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CORRUPTION SCANDALS, PRESS REPORTING, AND ACCOUNTABILITY.
EVIDENCE FROM SPANISH MAYORS

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Fiscal Federalism

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ACCOUNTABILITY. EVIDENCE FROM SPANISH MAYORS ***

Elena Costas-Pérez, Albert Solé-Ollé [†], Pilar Sorribas-Navarro

ABSTRACT: We analyse the effects of local corruption on electoral outcomes with Spanish data. Based upon press reports published between 1996 and 2009, we are able to construct a novel database on corruption scandals and news related to bribe-taking in exchange for amendments to land use plans. Our data show that local corruption scandals first emerged during the 1999-2003 term, but that they peaked just before the 2007 elections. We estimate an equation for the incumbent's vote share at this electoral contest and find the average vote loss after a corruption scandal to be around 4%, and the effect to be greater for cases receiving wide newspaper coverage (up to 9%). The effects found for the 2003 elections are much lower. When we consider cases in which the incumbent has been charged with corruption and press coverage has been extensive the vote loss can rise to 12%. However, press reports have a negative impact on the vote even when no judicial charges have been brought.

JEL Codes: P16, D72

Keywords: voting, accountability, corruption

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1. INTRODUCTION

Corruption is a complex phenomenon, and its negative political and economic consequences have been widely analysed in recent years. Corruption is said to erode trust in government and the legitimacy of political institutions (Anderson and Tverdova 2003; Bowler and Karp, 2004) and also to harm public finances (Hillman, 2004), deter foreign investment and trade (Wei, 2000; de Jong and Bogmans, 2010) and reduce growth (Shleyfer and Vishny, 1993; Mauro, 1995; Méndez and Sepúlveda, 2005). Institutions such as the World Bank identify corruption as being the single most important impediment to development. Given the potentially devastating impact of corruption, a better understanding of the institutions that might help to mitigate it seems to be crucial. One of the main findings from recent studies of the institutional determinants of corruption (Treisman, 2000; Lederman *et al.*, 2005) is that democracies are less corrupt than other political systems. The key ingredients of democracy, including party-based competition, free elections, press freedom, and an independent judiciary, are negatively correlated with corruption (see, e.g., Goldsmith, 1999; Besley and Burgess, 2002; Adserà *et al.*, 2003; Vaidya, 2005; Alt and Lassen, 2008; Feld and Voigt, 2003).

The basic mechanism ensuring democracy works is the capacity voters have to hold politicians accountable, ousting them from office if they have evidence of corruption, and rewarding honest behaviour with re-election. Yet, most of the empirical studies addressing this question report just modest effects of corruption on a candidate's vote. For example, Chang *et al.* (2010) find that Italian legislators went unpunished during most of the post-war period. In a case study conducted in Japan during the same period, Reed (1999) finds that the electoral punishment of legislators indicted for corruption was also quite modest. Similar results were found by Peters and Welch (1980) in their study of the effects of corruption charges on the re-election of candidates to the U.S. House of Representatives. They estimate

that candidates accused of corruption during 1968-78 lost on average around 8% of the vote. An update of this study for the period 1982-90 (Welch and Hibbing, 1997) found somewhat higher results, with an average vote loss of 10%, and lower probabilities of re-election for corrupt politicians. In their analysis of the congressional check-kiting scandal in 1992, Dimock and Jacobson (1995) find that most incumbents managed to be re-elected, albeit with a reduced vote share of around 5%.

Note that all these studies focus on the behaviour of legislators, with virtually no studies having analysed the effect of corruption on the electoral prospects of other officials. In particular, the electoral outcomes of mayors, which are the focus of this paper, have been neglected¹. One prominent exception is the article by Ferraz and Finan (2008) examining corrupt mayors in Brazil. They report sizeable electoral consequences when voters are provided with conclusive evidence of corruption in the form of federal audits of municipal accounts showing diversion of funds. Mayors identified as being corrupt in this way might lose from 10 to 30% of their vote share and see their re-election chances reduced by as much as 17%. The authors claim that the greater impact reported in their study reflects the fact that they use data for proven incidences of corruption. However, Golden (2006) suggests that the result might also be due to the direct relationship between ousting a corrupt mayor and improving public services, a relationship that is less certain in the case of a legislator than it is for a mayor. Our paper aims at contributing to the thin body of evidence describing how voters react to corruption at this local level. We believe there is a particular need for this evidence, given recent interest in the literature for determining whether accountability can be strengthened at the local level (see, e.g., Bardhan, 1997; Hindriks and Lockwood, 2009).

The literature on the electoral effects of corruption also suggests that the severity of the electoral punishment might depend on the attention the media pays to corruption. For instance,

¹ A number of papers analyse whether local officials are held accountable for public service performance (see, e.g., Brender, 2003, for the case of local governments in Israel, and Berry and Howell, 2007, who study school districts in the US).

the paper by Chang *et al.* (2010) finds that Italian legislators were only punished after considerable media coverage following a major judicial crackdown during the 11th legislature². At the local level, Ferraz and Finan (2008) find that the punishment of Brazilian mayors found corrupt by federal audits is much higher (the probability of being ousted rising to 30%) in municipalities with a radio station.³ Note, however, that none of these papers is really able to measure the degree of attention that the media devoted to each corruption case. As we explain below, we seek to improve on this by considering not only the effect of corruption scandals, but also the effect of the amount of press coverage.

Drawing on Spanish data for the 2007 and 2003 municipal elections, the present study analyses the effects of corruption on local electoral outcomes. Taking press reports published between 1996 and 2009, we construct a novel database on corruption scandals and news related to bribe-taking in exchange for amendments to land use plans that allow more development to take place. The main source of this data is the ‘Fundación Alternativas’, a Spanish think tank, which in 2007 commissioned a survey that recorded all corruption scandals as reported by national, regional and local newspapers during the period 2000-2007. This database was complemented by a bibliographical news search for the years before and after this period. Thus, the database contains 520 municipalities with at least one report of corruption during the period June 1999 to May 2007 (which covers the two terms eventually analysed here) and 5,144 news stories about corruption. The richness of the database allows

² Brender (2003) and Berry and Howell (2007), in their respective analyses of the effects of public service performance of voting in Israel and the US, also find that punishment only occurs during terms with wide media coverage of the issue.

