

Determinants of urban political corruption in local governments

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Abstract In the first years of the 21st century, there was a building boom in Spain, which triggered many corruption cases in municipalities. This paper contributes to the scarce literature on this issue by analysing the impact of socio-economic and financial factors on urban political corruption. Our sample covers the 110 Spanish largest municipalities for 2000–2009. The findings indicate that higher politicians' salaries and more transparency are connected with lower corruption levels. In this way, we confirm theoretical assumptions that posit that municipalities where politicians have higher salaries present less corruption cases. Finally, municipal transparency should be enhanced, because it is related to lower corruption.

JEL Classification H83 · D73

Introduction

During recent years, corruption cases connected to urban development have become an important problem in Spain. The disproportionate evolution of the Spanish housing market during 1998–2007 (6.5 million housing units were built in that period) triggered massive, disordered urbanization on pieces of land that were not always appropriate. In turn, this massive urbanization paved the way for opacity, wrong policies and corruption. Thus, instead of an urbanization that protected citizens' interests, citizens were ignored for the sake of urbanization agents' benefit.

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Municipal corruption scandals have been reported not only to court, but also to other institutions such as the European Parliament Petitions Commission and the Ombudsman. Actually, the connection urban development–corruption is not new. What is new is the extent of the problem. Corruption cases reported by the press suggest that this is a systemic rather than sporadic problem. In fact, 8.3 % of Spanish municipalities faced at least one case of urban corruption in 2000–2009 [23]. Furthermore, according to the 2013 Special Corruption Eurobarometer, 63 % of respondents in Spain (highest percentage in the EU) feel personally affected by corruption in their daily lives (EU average: 26 %), while 95 % say that corruption is a widespread problem in the country (EU average: 76 %) and 91 % state that corruption exists in local and regional institutions (EU average: 77 %). Furthermore, Spanish citizens are more likely than any other EU citizen to think that corruption is widespread in both political parties and among politicians, that the level of corruption within the country has increased and that high-level corruption cases are not sufficiently punished [13].

Corruption is the abuse of entrusted power for private gain. This is the definition used by Transparency International (TI), which applies to both public and private sectors. Corruption generally comprises illegal activities, which mainly come to light only through scandals, investigations or prosecutions. In Spain, urban corruption usually consisted in businessmen bribing politicians, not government officials, to get things done. Basically the plot started with the businessman buying a cheap plot because it was non-developable. Afterwards, the politician changed the status of the plot to developable, which made its value skyrocket. Thus, instead of working towards citizens' interests, politics pursued the benefit of both businessmen and politicians involved. This kind of corruption is different from third-world, where low-paid government officials take bribes for daily bureaucracy steps.

Furthermore, political power in Spanish municipalities is highly discretionary. Mayors are more powerful if we compare with other countries, which put together with a flexible legislation, paves the way for corrupt behaviour. Spanish local governments (LG) belong to the 'strong-mayor' type [29]. The strong-mayor form, typical of the Southern European countries -France, Italy, Portugal and Spain- gives a central role to the mayor for local affairs management. They hold most executive powers in their hands, compared to local managers, officials and employees, who maintain a secondary role. As we will see in detail later, one of the most important responsibilities of the Spanish local authorities concerns urban planning and construction. These are the key aspects of the urban planning activity of Spanish municipalities [18]:

- They decide what areas in their jurisdictions are fit for urban development.
- They issue building permits according to their local urban plans, after receiving technical and legal advice from the local urban planning officers. These permits are required for landowners to start the urbanization project.
- Frequently, local authorities and private landowners sign development agreements to set the urban development of a private land. These agreements typically include details such as quantity and type of building, green areas, local public facilities, etc. Until 2007, the procedure for signing such agreements was barely regulated, which meant that mayors and landowners and/or urban developers could negotiate the conditions for urban development bilaterally with minimum legal requirements to

report to citizens or even to the municipal corporation on the content of the agreements.

Under this legal framework, local urban development in Spain created strong economic incentives to increase the areas eligible for urban construction, and provided opportunities for corrupt exchanges between public and private actors. Given that urban policies in Spain can generate large capital gains, our analysis focuses on the determinants of Spanish municipal urban corruption during the huge 1998–2007 property bubble.

Besides, the huge number of municipalities in Spain, over 8,000, prevents the media from investigating them thoroughly. It is feasible to control the largest municipalities, but it is difficult to do it with all of them. The large number of LG with a monopoly of regulatory power increases the total number of potential bribes [39]. This high number of Spanish municipalities and their reduced size—a Roman and medieval inheritance [1]—makes it costly to employ sufficient and competent staff and to ensure that they have the necessary independence to control all reprehensible behaviour by local representatives. We must bear in mind that Spanish local authorities are crucial holders of territorial power in Spain; however, they have a small size and limited resources. Indeed, over 90 % of local authorities' population is under 10,000, making the Spanish councils among the smallest in Western countries, with an average population of 4,800 inhabitants.

Moreover, we must highlight that it is very complicated to assess absolute levels of corruption in countries or territories on the basis of hard empirical data. There are three principal approaches to measure corruption at the macro level, namely, (1) general or target-group perception, (2) incidence of corruptive activities [35] and (3) bribes reported, the number of prosecutions brought or court cases directly linked to corruption.

The first kind of measures reflects the feeling of the public or a specific group of respondents about corruption. The second approach is based on surveys among those who potentially bribe and those whom bribes are offered. The third kind of measures groups more objective variables that are also used as indicators of corruption levels.

