we obtain diverging evidence related to the relationship between political parties and firms. In the first place, the marginal effects of the variable PSOE are not statistically significant at standard confidence levels, suggesting that there is no systematic relationship between municipalities governed by this political party and any particular company. In other words, we find no statistical evidence, at countrywide level, of favoritism by the PSOE to any company managing water services in Spain. On the contrary, in the case of PP we do obtain statistically significant evidence of potential favoritism. Accordingly, the probability of *Agbar* being awarded the contract for the management of urban water services is 14.8 percent lower when the municipality is governed by PP. In contrast, the probability of *Aqualia* being awarded the contract is 9.5 percent higher with a local government ruled by PP.

Are these relationships mere coincidence? Or, on the contrary, are they the result of favoritism or discrimination based on the different behavior of the water delivery firms with respect to funding the Popular Party? In this respect, we believe it is striking that the company showing a significant association with water service concessions made by PP-governed municipalities, the holding company FCC, has been the second biggest donor to that party in the past decade. It is also striking that several major PP politicians have come to occupy seats on the FCC Board of Directors after leaving their institutional responsibilities. Conversely, the company *Agbar*, which showed a significant negative association

with the concessions for water services granted by PP-governed municipalities, is not among the list of donors to the PP, nor were prominent members of the PP appointed to its Board of Directors.

Of course, showing favoritism to particular firms in local concessions can be the result of atomized decisions by local governments seeking rents or other compensation. In fact, cases under judiciary review in provinces such as A Coruña, Asturias or Huelva involve municipalities governed by different political parties, within each province (see footnote above). But beyond these atomized irregular decisions, our results suggest that higher-level decisions based on the company's political connections and political party funding at the national level might have played a significant role in the awarding of water concessions in Spain over the last three decades.

7. Summary and conclusions

Contracting out of public services is an area of public policy in which political corruption is commonplace. In exchange for bribes or other favors to policymakers or top bureaucratic managers, private firms can make sure they are awarded a contract. Furthermore, the systematic implementation of these practices can be used as a way of funding electoral activity or political party machinery. Eradicating such practices would undoubtedly be in the public interest. However, a problem associated with the adoption of remedial measures is the lack of precise knowledge of the extent of these practices; since these are illegal practices, they are systematically hidden.

In this research we analyze the existence of a potential relationship between political parties in governments that award contracts, and private firms that secure these contracts. The context of our study is the widespread concern over corruption in Spain, where many cases of public services procurement are subject to judiciary investigations. We sought to understand whether the biases in favor of a specific firm –taken as a proxy for favoritism; or the opposite, if against– are only isolated events or, alternatively, whether they might be part of a more

complex network of decision-making aimed either at financing political parties, and/or to rewarding firms' political connections. In order to understand this, we look for statistically significant relationships between political parties in local government and firms awarded contracts for provision of public services, which could suggest systematic favorable (or contrarian) treatment.

The results we have obtained suggest the existence of political favoritism shown by a political party to one of the leading business groups with interests in the water industry. City councils governed by the Popular Party are more likely to award the service contract to the company *Aqualia*, and are also less likely to award it to *Agbar* –*Aqualia*'s main competitor. Our results are consistent with the facts that, as proven in judiciary investigations, the owner of *Aqualia* –*Fomento de Construcciones y Contratas*– was the second largest donor of funds to the Popular Party between 2002 and 2009. On the contrary, neither *Agbar* nor its owner company –*Suez Environment*– have appeared in the lists of donors to the Popular Party. Furthermore, it is publicly known that several politicians that enjoyed high positions of office, including national ministries and regional ministries, in Popular Party governments, have regularly occupied positions on the Board of Directors of *Fomento de Construcciones y Contratas* (after leaving institutional office), whereas no former national minister or regional minister (neither from the Popular Party nor from the Spanish Socialist Workers' Party) has been a member of the Board of Directors of *Agbar* or *Suez Environment* in the period we study.

The results from our research can be interpreted as evidence supporting the need for changes to the regulatory and institutional framework in Spain. They are consistent with perceptions of corruption showed by indicators developed by Transparency International and the RAND Corporation. Improving the regulation of political parties' funding, as well as delivering faster and tougher sanctions in proven cases of corruption, could reduce the temptation to engage in illegal practices. Additionally, ensuring greater transparency in public procurement processes, and building more effective mechanisms to monitor the contracting process, would make it more difficult to engage in favoritism (or discrimination)

when awarding public contracts. Of course, governments and legislators are responsible for introducing measures that aim to achieve such improvements. Unfortunately, giving up the possibility of obtaining political rents might be a too strong a disincentive to do so.

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