³ Other papers focus on the effects of media coverage on accountability, but not specifically on corruption. For example, Strömberg (2004) finds that US counties with a radio station received more New Deal funds, and Snyder and Strömberg (2010) find that in House districts with more press coverage voters are better informed about the activities of their representative and, in turn, representatives tend to work harder for the district. A few papers study the relationship between media coverage and corruption. See, e.g., Svaleryd and Vlachos (2009) on the effect of media penetration on rent-extraction by Swedish municipalities, and Pugglisi and Snyder (2008) on partisan bias in the coverage of political scandals in Italy.

us not only to evaluate the average impact of corruption scandals on voting outcomes, but also to assess the role of press reporting (e.g. number of news stories, type of newspaper).

There are several reasons that make the Spanish case interesting. First, local corruption was not an issue before the elections we analyse here. The sudden emergence of corruption in Spain's local political life is the result of the recent boom in construction, which increased rewards for such behaviour. Second, and related to this, local corruption in Spain typically involves amendments to land use regulations, a type of corruption rarely studied before (see Cai *et al.*, 2009, for an exception). In Spain, municipalities are responsible for passing very detailed land use plans, which fix the exact amount of land for development in a given period, and the conditions of this development. The shortage of vacant land (and, more generally, restrictive regulations), coupled with a huge demand shock, provides developers with incentives to offer bribes to local officials in exchange for amendments to the plan that will permit more construction.

There are a number of specific traits related to this type of corruption that could potentially affect our results. First, it is a highly homogeneous type of corruption, a feature not typically found in empirical studies which tend to examine very different types of violation, some related closely with the concept of corruption (e.g. bribes, procurement fraud, and resource diversion) and others more further removed (e.g. financial irregularities, poor management, as well as other types of crime). Second, the nature of the corrupt act, entailing the modification of a regulation without directly affecting the local budget, means it might be perceived differently by voters to more traditional theft-related violations. Indeed, more lax land use regulations do have some effects that might be valued positively by certain voters, blurring the negative perception of corruption⁴. For instance, politicians accepting bribes in

⁴ In fact, there is a temptation to consider corruption of this kind as positive, since it is the mechanism by which inefficient regulations can be passed (see Fischel, 1985, for a discussion). Note, however, that even if this were true (something that is not clear once considerations regarding the preservation of open space are included), the mere fact that the act of corruption is contrary to democratically established laws and

exchange for permitting more development might be seen by some voters as entrepreneurs taking part of the profit they secure for the community in terms of higher economic opportunities related to this new development. However, as we show below (section 2.2), on average, Spanish voters have a negative perception of corruption.

Third, Spanish local corruption scandals received wide press coverage during these years, with news appearing in the main newspapers every day for extended periods. Despite this, there is anecdotal evidence that some corrupt mayors were re-elected and even improved their vote shares. Newspaper opinions on these cases reflect the popular wisdom that ‘Spanish voters do tolerate corruption’⁵. Local majoritarian elections with closed lists, a lack of independent media, low levels of transparency in local policy-making (see Transparency International, 2007), clientelism and patronage networks⁶, and a political culture of tolerance to fraud (see, e.g., Fundación Alternativas, 2008⁷) have often been invoked to justify these results. Thus, Spain seems a good testing ground to check the validity of some of these claims.

We use the corruption data to estimate an incumbent’s vote share equation for the 2007 and 2003 municipal elections. Most previous studies on this topic fail to account for the omission of popularity shocks. We use ‘difference-in-differences’ (DD) to attenuate this problem. Our DD estimation compares the increase in the vote share for the incumbent in two consecutive elections relative to the increase experienced by the previous incumbent in

regulations means that it can have profound effects on the quality of democracy. In fact, in Spain, recent reports warn against the effects of the upsurge in cases of local corruption on trust in government, electoral turnout, and participation in public affairs (see Fundación Alternativas 2010).

⁵ For example, a special report on corruption cases in Andalucía (a region in the south of Spain) by El País (a leading national newspaper) in 2007 was headlined as ‘The polls forgive accused officials’ (*‘Las urnas perdonan a los imputados’*, El País, 5/29/2007). The newspaper reported that 30 of the 40 officials facing charges of corruption before the 2003 local elections were re-elected.

⁶ A recent article in El País expressed this in the following way: “Corrupt politicians are those that don’t reach office alone but that are able to colonize the administration with the members of a clientelistic network, and this is quite easy in Spain” (*‘La paradoja de la corrupción’*, El País, 05/04/2010).

⁷ See also Hillman and Swank (2000), Paldam (2002), and Becker *et al.* (2009) for papers that analyse the effect of political culture on government corruption.

municipalities with and without cases of corruption. Our results for the 2007 elections⁸ suggest that the mean vote loss after a corruption scandal is around 4% and that this effect is larger in cases receiving wide reporting in the newspapers (up to 9%). The impact in the 2003 elections is much smaller and our findings are less precise. To account for the possibility that newspaper reporting might just capture the seriousness of a scandal, we also report results (using a reduced sample for the 2007 elections) regarding the impact of reporting when controlling for judicial charges. We find that prosecuted incumbents lose up to 12% of the vote, and that even when controlling for seriousness, press reporting has a significant effect (incumbents that have not been charged but whose cases have been reported widely still lose up to 4% of their vote).

The rest of the paper is organized as follows. In the next section we provide the basic background to the Spanish case, include details about the construction of the database, and describe the recent upsurge in corruption and the role that land use planning has played in it. Section three discusses our empirical strategy and presents the results and section four concludes.

2. CORRUPTION IN SPANISH LOCAL GOVERNMENT

2.1. *Measuring local corruption: the database*

Empirical studies of corruption use at least three different approaches to obtain the data they require. Most use either *perceptions* of corruption (e.g. Wei, 2000; Alesina and Weder, 2002) or draw on data from public records relating to corruption *charges* (see, e.g., Glaeser and Saks, 2006; Alt and Lassen, 2008). Given the difficulties of gathering data of this kind, both for long periods and at the local level, some authors have used bibliographical and/or

⁸ Our data show that local corruption scandals first emerged during the 1999-2003 term, but that their intensity reached its peak before the 2007 elections. Thus, we focus our empirical analysis primarily on the 2007 elections, and summarise our main findings for the 2003 polls.

internet-guided searches (Glaeser and Goldin, 2004; Saiz and Simonshon, 2011). Besides overcoming problems of availability, this approach has a number of additional advantages: it accounts for corruption only if voters had access to information about it, and the number of news reports or citations provides a natural way to measure both the occurrence of corruption and its intensity.