Golden and Picci [20] consider that survey-based measures of corruption have some intrinsic weaknesses. First, the real degree of reliability of survey information is largely unknown. Thus, respondents involved in corruption may have incentives to underreport such involvement, and those not involved typically lack accurate information. Second, the reliability of the indexes may also deteriorate over time. As the indexes are widely publicized, there is a danger that survey respondents, rather than reporting how much “real” corruption exists, are reporting what they believe based on the highly publicized results of the most recent indexes. Furthermore, respondents may lie in surveys to improve the results of the indexes.

Many organizations, such as Transparency International (TI), European Commission, World Bank or The Heritage Foundation, report corruption indexes for different countries, and publish recommendations to curb corruption. In this respect, there are three different types of anti-corruption policies [38]:

- (1) Administrative reform: it is the most common approach to address corruption. Anti-corruption strategies focus on enhancing the quality of bureaucracies, merit-

based promotion and recruitment through special exams, narrow job definitions, establishment of formalized rules, accountability and responsibility. Furthermore, reformers have also tried to apply New Public Management tactics to protect public organizations from political influences.

- (2) Law enforcement: it is an important alternative to complement administrative reform and particularly significant in countries whose governments have little internal capacity to implement these reforms. Imposing legal constraints and prosecution of corruption makes an example to all government workers, while also helping to reinforce government employees' expected standards of behaviour.
- (3) Social capital: it is based on cultural norm or network that facilitates modern economies and that can enhance the rule of law by providing society with information resources, morality, trust and civic associations. Thus, citizens are more likely to be protected from political exploitation and should also act as surveillance guards against public officials' corrupt behaviours. This approach is more relevant for complex societies in which the use of formal control instruments is difficult to apply.

In a more practical approach, focusing on the particular case of municipalities, TI gives some recommendations to fight against corruption [27]:

- The remuneration of city councillors should be determined according to the nature of their workload, as well as the size of the respective local government area.
- There should be clear rules restricting the engagement of city councillors in private activities to avoid potential conflicts of interest.
- Mayors and city/county councillors, as well heads of departments should be required to regularly disclose information related to gifts received, all properties and sources of income, debts and liabilities, shares in companies, as well as potential conflicts of interest.
- In certain circumstances, municipalities should also seek to restrict pre-public employment (the movement of businesspeople to the local administration) and post-public employment to avoid undue influence and misuse of confidential information.

Similarly to the aforementioned international organizations, many studies have analysed the empirical determinants of corruption at national level using indexes that measure perceptions rather than actual political corruption. Nevertheless, there is not commonly agreed-upon theoretical approach on which to base an empirical model of corruption, let alone to investigate the causes of corruption [3].

The evaluation of corruption is even more complex at the local level. Thus, while numerous case studies in particular countries and cross-national comparative research have examined the details of corruption, municipal research is scarcer due to two factors. First, the difficulty of measuring corruption levels in LG has become a major obstacle [16]. Second, it is difficult to get reliable data.

Our paper contributes to close this perception gap. Specifically, the aim of this paper is to analyse the socio-economic and financial determinants of urban political corruption at local level through a dataset of Spanish municipalities. As we stated above, traditionally, works assessing corruption have focused mainly on cross-country

datasets. However, the inability to account for the full set of institutional arrangements that determine corruption makes results difficult to interpret. Only a few studies have considered the municipal level, despite municipal datasets have two main advantages over cross-country, namely, homogeneity and amplitude [31, 6]. Besides, we will use, as gauge of corruption, the third measure we have mentioned above, i.e., the number of cases of urban corruption reported in the online press in the period 2000–2009. We aim to assess the level of municipal corruption, so that later we can guess the determinants of urban corruption.

Our findings show an impact of transparency, salaries and population (as a gauge of urbanization) on corruption. First, the lower the transparency, the higher the probability of corruption. Second, higher wages ensure less corruption. Third, larger municipalities experience more corruption.

The paper is organized as follows. Section 2 discusses how the literature has analysed the relationships between corruption and socio-economic and financial features. Section 3 describes the urban planning in Spain. Section 4 addresses the research design and methodology. Section 5 presents the regressions. Section 6 discusses the empirical results. Finally, Section 7 summarizes conclusions and proposes further research.

Literature on corruption

Why do some municipal politicians misuse public office for private gain more frequently and for larger payoffs than others? The answer lies in the balance between the expected cost of a corrupt action and the expected benefit [41, 37]. Recent theoretical and empirical research has considered how differences in socio-economic and financial features might explain variations in the level of corruption. In this section we present the main contributions to the literature on the determinants of corruption. Nevertheless, as we said before, most of these studies focus on national rather than municipal datasets.

Transparency

Both the provision of information to citizens and citizens' ability to monitor their governments play an important role to battle against corruption. In the last years, many governments have increased openness and transparency. Information and communication technologies (ICTs), in general, and E-government, in particular, are seen as suitable means to promote transparency and to reduce corruption [8].

Bac [7] highlights two opposing effects of transparency on corruption. First, a higher level of transparency in decision making increases the probability that corruption or wrongdoing is detected. Second, it may also help outsiders to identify key decision makers, thereby enabling connections for corruption. The “connections effect” may outweigh the “detection effect” and thus, higher transparency may boost corruption, a prediction sharply in contrast with standard theories of transparency.

Alt and Lassen [3] also consider that the effects of transparency may be ambiguous. Transparency might increase the detection of corrupt acts, or reduce corruption when the expectation of corrupt activities being observed is sufficiently internalized.