We, therefore, take this approach in this paper. We had access to a database of corruption scandals compiled by the Fundación Alternativas (2007), a Spanish think-tank. In 2007, shortly after the surge in corruption scandals that occurred in 2006, this organization commissioned a survey of local corruption in order to gauge quantitatively the actual relevance of the phenomenon. They hired a journalist in each Spanish province with the task of compiling all corruption related news stories involving municipalities in the province between 1 January 2000 and 1 February 2007 appearing in national, regional or local newspapers, and that were related to this period or to the past. The search found 663 cases of corruption occurring since 1991.

Before deciding to use this database we ran various verifications of its reliability. Fundación Alternativas has close links with the socialist party (PSOE), and we were concerned about a possible partisan bias of its database. Our suspicions were roused by the fact that the main left-wing newspaper in Spain ('El País') began a crusade in 2006 against corruption, with daily news reports on corruption scandals involving the main right-wing party (Partido Popular, PP). To check for this possibility, we compared this database with another one compiled by the right-wing newspaper 'El Mundo'⁹. The comparison showed that the proportion of corruption scandals by parties was not statistically different in the two

⁹ This database covers the same period as that of the Fundación Alternativas (2007) and we find that the number of reported scandals is similar. However, it only provides information as to whether a scandal happened or not, but says nothing about the number of news reports it attracted and sheds little light on the other case details that we use in this paper.

databases¹⁰. It seems, therefore, that Fundación Alternativas' database (2007) is not biased in its coverage of the scandals involving different parties. Indeed, in the description offered of the procedure employed in its data gathering, the institution states that the choice of journalists compiling the cases in each province included people working for both left and right-wing media outlets.

A further concern is the coverage provided by our database for the pre-2000 period and for the year 2007 given that the local elections took place in June of that year. Just 26 of the cases identified occurred before 2000, which could be due to the fact that most news reports were published near the date when the corruption occurred or to the fact that there were virtually no cases of corruption before that year. Moreover, just nine cases occurred in 2007, which is the result of the fact that only one month was examined in that year. Since the period we are interested in runs from May 1995 to June 2007, we completed the database with internet-guided searches in MyNews (<http://mynews.es>), a paid digital information management service covering all national and many of the regional newspapers¹¹. We screened the periods that run from 1 January 1996 (when the service's coverage starts) to 1 January 2000 (the starting date for the other survey), and from 1 February 2007 to 1 November 2009 (the day this search was performed). We conducted a search for news reports containing the word 'corrupción urbanística' (i.e. corruption related to land planning) and each of the more than 8,000 names of the Spanish municipalities. We found 20 additional cases prior to 2000 and 203 post 1 February 2007, 131 of which occurred before the June

¹⁰ These data and the statistical test have been omitted for reasons of space but are available from the authors upon request.

¹¹ The service covers just a few of the local papers for the pre-2000 period. However, only 7% of the cases in the database from Fundación Alternativas were covered solely by local newspapers (and not by regional and national ones as well), making this problem relatively unimportant. Further, as our results show, local news is far less relevant than national and regional reports in the eyes of the voters (see next section).

2007 elections¹². Thus, the overall number of cases in the database is 814, while the number of cases during the two terms of office studied (July 1999 to May 2007) is 696 (see Table 1).

[Insert Table 1]

Both databases also provide data on the publication date of each news item. The number of *scandals* during these two terms, defined as cases for which at least one news items was published during the term of office, is 565 (see Table 1). This number is lower than the number of corruption cases based on occurrence, because some of the cases were reported in the term following that in which the corruption was perpetrated. Given that we are interested in how incumbents are affected by the corruption scandals in which they were involved, we focus on scandals rather than on cases. Moreover, in our empirical analysis we do not use scandals that affected parties not in power (i.e. that had already been ousted) or that affected incumbents that had been involved in a corruption scandal in the previous term (see next section for an explanation). The numbers in parentheses in Table 1 indicate the number of scandals remaining once these two classes are removed. This reduces the number of scandals during these two terms to 453, 212 during the 1999-2003 term and 241 during the 2003-07 term of office.

The database also contains the number of news reports related to each of these cases and which were published during the term-of-office of the incumbent implicated in the scandal. The number of news reports totals 5144, with an average of ten news items per scandal. For nearly 30% of the cases there is only one news report, for 33% the number of reports is greater than one but less than five, 12% of them were mentioned in between five and ten news items, while 25% of the cases were written about in more than ten news stories. The database also informs us as to where these scandals were reported, that is in national, regional or local newspapers. National newspapers reported 46% of the scandals, regional newspapers 63%,

¹² As a robustness check, we also searched for news reports containing just the word “corrupción”, but we did not find additional cases.

and local newspapers just 23%. The sum of these percentages is greater than 100 because most cases were covered by more than one type of newspaper: 20% of the scandals were covered by both national and regional newspapers, 10% by regional and local, 6.5% by national and local, and just 3% by the three types of publication at the same time. The average number of news reports per scandal in national, regional and local newspapers was 9.4, 5.8 and 2.4, respectively.

The cases of corruption included in Fundación Alternativas' (2007) database were screened by a group of researchers, lawyers, and experts on land use regulations to verify that all the cases included were relevant and also to aid in the classification of the legal violations. For a sub-sample of 133 municipalities presenting cases of corruption during the 2003-07 term¹³, these experts were able to classify them (undertaking complementary research in judicial files where necessary) according to their seriousness. These data allow us to separate cases with *corruption charges* (58% of the scandals) from those situations where the opposition parties or other organizations went to the press with alleged accusations of corrupt behaviour by the incumbent, without any judicial action. Cases with *corruption charges* are defined as situations in which the politician's name appears in an attorney's investigative report or indictment. Moreover, the database allows us to classify the cases with *corruption charges* into: (i) cases already *filed* but with no conviction having been made (28% of the cases), which most frequently involve situations in which the attorney initiated an investigation but he and/or the judge concluded that there was insufficient evidence to go to trial; (ii) cases involving a formal *denouncement* from an opposition party or any other organization (23%), (iii) cases in which the attorney decided to initiate an *investigation* but where the case has yet to go to trial (13%); (iv) cases in which there has been a formal

¹³ See Fundación Alternativas (2008) for a description of the procedure used to build this sub-sample. Its size is the result of various difficulties encountered in gathering more detailed data. The values of the main covariates are, however, more similar than they are for the whole sample (results available upon request).

accusation by the attorney and which are awaiting trial (32%) and, finally, (v) cases that result in a *conviction* (4%).

2.2. *Descriptive analysis: the recent surge in corruption*

In the first two decades following the restoration of Spain's democratic local governments (1979-99) not much concern was expressed in the media, among the political elite, or the population in general to the lack of accountability or possible cases of corruption. This does not mean that there was no corruption in this period (in fact, some commentators warned about this possibility at a very early stage, see, e.g. Nieto, 1997), but simply that the severity of the problem and/or the probability of it becoming an issue depended on individual circumstances. First, local corruption typically appears in periods when the housing market is booming, and this was only the case from 1985 to 1991, and from 1995 to 2006. Second, during the first years of the newly elected local governments, the main concerns were with developing their powers and solving the longstanding deficits in local public infrastructure. Third, during part of this period (i.e. 1991-1996, coinciding with the Felipe González's last PSOE government, see Jiménez and Caínzos, 2003) the level of corruption in national government and the public perception of this reached very high levels, effectively hiding what might have been happening locally.

The situation began to change after 1995, with the switch in the housing market situation, but it did not really take off until 1999. As shown in Table 1, before 1999, there were just 46 cases of corruption, and just 20 of these were reported by the press during this period. The number of cases jumped to 288 during the term 1999-2003, with 227 of them being reported during this same term. Corruption did not go into decline after this, with 408 cases occurring during the 2003-07 term and 307 scandals. During the period that runs from the June 2007 elections to November 2009, 72 new cases appeared, but most of the scandals reported during this period referred to cases that had occurred in previous terms (131 out of a

total of 203 scandals). The reduction in the rate of new cases might be related to the crisis in the real estate market, which began in 2007 and became more intense in the years that followed. Overall, the numbers suggest that corruption first appeared after 1995 but that it did not become an issue until the 1999 elections. It also seems that the intensity was much higher before the 2007 elections than in the previous term. The evolution in the number of news stories (not reported here) shows exactly the same pattern.

[Insert Figures 1 & 2]

Data on the perception of corruption among Spanish voters corroborate this impression. Figure 1 shows the evolution in the percentage of people that cite ‘corruption and fraud’ as one of the three worst problems faced by the country during the period September 2001 to December 2008 (Source: CIS *Barometer*, several years). The negative perception of corruption among voters follows a similar pattern to that related to corruption scandals and news, increasing some months before the 2003 elections and, recording a higher intensity and many peaks during the three-year period that precedes the 2007 polls. This evidence suggests that we can expect the impact of corruption scandals on the vote to be greater in the 2007 than in the 2003 elections, although it is also plausible that some punishment had already been meted out at the 2003 polls.

What about prior elections? Figure 2 shows the evolution in the percentage of people that cite ‘politicians and parties’ as one of the three worst problems faced by the country during the period January 1995 to December 2008 (Source: CIS *Barometer*, several years)¹⁴. Note from this figure that the percentage of people citing ‘politicians and parties’ as a problem dropped abruptly from a very high level (i.e. 22% of the population) before the general elections held in March 1996 to just 2% before the June 1999 local elections. The

¹⁴ This database does not provide information on the ‘corruption and fraud’ response before September 2001, so we have to rely on the ‘politicians and parties’ question for that period. Note, however, that the profiles of both series appear to be very similar for the period September 2001 to December 2008, suggesting that people consider the terms ‘politicians’ and ‘corruption’ to be fairly interchangeable.

high level of awareness of corruption before 1996 reflects the corruption scandals that affected the last PSOE government led by Felipe González. Corruption was a key issue during the 1996 electoral campaign but progressively disappeared from the public arena after the socialists were ousted from government. Note also that the percentage of people citing politicians as a problem continued to drop after the 1999 local elections, and only started to peak once more in mid-2000. This reinforces our belief that corruption was not a problem prior to 1999, and justifies our specific focus on the 2003 and, especially, on the 2007 elections.

2.3. *Corruption causes: land use regulations*

Spanish commentators offer several explanations for the recent surge in corruption in local government, ranging from the existence of a culture of tolerance of corruption (see Fundación Alternativas, 2008, for a discussion), low levels of transparency in local decision-making (Transparency International, 2007), to the system of party financing (Nieto, 1997). However, the fact that most local corruption scandals involve bribes received in exchange for amendments to the land use plans suggests that the specific traits of this type of regulation have been important in this surge, especially when combined with the massive boom in real estate.

Land use regulations in Spain adhere to an extremely interventionist and highly rigid system (Riera *et al.*, 1991; Riera, 2000). A key characteristic is that, although an individual might own the land, the government is empowered to control and implement all processes of urban development. The main tool employed by the government for doing this is town planning, which is essentially a municipal responsibility. Municipalities draw up a 'General Plan', which provides a three-way land classification: *built-up land*, *developable land* (where future development is allowed), and *non-developable land* (the rest of the territory, where the development process is strictly prohibited). The 'General Plan' includes very detailed

regulations regarding many other aspects: land zoning (residential, commercial, industrial), maximum floor-to-area ratio for each plot, reservation of land for streets, green spaces and public facilities, etc.

The existence of a ‘development border’, a line between plots of land on which developers are allowed to build and plots where development is prohibited, is a key feature of Spain’s land regulation system. In periods of high demand this border creates a rent differential which might fuel the bribes developers are willing to pay to local politicians in exchange for shifting this border to their advantage¹⁵. The higher this rent differential is, the stronger are the incentives for developers to provide bribes to local officials in exchange for a displacement of the border, which converts more land from a rural to a potentially developable use (see Solé-Ollé and Viladecans, 2010¹⁶). Discretionary decision-making regarding other regulatory characteristics (e.g. the floor-to-area ratio) can create the same type of incentives.

In addition to discretionary decision-making, the lack of transparency and the shortage of channels of democratic participation in planning decisions are also a major concern in Spain. In theory, the ‘General Plan’ has an eight-year duration, but land classification can be readily modified by a majority vote in the municipal council¹⁷. The amendment plan, known as a ‘Partial Plan’, is also a legally binding document. A number of participation and transparency requirements apply to facilitate scrutiny by the residents, who can seek to change the document if they so wish. These requirements are stricter in the case of the initial

¹⁵ The idea that a government monopoly in the control of regulations can create rents and that these can in turn give incentives for corrupt behaviour can be found in many prominent studies on corruption (see, e.g., Rose-Ackerman, 1978, and Ades and Di Tella, 1998).