Nevertheless, a smaller, indirect effect of transparency is that increasing government scale also rises the temptation to be corrupt [4].

Lindstedt and Naurin [26] conclude that reforms focusing on increasing transparency should be accompanied by measures for strengthening citizens' capacity to act upon the available information, if we aim to curb corruption. With the above considerations in mind, we propose hypothesis 1:

H₁: The level of transparency influences the level of corruption.

Income

Income is a classical variable used to explain corruption [35]. Nevertheless, its impact on corruption is unclear. On the one hand, most authors conclude that corruption is lower in richer societies [41, 3, 30, 21, 22, 12, 36, 26, 19, 37, 16, 10]. On the other hand, some studies deviate from this mainstream, because they show that income increases corruption [11, 17]. These latter authors consider that corruption has a pro-cyclical nature. Thus, they stress that "moral standards" are lowered during economic booms, as greed becomes the dominant force for economic decisions. Accordingly, we propose hypothesis 2:

H₂: The level of income influences the level of corruption.

Education

Population's education level is also argued to affect corruption. Corruption is expected to be lower when populations are more educated and literate ([41]; Ali and Isse 2003; [30, 3, 19, 16]). The reason is that governments are better monitored by a cultivated civil society. However, counter-intuitive findings are found in Fréchette [17], Seldadyo and de Haan [35] and Shabbir and Anwar [37], who show that when population becomes more educated, corruption increases. Their point is that, in developing countries, the public sector is the main source of employment. In these countries, corruption in public sector is very common and becoming a civil servant requires education. Therefore, the level of corruption in these countries rises with the increase in education, especially when it becomes the source of employment in the public sector. Finally, Damania et al. [12] do not find a significant relationship between education and corruption. Therefore, our hypothesis 3 stands as follows:

H₃: The level of education influences the level of corruption.

Urbanization

Some literature has identified urban development as another variable that explains corruption. According to Billger and Goel [10], urbanization may have two opposite effects on the level of corruption. On the one hand, greater concentration of the

population in urban areas increases potential bribe takers and bribe givers, making them more eager “to jump the queue” via illegal means. There are also greater opportunities for interaction between potential bribe takers and bribe givers in urban areas, resulting in more corrupt deals. On the other hand, a highly concentrated urban population might indicate a greater chance that someone is looking over the shoulder of potential bribe takers and bribe givers, acting as a deterrent.

Empirical findings are not conclusive about urbanization either. Meier and Holbrook [28] and Alt and Lassen [3] show a positive relationship between urban concentration and corruption level. However, Hill [22] and Billger and Goel [10] find the opposite result, i.e., there is more effective government oversight in urban communities or potential bribe takers and bribe givers are somewhat deterred by peer pressure in urban areas. Finally, other studies do not find a significant relationship [12, 19, 16]. Therefore, we propose the following hypothesis:

H₄: The level of urban concentration influences the level of corruption.

Debt and treasury surplus

The increase of funding resources, such as debt and treasury surplus, may be also related to corruption.

Corruption is defined as the misuse of entrusted authority for private benefit, therefore, governments with higher funding may have a higher probability of corruption by using this money [41]. In this way, the literature supports that lower corruption is associated with lower opportunistic public debt and treasury surplus. Nevertheless, governments with higher levels of debt may be monitored by lenders to a greater extent. In this case, a negative relationship between the level of external debt and corruption is expected [35]. Accordingly, we present the following two hypotheses:

H₅: The level of indebtedness influences the level of corruption.

H₆: The level of treasury surplus influences the level of corruption.

Salaries

The literature has developed the theory of how “control” can curb corruption [11]. We refer to a sort of models where the ability to keep bureaucrats under control depends on the auditing intensity and the combination of sticks (fines, dismissal) and carrots (salary, prestige, pensions) offered to the agent. In this context, Van Rijckeghem and Weder [42] argue that civil servants’ wages may be important. Public sector wages are highly correlated with the measures of the rule of law and the quality of the bureaucracy, and therefore may have an effect on corruption. Thus, if bureaucrats receive low wages, they have incentives to be corrupt.

There are many empirical studies that link corruption (and the temptation to act corruptly) to the level of salaries in public office [41]. Van Rijckeghem and Weder [42], Herzfeld and Weiss [21], Alt and Lassen [3] and Beylis et al. [9] find evidence of a

significant relationship between relative civil-service pay and corruption. The relationship implies that a rather large increase in wages is required to eradicate corruption solely by raising wages. However, Seldadyo and de Haan [35] show a counter-intuitive result, namely, that an increase in government wages lifts corruption up. Therefore, we propose the following hypothesis:

H₇: The greater the salaries of politicians, the lesser the level of corruption.

Urban planning in Spain

The Spanish public sector is divided into three levels: the State, Regional Governments (called Autonomous Communities, 17) and LG (50 provinces and 8,117 municipalities). The relationship among them is based upon competences, not upon hierarchy.

Each municipality has a mayor, a cabinet, and a professional administration. The mayor is the head of the executive, and is elected indirectly by the citizens. The electoral system is based on proportional representation. Municipal governments are elected once every 4 years.