¹⁶ See Glaeser *et al.* (2005) and Hilbert and Robert-Nicoud (2010) for other papers that discuss the lobbying engaged in by developers to influence zoning decisions.

¹⁷ In Spain, municipal elections are held every four years. A proportional system with closed lists is used to elect the council members. The council then elects a mayor who in turn selects the executive from among the councillors of the party/parties providing him with support. The mayor has agenda-setting powers but important decisions (for example, the budget and the amendment of urban plans) have to be approved by a council majority.

introduction of the ‘General Plan’, but actual degree of transparency of the system is very much dependent on the will of local politicians. To implement the plan, local officials can resort to a variety of means to introduce desired amendments, without these changes having to come under much scrutiny from residents or the media¹⁸.

Many recent cases of corruption in Spain are consistent with these explanations. Thus, there are a large number of cases involving local officials that wrongfully allowed huge tracts of land to be developed, that amended the land use plan so as to permit higher construction densities in already developed land, or that allowed building in places where it had been previously prohibited (Fundación Alternativas, 2007). Many of the cases are also related to questionable contracts between developers and the city council, as a recent report has identified (Transparency International, 2007). Finally, in some cases corruption arises because land owned by the municipality is sold at below market prices or because payments made by developers for basic infrastructure are lower than those provided for under the law¹⁹.

3. EMPIRICAL ANALYSIS

3.1. *Dependent variable, period and sample*

The purpose of this analysis is to estimate the effect of reports of corruption scandals involving an incumbent mayor, during a given term-of-office, on that incumbent’s vote share at the following local elections. We analyse the vote for the incumbent party or parties, but not the vote for specific candidates, since our database does not provide this information. However, only a few of the candidates involved in corruption scandals or allegations of scandal chose not to run again or were forced by their parties to stand down. For example, in the 2007 elections just 19 corrupt candidates did not run again (see Fundación Alternativas,

¹⁸ This is the case, for example, of the contractual arrangements made between local governments and developers (the so-called ‘*Convenios Urbanísticos*’), which are permitted under Spanish law. Such contracts might modify the status of a plot, its floor-to-area ratio, or involve the renegotiation of developers’ fees.

¹⁹ This type of corruption is similar to that described by Cai *et al.* (2009) in Chinese land market auctions.

2008)²⁰. The 2007 results (available upon request) do not change if we exclude these municipalities from the analysis. We have no information regarding the number of candidates who stood down at the 2003 elections, but the picture presumably differs little.

Since a substantial percentage of municipalities are governed by coalitions (34% and 32% in the 1999-2003 and 2003-07 terms, respectively), our dependent variable is constructed as the sum of votes for all the parties in the government team (including the mayor's party, which is the one receiving most votes in the vast majority of cases, and its partners) over the total number of votes (recorded by parties both in and out of government). The average incumbent's vote share was around 55%, both in 2003 and 2007 and both for majority parties and coalitions²¹ (see Table 2 for data sources).

Here, we focus on the share of the incumbents vote at the two local elections (i.e. those of 2007 and 2003) that may well have been affected by the surge in number of corruption scandals. As reported in the previous section, it seems that media and electorate concern about corruption reached a peak before the 2007 elections, while the effect was less apparent in 2003 and certainly non-existent at earlier elections (1999 and 1995). For this reason, we pay more attention to the 2007 elections, albeit we also present results for the 2003 polls. In all circumstances, we believe that the evolution over time of this phenomenon justifies the separate treatment of the two elections.

[Insert Table 2]

In our analysis we compare the municipalities that experienced a corruption scandal for the first time during the term analysed (either 1999-2003 or 2003-07) with those that did not experience a corruption scandal in the previous terms (i.e. 1995-99 and 1999-2003 in the case

²⁰ This report speculates as to the causes of the decision not to stand down, suggesting that a decision to stand down is an implicit acceptance by the party of corruption. Moreover, in some cases, the party lacks any disciplinary measures that might impede a candidate from standing for election in representation of a different party, in which case it could cause vote losses to the incumbent's party.

²¹ In the case of coalitions, the average vote share of the mayor's party was 40% and that of the partners was 15%.

of the 2007 elections, and 1995-99 in the case of the 2003 polls). This means that our ‘treated’ group does not include the municipalities that experienced corruption during this term or in the previous one, and nor does it include those municipalities that reported a corruption scandal that did not affect the current incumbent. The reason for these exclusions is that corruption might have a different impact on the vote after having been experienced in the previous term, and this might also depend on whether the incumbent was ousted or not. Our ‘control’ group also excludes all municipalities that have experienced a case of corruption in the past so as to guarantee that we compare only those municipalities experiencing this problem for the first time with municipalities that have never faced such a problem. As a result, for the 2007 elections, the ‘treated’ group comprises 241 municipalities (see Table 1) while the control group comprises 4360 (from a total of 4601 municipalities)²². In the 2003 analysis, we have 4732 municipalities (212 ‘treated’ and 4655 ‘controls’).

3.2. Empirical strategy

Estimating the effects of corruption scandals on the incumbents’ vote share is not straightforward since cases of corruption seem more likely in municipalities where the popularity of the incumbent is high. Failure to account for this will bias negatively our estimates. We deal with this problem by adopting two methods: (i) OLS with control variables, & (ii) ‘Difference-in-differences’ (DD).

OLS with control variables. In this first approach, we use a cross-section of data to estimate by OLS a separate vote share equation for each of the two elections, according to the following linear specification (see, e.g., Healy and Malhotra, 2009, for a similar approach):

$$V_{ikj}^t = \alpha dC_i + \beta V_{ikj}^{t-1} + \delta_{kj} + \gamma Z_i + \varepsilon_i \quad (1)$$

²² Spain has more than 8,000 municipalities, but most are quite small. The control group is smaller than this because of data gathering problems. We believe that our control group is fairly representative of the population, since it includes the vast majority of municipalities with more than 5,000 inhabitants and a number of tests run on the remaining part of the sample show that the average values in the sample and the population (for the few variables which are available in both cases) are quite similar.

where dC_i is a dummy equal to one if there has been a corruption scandal in the municipality during the term-of-office preceding the election (either in 2007 or 2003). We also estimate the model with alternative measures of corruption (e.g. number of news reports), but for ease of presentation we refer only to the corruption scandal dummy in this section. V is the incumbent's vote share, while the sub-indexes indicate that votes were obtained in municipality i , belonging to region k , by party j , and the super-indexes inform that the votes were obtained by the incumbent at the electoral contests t and $t-1$ (i.e., 2007 and 2003, for the 2007 elections, or 2003 and 1999, for the 2003 elections). The incumbent's vote share in the previous election controls for differences across municipalities derived from voters' historical attachment to a given political party (see Solé-Ollé & Viladecans, 2010). The δ_{kj} are *Region* \times *Party* fixed effects, accounting for regional popularity differentials between parties. Its inclusion is justified by the fact that local elections in Spain can be seen partly as functioning as by-elections for regional and national polls. This means that when the popularity of a party falls regionally or nationally, so does its vote share at local elections (see, e.g., Bosch and Solé-Ollé, 2007a and 2007b). The intensity of these side effects often differs from region to region, so we allow these effects to differ across regions and parties. Z_i is a vector of controls, including a dummy indicating whether the incumbent at t was also incumbent at $t-1$, a dummy indicating whether the government is a coalition, and the growth during the term in unemployment and in population. These last two variables have been included to account for the possibility that voters punish poor economic performance and/or dislike the possible adverse social and/or environmental effects of excessive growth. Both variables are potentially correlated with corruption, since our corruption measures are related to bribe-taking in exchange of permitting additional growth (which could be both correlated with new jobs and environmental damage). In addition to these variables, we also discuss the results obtained when expanding the set of controls to include population size dummies, property tax

increase, and increases in current spending, investment and debt (see Table 2 for definitions and sources). ε_i is a random error term with the usual properties.

Difference-in-differences (DD). There are, however, some differences in popularity that might be municipality-specific and that are, therefore, difficult to capture with the lagged incumbents' vote share or the *Region* \times *Party* dummies. For example, in some places the incumbency advantage might be higher than in others (i.e. in some places there is a higher probability that an incumbent that obtained a given vote share in the past elections will be ousted from government). If these differences are constant in time, they can be controlled by the inclusion of a municipality fixed effect, ϕ_i , in the equation:

$$V_{ikjt}^t = \alpha dC_{it} + \beta V_{ikjt}^{t-1} + \phi_i + \delta_{kjt} + \gamma Z_{it} + \varepsilon_{it} \quad (2)$$

Note that now we allow the *Region* \times *Party* effects also to vary by election. To eliminate the municipality fixed effect, we need access to the data of at least one other election. Since we also have information for the 1999 and 1995 local elections, we are able to use two cross-sections for each election. For the 2007 local elections, we have the 2003-07 and 1999-2003 cross-sections. Note, moreover, that given the definition of the 'control group' (see previous section), $dC_{it} = 0$ for all the municipalities in 1999-2003²³. First-differencing over two consecutive terms, the estimated equation is just:

$$\Delta V_{ikjt}^t = \alpha dC_{it} + \beta \Delta V_{ikjt}^{t-1} + \delta_{kjt} + \gamma \Delta Z_{it} + \Delta \varepsilon_{it} \quad (3)$$

In this context, the interpretation of the 'difference-in-differences' estimate is that β is the effect on the incumbents' vote share between two consecutive elections of experiencing a corruption scandal for the first time, compared with municipalities where this did not happen and where it had never happened in the past. Obviously, since we control here for *Region* \times

²³ We proceed in a similar way in the case of the 2003 local elections, using the 1999-2003 and the 1995-99 cross sections.

Party × *Election* effects, this effect is measured with respect to the increase in the incumbents' vote share in municipalities of the same region and controlled by the same party.

The DD estimates of equation (3) will be unbiased whenever there are no uncontrolled municipality × election popularity shocks. If, for example, more popular incumbents tend to also be more corrupt (see, e.g., Svaleryd and Vlachos, 2008), then the effect of corruption on the vote could be biased downwards. A way of addressing this problem is to use an alternative control group, namely the municipalities in which we know cases of corruption occurred in the same term, but which were not reported until the following one (see, e.g. Ferraz and Finan, 2008). There are 62 and 101 such municipalities for the 1999-2003 and 2003-07 terms (see Table 1), respectively. This procedure would completely eliminate this type of bias, since we would be comparing the electoral results of corrupt municipalities where corruption went unnoticed before the elections (because the press failed to report it) with the electoral results of municipalities which are also corrupt (and thus supposedly similar) but where the press did report the cases of corruption before the election and, thus, a scandal occurred.

However, this procedure is not free of problems. The main reason is that, since our corruption data comprise cases reported by the press, it is conceivable that lower vote margins lead to more reporting (see, e.g., Snyder and Strömberg 2010). If this is the case, the estimated effect using the *not-reported as corrupt* control group will be biased upwards. Nevertheless, we also report these results, since their comparison with those obtained when using the first control group (*non-corrupt* municipalities) might also be informative. For instance, let us assume that the first type of bias (more corruption with more popularity) dominates the second (more reporting with more popularity) when using the *non-corrupt*

municipalities as a control group²⁴. In this case, the estimates obtained when using the *non-corrupt* and the *not-reported as corrupt*, respectively, as control groups are the lower and upper bounds for the true effect of corruption on the vote. The usefulness of this approach depends on these bounds not being very far apart from each other. As we show in the results section, the DD estimates with the *not-reported as corrupt* control group are higher than those with the *non-corrupt* control group, confirming our expectations. Since the difference between the two estimates is not large, we are confident that our estimates are not severely biased.

3.3. Results

Tables 3 to 7 present the results of the estimation of the effects of corruption scandals on incumbents' votes. Table 3 presents the main OLS and DD results for the 2007 elections using just the dC dummy as a measure of corruption. Table 4 shows these DD results for the 2007 elections when adding the number of news reports to the equation. Table 5 shows how these results change when judicial charges are added. Table 6 presents a summary of the OLS and DD results for the alternative control group. Table 7 shows the main results for the 2003 elections.