One of the main responsibilities of LG is to elaborate and execute land-use plans. The whole municipal territory is divided into three land categories: non-developable, developable and existing urban land. The principal purpose of local land-use plans is to decide about the non-developable or developable land. The legal town planning framework has been based on three basic essentials: (1) all land in the country was 'classified' by municipal plans as fit or unfit for building and urban development; (2) most of the capital gains generated by land classification were rendered to the owners of the land regarded as fit for development, and just a small part of it (10 to 15 %) was recovered by the public administration that decided on land use; and (3) if a public administration needed to expropriate land for public use, the law required a valuation that prevented in practice to expropriate land classified as fit for urban development.

Taking into account these three elements, while rural land was regarded unsuitable for building and development (with no right to claim any compensation), the land that the municipal plan classified as fit for development gained a totally different legal (and economic) status. Moreover, and in the case of expropriation, rural land that became urban land under the municipal plan would be valued as if already was fully developed (urbanised and built on) simply by the plan being approved. Of course, this singular characteristic usually became an extraordinary source of speculation and corruption. This absolutely irrational element favouring landowners' interests made irrelevant the threat of expropriation whenever landowners did not comply with the time limit to develop their land in accordance with the municipal plan, allowing huge land speculation: landowners held their plots without investing a euro in urbanising works, waiting for an increase in land price.

Besides this faulty institutional design, from mid-1980s onwards a new significant element in urban planning emerged without any supporting legislation. Some important city councils started to sign urban planning agreements with developers who would be willing to fulfil more commitments for the council than required by law, in exchange for amendments in the current urban plan, including the rezoning of some plots. Although these agreements were well intentioned (for instance, to guarantee that

developers would build free housing for the homeless, in exchange for permission to develop slum areas), its opaque nature led soon to corruption scandals. The agreements were signed just by the developers and the town mayor and allowed amendments of the existing urban plan—in a legal procedure with little publicity and citizen participation—which very often meant a complete transformation of the city model envisaged in the amended plan. The extraordinarily widespread use of these urban agreements in Spanish LG speaks of the greater flexibility in the approach to urban development, but also explains the growing problems of corruption in this field.

TI developed a procedure to help curb corruption at the municipal level, “The Local Integrity System (LIS) Tool”, which assesses the internal governance and capacity of each of the core local government actors and their role in promoting integrity in the system as a whole. It also assesses the capacity to perform, and the effectiveness of, each of the oversight and accountability functions. When used repeatedly, the LIS Tool can monitor and evaluate the progress of the LIS over time. If the LIS is not well defined and implemented, and if the mayor has a strong position, both facts may lead to the adoption of short-sighted public policies and to a very serious level of local corruption, which has been both effect and cause of the property bubble [33]. Under the Spanish legal framework, urban planning discipline rests mainly in the hands of town councils, particularly of the mayor, who issues building permits that a developer must obtain before starting any urbanisation activity. These permits must be issued in accordance with the current urban plans and after receiving technical and legal advice from municipal officers.

In addition to the countless corruption cases triggered by urban development in recent years (Section 4.1 shows the corruption practices that Spanish LG use more frequently), LG have undoubtedly used this activity to obtain a major source of funding. Specifically, urban development decisions have an impact on several local revenue sources. One of the most important revenue sources comes from the free transfer of a percentage of the building rights from landowners to local authorities. As we said before, Spanish laws establish that some portion of the benefits accrued from urban development must go to citizens, rather than being captured exclusively by the landowner. In particular, landowners must cede a portion (10–15 % in general) of their building rights to the municipality, either in the form of land or money. While the ceding of land does not appear in the budget, the amounts obtained from the cash payments do. Nevertheless, LG can sell the lands previously ceded by landowners, which involves an increase in the budgetary revenue.

Spanish LG also levy funds from other revenue sources related to urban development. There are two local taxes directly linked to urban development activity: the land disposal tax and the construction tax. The first tax is paid by the seller of urban or developable land. The construction tax is paid by individuals or companies who engage in construction projects (new buildings or renovation works). Furthermore, LG impose fees on developers to finance the capital costs of additional public works and facilities that are necessary for an appropriate land development. Municipalities also gain revenue from fees for planning permission. In addition, LG receive funds from the granting of use rights of municipal-owned property assets. Consequently, as urban development increases in the municipality, the money generated by these revenue sources also increases. This makes LG an interested party in the urban land development [24].

The local property tax is another source of revenue for Spanish municipalities that may appear to be related to urban development. However, contrary to the construction and land transactions taxes, the property tax does not depend on the dynamics of urban activity. In fact, it can be considered as a recurrent revenue source, for it depends on the stock of dwellings.

It is important to point out that under Spanish laws, some of these revenues must be devoted to the promotion of social housing and other social purposes. In particular, the funds received from landowners for the donation of a part of their building rights and those obtained from the sale of lands previously ceded by landowners, must be devoted to these purposes. Since the law provides that these resources can be used for other social purposes than the promotion of social housing, LG have widely used these revenues for the construction of public facilities, such as sports centres, theatres and parks. In other words, these resources can be used by LG to finance capital expenditure.

To summarize, LG have several sources of revenue that are related to urban development. Essentially, we can distinguish (i) the money paid by landowners for the donation of a part of their building rights, (ii) revenue from the sale of lands previously ceded by landowners, (iii) the land disposal tax, (iv) the construction tax, (v) fees on developers, (vi) fees for planning permission, and (vii) the funds received from the granting of use rights of municipal-owned property assets. Henceforth, when we refer to municipal urban development revenue, this is assumed to mean the sum of all these revenues with the exception of revenue from land sales. Unfortunately, this information is not available for most municipalities.