[Insert Table 3]

Main OLS and DD results for the 2007 elections. Columns (i) to (iv) of Table 3 show the OLS results for the effect of the incidence of a corruption scandal (dC=1) when adding: (i) only the lagged incumbent's vote, (ii) *Region×Party* fixed effects, (iii) control variables, and (iv) both *Region×Party* fixed effects and control variables. Columns (v) to (viii) show the DD results when respectively adding the same sets of controls as above for OLS. The OLS estimates with no controls suggest that a corruption scandal results in just a 2.1% fall in the incumbent's vote. The impact rises to 2.3% when adding the control variables, to 2.7% with

²⁴ As shown below, when including different kinds of control, the estimates using the non-corrupt control group always go up, suggesting the first type of bias dominates.

the *Region×Party* fixed effects and to 2.8% when adding all the controls. The DD results are higher than the OLS ones (3.8% vs. 2.8% when all the controls are included), which is consistent with omitted popularity being positively correlated with corruption. Note also that the DD results do not change greatly when the different sets of controls are included. *Region×Party* fixed effects seem to control quite well for omitted popularity, especially in the OLS case (i.e. when municipality fixed effects are not taken into account). With the exception of *Population growth* in the DD equations, several control variables included are statistically significant and their effects are in line with our expectations. Of particular interest is the fact that voters seem to punish *Unemployment growth*. However, the inclusion of this variable and the other controls in the vote equation has no effect on the corruption coefficient, especially in the DD case.

[Insert Table 4]

Additional DD results for 2007: number of news reports. Table 4 presents the DD results when other measures based on the number of news reports are added to the equation. Columns (i) to (iii) explore the effects of including news report counts, while columns (iv) to (vi) analyse the effects of these reports having been published in different types of newspaper (national, regional or local). The results in columns (i) and (ii) show that both the incidence of a scandal and the intensity of newspaper reporting of this scandal matter. The estimates in column (i) suggest that an incumbent implicated in an average scandal measured in terms of the number of news reports (i.e. ten during the 2003-07 term) will lose 2.8% of the vote following publication of the first report and an additional 2% as a result of total press coverage, giving a total vote loss of 4.8%. Column (ii) seeks a possible non-linear effect of the number of news reports, using dummies that recognise thresholds of more than five, ten and twenty reports. Here, the base category is a corruption case with fewer than five press reports. We find that publication of more than five reports (but fewer than ten) does not make

any difference, but that publication of more than ten news reports results in a significant additional vote loss. The publication of more than twenty reports does not make any difference, once a scandal has been written about in more than ten news stories²⁵. It seems, therefore, that the ten news report threshold best defines a scandal receiving substantial coverage by the press. This means that for the 25% of scandals in the sample regarding which more than ten news reports were published, the incumbents' vote loss is much higher than in the rest of cases, rising to 8.8% (i.e. 2.7%+6.1%, see column (iii)).

Columns (iv) to (vi) display the results obtained when splitting the corruption scandals and news reports according to the type of newspaper (national, regional and local). In column (iv), the base category is corruption scandals reported by regional newspapers. The results suggest that scandals that were reported by national or local newspapers as well do not have a stronger effect on the incumbents' vote than those reported only in the regional press. In column (v), the press coverage given by national newspapers does not have a more marked effect than that provided by the regional press, while local news reports about corruption are actually good for the incumbent. Column (vi) combines the more than ten news dummies with thresholds for national and local news. Again, we find that scandals widely covered by national and/or regional newspapers but not by the local media take more votes away from the incumbent ($10.5\%=3.9\%+6.6\%$). If the scandal is also covered by the local media then this effect is much lower ($5.1\%=10.5\%-5.4\%$), although still higher than if the scandal were not widely covered by any of the press (3.9%). These results might reflect the fact that newspaper competition is usually very low at the local level. Typically, just one newspaper is published at the local level, and it is often partly funded by the local council. We speculate that government control of local media is highly plausible in these cases.

[Insert Table 5]

²⁵ We examined the effect for a finer classification of thresholds, but obtained very similar results.

Additional DD results: news reports vs judicial charges. Table 5 presents the DD results when adding the variables that account for judicial charges to the equation. The main purpose of this analysis is to determine whether the results related to scandals and news reports of them might just be a reflection of the fact that newspapers only report the most serious cases, which are those involving some type of judicial action. The results in Table 5 suggest that cases registering a formal *accusation* by the attorney (that is, cases going to trial) lead to a substantial vote loss (around 7% more than cases for which no charges are brought, which are the base category, picked up here by the dC dummy). *Conviction* also results in an additional 6% vote loss (than in the base case), while cases that are under *investigation* (but which were not taken any further) result in an additional 2% vote loss²⁶. Interestingly, in cases in which there were *denouncements* of corruption from the opposition, the vote share was unaffected (in fact, the coefficient is positive, though not statistically significant), while cases already *filed* (and which did not end in conviction) actually resulted in additional votes (around 6%) being cast in favour of the incumbent. These results suggest voters do not consider cases of corruption raised by the opposition (*denouncements*) as being credible. A *filed* case also appears to be interpreted as direct evidence that the charge was motivated by an intention to harm the opponent. Note also from Table 5 that once the severity of the scandal has been accounted for, the effect of a scandal without charges of corruption (picked up by the dC dummy) is smaller (1.4% in columns iii). Columns (iv) and (v) present average results for municipalities recording some type of *corruption charge*, excluding those which are not ongoing (i.e. *denouncements* and *filed* cases). The results suggest that electoral punishment varies depending on whether the incumbent is charged or not and also (as above) on press coverage. Scandals in which formal charges have been made and for which press coverage is

²⁶ Note that the categories of corruption charges are mutually exclusive, so their effects do not add up. In contrast, scandals and charges are not mutually exclusive. Thus we find that there are some scandals with charges and all cases with charges are also scandals, since all our cases have been reported by the press (involving at least one news report).

wide cause a substantial vote loss ($12.4\% = 1.4\% + 5.7\% + 5.3\%$). Scandals already *filed* or *denounced* and with wide coverage cause a vote loss of just 2% ($= 1.4 - 5.1\% + 5.7\%$), becoming a vote gain when there is little press coverage ($3.7\% = 5.1\% - 1.4\%$).

Note that in any case, however, scandals and press coverage have an effect on the vote even after controlling for judicial action. In column (v) we have allowed for an interaction between wide coverage and judicial charges and have found a negative sign, suggesting that news reports and charges serve to reinforce each other. Yet, in this case reporting continues to have an independent effect on the vote, albeit much lower than previously (4.2% vs. 7.1%).