In Spain, the recent housing bubble contributed to the rise in municipal urban development revenue, while the bubble burst made these revenues plummet. Figure 1 shows the evolution of municipal urban development revenue over the period 2003–2010. This period includes the peak years of the Spanish housing boom and the early years of the burst. The evolution of two housing market indicators (house prices and building permits) is also presented in Fig. 1 to allow comparison. In Spain, house prices increased markedly until 2007, after which they plummeted. The escalation of house prices before the burst in 2008 triggered a spectacular construction boom, as shown by the sharp increase in building permits. The subsequent fall in house prices was accompanied by corresponding drastic declines in building permits. Municipal urban development revenue followed a similar trend, with an enormous growth until 2006, while in 2007 it began to decline. However, it was in 2008 when urban development revenue plummeted. Therefore, as it can be observed, the Spanish housing boom made urban development revenue skyrocket in LG, while the collapse of the housing market led to the burst of the revenue boom.

Finally, it is important to point out that prominent corruption cases investigated in the recent years have raised awareness of potential corruption risks and have increased public authorities' focus on the need to strengthen anti-corruption and integrity-related policies. The central government has acknowledged the need to address corruption as a matter of priority, along with other economic recovery measures (European Commission 2014b).

The need to curb corruption has triggered other countries' initiatives. For example, Germany has introduced some measures to fight against corruption at the municipal level. These policies include rotation of staff, strict observance of the 'four eyes' rules; clear regulations on sponsoring and the prohibition on accepting gifts; establishing

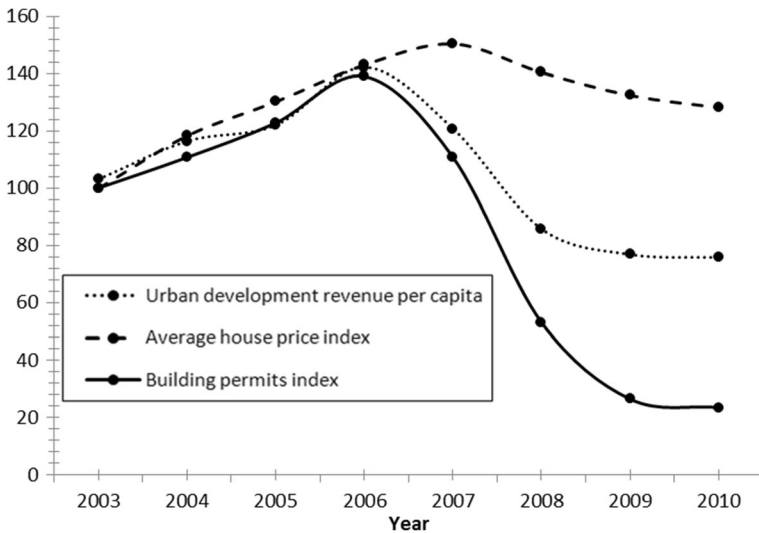


Fig. 1 Municipal urban development revenue, house prices and building permit indices, 2003–2010. Notes: Authors' calculations from the Spanish Ministry of Treasury, the Spanish real estate valuation society, and the Spanish National Statistics Institute

centralised authorities for tender/awarding; precise description of the tender and control of estimates; organisation of tender procedures, including secrecy of bids and prevention of belated manipulation of bids; increased use of e-procurement; documentation of adjudication and careful control by supervisory bodies; exclusion of enterprises found guilty of corruption offences and establishing black lists/corruption registers. In Italy, several networks and associations of regional and local administrations are actively implementing actions for prevention of mafia infiltration in public structures and promoting transparency of public procurement at local level [14].

In the Netherlands, most cities and communities have developed a local integrity policy, and some of them have created integrity offices (IO), which support all municipal units with the following services: advice, training, risk assessments, handling of disciplinary cases and legal advice and integrity investigation. IO acts as a contact point for people who want to report a breach of integrity rules. It also advises businesses, service providers and even other municipalities in the identification, control and reduction of integrity risks. If a department or service proposes a penalty to be imposed for a breach of integrity rules, it has to request an opinion from the IO's in-house lawyers. The purpose of this mandatory request is to ensure that the policy on penalties for such breaches is consistent [14].

Considering this, political corruption is an issue that requires further analysis. This is particularly important for big LG, which are included in our sample, since they manage huge amounts of financial resources. In spite of the high number of investigations into allegations of corruption and the shortcomings mentioned above, no comprehensive approach has been developed as a basis for addressing particular risks and vulnerabilities at regional and local levels [15].

According to Pettersson-Lidbom [31] and Ashworth et al. [6], as we said above, municipal datasets have two main advantages over cross-country, namely, homogeneity and amplitude. First, heterogeneity (different legal structures and socioeconomic

framework in cross-country samples) needs to be controlled [40]. This feature is overcome in the municipal level within a country. Second, sub-national datasets are considerably larger than cross-country samples.

Methodology

Variables

The variables included in our model stem from the theoretical and empirical underpinnings (Table 1 depicts descriptive statistics and expected signs).

Our dependent variable is the number of cases of urban political corruption detected in Spanish LG for 2000–2009 (*corruption*). The property bubble period started in 2000 and in 2008 it burst. That is the reason for taking this time window plus 2009 because it is reasonable to think that some corruption cases connected to the aforementioned property bubble could occur after that period. This information comes from the dataset made by professors Jerez, Martín and Pérez (University of La Laguna, Spain). Their database was constructed for the research project “Land urbanization and local policy in Spanish democracy: an insight on agriculture” funded by the Spanish Ministry of Science and Education. Due to the lack of official statistics on municipal corruption, these authors used online press to identify urban related corruption cases for 2000–2008.

After a thorough research of corruption press articles, they came out with a dataset of 414 cases. This figure shows clearly the importance of the problem and the peculiarities of the Spanish urban system. Nevertheless, as we said above, corruption cases stemming from the 2000–2008 property bubble period extend to 2009. Thus, 262 new cases appeared in 2009. Therefore, the corruption cases total 676 in 2000–2009. Considering the population, 26.3 million of Spaniards, or 56.1 % of the Spanish population, have suffered at least one corruption case in their municipality. As we explain below, our study focuses on the 110 largest Spanish municipalities, which comprises 158 cases of corruption in 2000–2009.

Corruption cases included in our variable are summarized on Table 2. We must point out that politicians entitled to make and enforce the laws in the people’s name, are using this authority to sustain their power, status and wealth. Political corruption not only leads to the misallocation of resources, but it also perverts the manner in which decisions are made. Political corruption occurs when the laws and regulations are abused by the rulers, side-stepped, ignored, or even tailored to fit their interests. It is when the legal bases, against which corrupt practices are usually evaluated and judged, are weak and furthermore subject to downright encroachment by the rulers [5].

According to the previous literature, we take the following socio-economic and financial features as explanatory variables: transparency index (*transparency*), the mean of income level of the municipality (*income*), the rate of uneducated people in the municipality (*uneducated*), the rate of urban revenues on total revenues (*urbanrev*), the size of the municipality (*population*), the rate of municipal debt growth (*debt*), the rate of municipal treasury surplus growth (*treasurplus*) and the ratio of LG politicians’ salaries over non-financial expenditures (*salaries*).

Table 1 Definition of variables and descriptive statistics

	Variable (<i>expected sign</i>)	Description	Calculation	Mean	St. dev.	Min.	Max.
Dependent variable	corruption	2000–2009 Corruption index	Cases of urban political corruption during the period 2000–2009	1.440	1.706	.000	7.000
Independent variables	transparency (?)	2009 Transparency index	Taken from TI-Spain Web	64.048	21.155	17.500	98.800
	income (?)	Mean of income level for 2001–2007	Income ranges from 1 until 10, depending on the municipal disposable personal income. Taken from “Lawrence R. Klein” Economic Institute	6.494	1.873	3.143	10.000
	uneducated (?)	Rate of uneducated people in 2001	Taken from the Spanish National Statistics Institute	.127	.049	.025	.270
	urbanrev (?)	Rate of urban revenues on total non-financial revenues for 2002–2007	Taken from the Spanish Ministry of Finance	.092	.072	.001	.405
	population (?)	2009 Population of the municipality	Taken from the Spanish National Statistics Institute	203,512.600	351,120.600	35,396.000	3,255,944.000
	debt (?)	Rate of debt growth between 2001 and 2007	Taken from the Spanish Ministry of Finance	.612	.781	–.973	2.917
	treasurplus (?)	Rate of treasury surplus growth between 2002 and 2007	Taken from the Spanish Ministry of Finance	.721	5.152	–18.549	17.357
	salaries (–)	Ratio of LG politicians’ salaries over non-financial expenditures for 2002–2007	Taken from the Spanish Ministry of Finance	.008	.003	.001	.017

Table 2 Typology of urban political corruption cases

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- Classification of non-developable plots as developable plots in lands that due to their natural features, should be kept as non-developable.
 - Forbidden building up of non-developable land, either with the municipal approval or taking advantage of the municipality's negligent inactivity on urban illegalities control.
 - Classification as urban developable of land that should not be classified according to the law.
 - Partial modification of the municipal urban plan instead of a general revision of the plan, which would be more appropriate. This partial modifications distort the general urban plan of the municipality.
 - Illegal urban activities are legalized through ad hoc plan modifications, which prevents the judicial sentence from being executed.
 - Urban plans or urban plan modifications are approved without meeting urban laws requirements.
 - Urban developments are executed circumventing some basic legal requirements
 - Municipal land disposal revenues, which should be reinvested on municipal land, sometimes finance municipal current expenditures.
 - Municipal land not used for the required legal purposes.
 - Urban plans ignore environmental legislation, which causes ecological damages.
-

All variables refer to the period before crisis (from 2001 or 2002 to 2007), except for *uneducated, population and transparency*. The data is cross section data therefore it only gives information at one point. The rate of uneducated people was only available in the National Statistics Institute Census for 2001.

The 2009 transparency index is published by TI-Spain by means of a questionnaire sent to the 110 largest Spanish municipalities. The questionnaire measures the level of transparency in five areas: a) information about the municipal corporation, b) relations with citizens and society, c) economic and financial transparency; d) transparency in the contracting of services, and e) transparency of urban planning and public works.

The implementation of these indexes aims to achieve two goals. First, each local government gets an individual transparency score, so that a transparency ranking is published. Second, it attempts to promote the culture of full disclosure, as it offers the municipalities the opportunity to publish the requested information in the municipal webs, and this way improve their transparency scores.

The index aims to foster a closer relationship between councils and citizens, encouraging the increase of information disclosed about the situation of the municipality and the activities it carries out.

In May 2009, local governments received a questionnaire with 80 items. Some information was directly collected by TI-Spain. The remaining information was provided by the municipalities through the questionnaire. The participants had to indicate, in an appendix, the source of each data, so that TI-Spain could check it. The non-responding municipalities will be assigned a minimum score (out of the 110 initial Councils, 18 did not return the questionnaire, and therefore received the minimum score).

Each question had two possible scores:

- a. 2 points: if the information is posted on the municipal website.
- b. 0 points: If the information is not published on the municipal website.

Finally, depending on the total value obtained by each participant (the sum of their scores in the 80 indicators), TI-Spain developed the ranking.

These 110 municipalities make our sample, since the variable *transparency* constrains our analysis to those LG included in the TI-Spain survey.

Urbanization is measured through two variables. First, the size of the municipality (*population*), which is a gauge of the urban development of the city. Second, *urbanrev*, which is the sum of revenue sources directly related to urban development decisions as we define it in Section 3, that is: (1) money paid by landowners for the donation of a part of their building rights, (2) the land disposal tax, (3) the construction tax, (4) fees on developers, (5) fees for planning permission and (6) funds received from granting use rights of municipal-owned property assets. Property tax collection has not been included because it depends on the stock of dwellings.

Regarding salaries, our independent variable captures top politicians' wages as an aggregate figure for the wages paid to all top politicians. In this respect, top politicians are defined as the members of the municipal council that make up the municipal government. In our view, it is more accurate to use the ratio of all top politicians' wages over non-financial expenditures because it enables the comparison among the LG considered in our sample.

Specification of the model

The initial specification of the model corresponds to the following equation:

$$\text{corruption} = \beta_0 + \beta_1 \text{transparency} + \beta_2 \cdot \text{income} + \beta_3 \cdot \text{uneducated} + \beta_4 \cdot \text{urbanrev} + \beta_5 \cdot \text{population} + \beta_6 \cdot \text{debt} + \beta_7 \cdot \text{treasurplus} + \beta_8 \cdot \text{salaries} + \varepsilon$$

We analyse two different approaches: Ordered Logit Model (OLM) and Ordinary Least Squares (OLS). The former model is more appropriate than OLS in our analysis due to the ordinal nature of the dependent variable. As we defined above, our dependent variable is the number of cases of corruption for the period 2000–2009; therefore, it is discrete and ordered, inasmuch as less cases of corruption (or none) are better than more cases.

Appropriate for the modelling of an ordered categorical dependent variable are both ordered probit model and the ordered logit model. In these models, the probabilities of each outcome, conditional on the independent variables, are modelled using the cumulative normal distribution or Weibull distribution, respectively (Collet 2003). In case the residuals are not normally distributed, and ordered logit model should be applied. This is the case for the data at hand, thus, we apply the ordered logit model.

We also use White-corrected OLS method that ignores the categorical nature of the dependent variable both to identify variables that clearly affect the level of corruption and to check the robustness of our results [2].

At the outset, we considered both *uneducated* and *income* as independent variables, as suggested by the literature. Nevertheless, these two variables present a high correlation in our sample: Pearson = $-.659$, significance = $.000$. Therefore, we dropped *uneducated* in order to avoid multicollinearity problems.

Sample

The sample consists of the 110 largest Spanish municipalities surveyed by TI-Spain. The time window covers 2000–2009. Municipalities' population ranges between

35,396 and 3,255,944 in 2009. This sample represents nearly 48 % of the population. The reason for eliminating the rest of municipalities is twofold. First, the reliability of the financial data is doubtful for small LG. Second, a key variable for this study, *transparency*, is only available for these municipalities, as we explained above.

We think that LG in Spain provide an ideal institutional setting to test our hypothesis for several reasons. First, as we said above, Spain is perceived as being among the most corrupt countries in the European Union [13]. Prominent corruption cases investigated in recent years have raised awareness of potential corruption risks and increased public authorities focus on the need to strengthen anti-corruption and integrity-related policies. The national government has acknowledged the need to address corruption as a matter of priority, along with other economic recovery measures. Second, LG seem to be the most corrupt in many countries. LG are under the control of narrow elites that use several tools for personal gain [34, 16]. Spain is one of the most decentralized countries in Europe, and it clearly shows the importance of sub-national government's control of corruption. Finally, executive accountability is limited. The Spanish Supreme Audit Institution (SAI) is the only body responsible for auditing government accounts and financial management. Although the agency is legally independent, in practice it is influenced by the two major national political parties. The institution has sufficient resources, but is not very effective in controlling public sector's efficiency and effectiveness.

Results

Table 3 shows the coefficients of the OLM and OLS regressions. There are only slight differences in the coefficients of both estimations, which confirms the robustness of the model. Overall, OLM coefficients present more significance than OLS coefficients. Anyway, in both regressions, the values are significant according to the usual statistical threshold of $p < .05$.

Discussion

The empirical results give support to our hypothesis 1, since higher transparency reduces corruption (*transparency*). Our results show that, in fact, one of the measures suggested by TI to curb corruption, i.e., enhancing public institutions' transparency, plays a key role to curb political corruption. Lack of transparency prevents political opposition and citizens from supervising urban development decisions made by the municipal body. This supervision is usually difficult to implement in Spain because a) it is a task that requires a lot of time and effort, and no all municipal council members are willing to do it, b) these members usually lack urban legislation knowledge, c) the municipal legal department is reluctant to provide full information to the opposition, d) the mayor refuses in many cases to provide the information the opposition requires and e) sometimes opposition lacks financial resources to take other politicians to court. Besides, urban planning agreements with developers, that were discussed in Section 3, are signed by the mayor without the approval of the municipal council, which hinders opposition's control.

Table 3 Estimation of regressions

Dependent variable	corruption	
	OLM	OLS
Intercept		*** 4.603 (4.03)
Transparency	*** -.032 (-2.94)	** -.022 (-2.52)
Income	-.164 (-1.21)	-.089 (-.86)
Urbanrev	1.507 (.46)	-.207 (-.08)
Population	*** .000 (2.77)	*** .000 (3.98)
Debt	-.324 (-1.19)	-.142 (-.68)
Treasurplus	.028 (.69)	.017 (.51)
Salaries	*** -246.544 (2.93)	** -163.370 (-2.60)
Log likelihood	-123.118	
R-Squared		.341
N	110	110

Z-values (OLM) and T-values (OLS) in parentheses. Significance: ***1, **5, *10 %. Maximum VIF: 1.579

In light of Spanish citizens' deep concern about corruption that appears in all opinion polls, the Spanish Parliament passed in February 2013 a resolution called *Transparency Act*. This act lays down a wide range of anti-corruption measures [15]. Against this background, an ambitious programme of legislative reform is being implemented, covering a wide range of aspects, including financing of political parties, criminal law aspects, accountability of high-ranking officials and increasing the efficiency of court proceedings. Furthermore, in September 2013, the Government approved a package of measures for the 'revival of democracy'. The package comprises: strengthening SAI powers; clear rules on the obligations attached to exercising public office and the corresponding sanctions in case corrupt behaviour is detected and a proposal to reform criminal law and criminal procedure rules, including the sanctioning regime applicable to corruption offences.

In respect of salaries (*salaries*), the data prove our hypothesis 7, for higher salaries mean lower corruption. This is in line with Van Rijckeghem and Weder [42], who suggest that high wages discourage politicians to be corrupt. As we pointed out in the literature review, while there is a growing range of studies on the link between wages and corruption, findings on whether higher salaries reduce incentives for corruption are mixed. Some studies conclude that anti-corruption policies designed to increase wages and net income of potentially corrupt agents may be ineffective. Moreover, La Porta et al. [25], contrary to our study, even found that higher government wages are correlated with more corruption. There is an emerging consensus that increasing salary may not be sufficient to curb corruption, in the absence of effective controls and management of staff and resources.

However, we think that one of the main arguments on the link between low salaries and corruption is that for top politicians with low salaries, corruption becomes a coping strategy to compensate for economic hardship. This "need-based" argument stems

from underpaid politician accepting bribes for basic necessities [32], as opposed to “greed-based” corruption, which is more apparent in cases of well-paid politicians in higher level positions [43].

Urbanization is connected with higher corruption, as the coefficient of *population* indicates on Table 3 (hypothesis 4). Though the literature is not conclusive in this respect, our results are in line with Meier and Holbrook [28] and Alt and Lassen [3], who defend a positive impact of urban concentration on corruption.

Finally, all other control variables turned out to be non significant as determinants of corruption (hypotheses 2, 3, 5 and 6).

Conclusions and further research

This paper evaluates the impact of socio-economic and financial factors on urban political corruption through a sample of the 110 Spanish largest municipalities for 2000–2009. This is a topical issue in Spain. For example, in the moment these lines are written (24 April 2014), the front page of one of the main Spanish newspapers (El País) reads: “The Spanish Attorney-General claims that more resources and laws are needed to curb corruption”. In this context, our findings indicate that measures to stop corruption should include an adequate salary scheme for politicians and full transparency on governments’ financial decisions and reports. However, the financial crisis in Spain has led to Spanish Parliament to adopt a measure consisting to limit the salary of the mayors, which currently has no legal limit. In the light of our results, we think that mayors should be well-paid and a salaries scheme for all municipal politicians should be set, as a way to curb corruption at the municipal level. A discussion, therefore, is opened about what we must understand for being well-paid; in this way, the discussion has to be responsible and free of demagogies. Our results confirm TI’s suggestion regarding municipal politicians’ remuneration, i.e., their salaries should be set according to their workload, as well as the size of the respective local government area.

Transparency of municipal reports should also be enhanced, as TI-Spain claims, as a way to enhance citizens and opposition control over government. We would like to emphasize the problem of urban planning agreements, which should be completely reformed by the Spanish Parliament. These agreements are opaque and foster the agency problem between principals (citizens) and agents (politicians). Besides, too many decisions are at the discretion of the mayor, which paves the way for corruption practices. However, increasing transparency is not enough, but it should be accompanied by measures for strengthening citizens’ capacity to act upon the available information. In this respect, transparency should go beyond budget reports, and as TI indicates, local politicians should be required to regularly disclose information related to gifts received, all properties and sources of income, debts and liabilities, shares in companies, as well as potential conflicts of interest.

Regarding municipal population, our results suggest that a different legal treatment should be applied to the largest municipalities. At present, in Spain, these cities have specific legislation regarding revenues and competences. This ad hoc regulation should also include measures to prevent corruption from happening in these big cities, such as tighter control from the SAI, closer budget and urban surveillance from the regional and/or central government, more citizens’ participation channels to enhance democracy,

etc. Some authors have even claimed that urbanization competences, currently devolved to municipalities, should return to the central government.

As far as further research is concerned, new datasets should improve the information about corruption. For example, taking information from courts' sentences on corruption cases. This would allow us to complement our analysis based on newspapers information and to incorporate the amount of money stolen to the dependent variable. Furthermore, institutional features that impact municipal corruption could be investigated in an international comparative approach.

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