[Insert Tables 6 and 7]

Summary of OLS and DD results with an alternative control group. Both the OLS and the DD results are somewhat higher when using the municipalities *not-reported as corrupt* as our control group rather than the *non-corrupt* municipalities (Table 6). The estimated vote loss following a case of corruption rises from 2.1% to 4.8% in the case of OLS, and from 3.7% to 5.4% in that of DD, although the precision of the estimates is lower when using the alternative control group. For widely reported cases, the estimate is also higher when using the municipalities *not-reported as corrupt* as a control group (i.e. the DD results rise from 8.8% to $11.8\% = 5.4\% + 6.4\%$, see column (vi) of Table 6). These results are consistent with the expected direction of the bias. The control group of municipalities *not-reported as corrupt* presents upwardly biased estimates, while the *non-corrupt* control group presents downwardly biased estimates. Moreover, as the difference between these two estimates is not great, the estimated effect of corruption on the incumbents' vote lies within a fairly narrow range.

Summary of the OLS and DD results for the 2003 elections. The main results for the 2003 elections are presented in Table 7. Both the OLS and the DD results report estimates that are much lower and less precise. In some cases, the coefficients are not even statistically

significant. These results would seem to reflect the fact that the first cases of corruption appeared just before the 2003 elections, when press reporting and citizen awareness of the problem were both much lower than they would be in the following term.

Robustness checks. We have re-estimated our equations introducing the following modifications: (i) we have introduced an additional set of control variables, which includes population size dummies (lower than 1000, 1000 to 5000, 5000 to 20000, higher than 20000), property tax increase, and increases in current spending, investment and debt; (ii) we have modified the definition of the main control group slightly, and have included just those municipalities without any recorded incidents of corruption (both in the past and in the future, and not just in the past); (iii) we have estimated the effects of an incumbent being found corrupt in two consecutive terms (recall these observations were previously eliminated from the sample). The results can be summarized as follows: (i) the additional control variables are jointly statistically significant, but most are not individually statistically significant and their explanatory capacity is low; in all circumstances, however, they do not affect the final results; (ii) the change made to the definition of the control group has no discernible effects on our coefficients of interest; (iii) incumbents found corrupt on two consecutive occasions are not punished (which might be an indication of an omitted popularity bias), probably because they were re-elected because of their popularity.

4. CONCLUSION

This paper has studied the effects of the recent upsurge in corruption in Spain on the vote polled by local incumbents involved in such scandals. Based on press reports of corruption between 1996 and 2009, we have constructed a novel database reporting incidences of corruption and news related to charges of bribe-taking in exchange for amendments to land use plans. With these data, we have then estimated an equation for an

incumbent's vote share at the 2007 and 2003 municipal elections. Using OLS and 'difference-in-differences' (DD) methods, we show that voters punished corrupt local politicians, albeit that while the severity of this punishment was fairly great at the 2007 elections it was more modest at the 2003 polls. We are also able to demonstrate that when the press reports widely on a case of corruption, politicians are punished more severely. DD results suggest that at the 2007 elections the mean vote loss following a corruption scandal was around 4% for cases with fewer than ten news reports, rising to 9% for cases with more than ten reports (25% of all cases). The magnitude of this impact is in line with the moderate effects reported in the literature (see, e.g., Peters and Welch, 1980; Welch and Hibbing, 1997). Note, however, that to assess the magnitude of the coefficient accurately, we would need to compare it with the average margin of victory at Spain's local elections, which stood at just around 5%. Clearly, such a comparison is not strictly reasonable, given that corrupt municipalities typically present a higher margin, in our case of around 10%. Yet, while it would appear that many corrupt incumbents could afford the downturn suffered by their vote, others would most assuredly be ousted from office. When we accounted for the seriousness of the corruption charges, the impact was even more marked, with incumbents exposed to wide scale press coverage losing around 12% of their vote²⁷. Fundación Alternativas (2008) reports that around 30% of the incumbents accused of corruption before the 2007 polls were in fact ousted from office. Our results, therefore, are not inconsistent with these figures.

Our findings also show that not all types of corruption charges have a negative impact on the incumbent's vote. Thus, accusations or cases filed by the opposition or civil society and not investigated by the judiciary actually result in the incumbent receiving more votes. This suggests that, in some instances, corruption scandals are perceived by the electorate as attempts by the opposition parties to inflict harm on the incumbent and that such accusations

²⁷ This was the case for just 10% of all corrupt incumbents: 25% (scandals with wide press coverage) x 58% (the scandals involved corruption charges) x 69% (the case has not been filed and/or is not the result of accusations from the opposition or civil society).

are unfounded. The inclusion of such cases with other more credible accusations goes some way to explaining why previous assessments of the impact of corruption on the vote in Spain conclude that there was no effect (Fundación Alternativas, 2007).

Likewise, a failure to consider the intensity of press reporting also helps to explain this conclusion. Our results, moreover, suggest that press reporting is not simply an indicator of the seriousness of a case, as measured by the type of legal proceedings initiated. Even after controlling for legal charges, press coverage has an independent effect on the vote, with wide press coverage intensifying the effect of judicial action. This suggests the press and the judiciary have a complementary role in making voters aware of corruption. In the initial stage, the press breaks a story about corruption, thereby raising voter awareness and, at the same time, facilitating subsequent judicial action. In the second stage, the press plays a role as a disseminator of information regarding the results of the judicial investigation²⁸.

The results for the 2003 elections show a much lower impact, which lends further weight to the argument that press reporting is a relevant factor in fighting corruption. It was not until newspapers began turning their attention to the phenomenon (primarily following the 2007 elections) that voters were aware of the situation (recall Figures 1 and 2), while the punishments imposed were only substantial in cases that received wide press coverage. Our results also show that national and regional newspapers provide press coverage that is effective in fighting corruption, while coverage by local newspapers tends to be ineffective. These results are cause for concern, since it suggests that the role of the press in fighting corruption is limited to cases that are of sufficient interest for regional and national audiences only. This would seem to have been the case recently, with corruption being a by-product of the massive real estate boom throughout much of Spain. However, it is not clear that the

²⁸ Note that these results identify an additional role for the judiciary in the fight against corruption and one not commonly captured in the literature. Most papers assume that the judiciary's role is the punishment of corrupt politicians (see, e.g., Alt and Lassen, 2008). However, in Spain we find that the judiciary can help clarify which corruption scandals are in fact serious and, thus, worthy of the electorate's attention, thereby increasing the effectiveness of the voting mechanism.

regional and national press will continue to show an interest in covering more localized cases of corruption in the future.

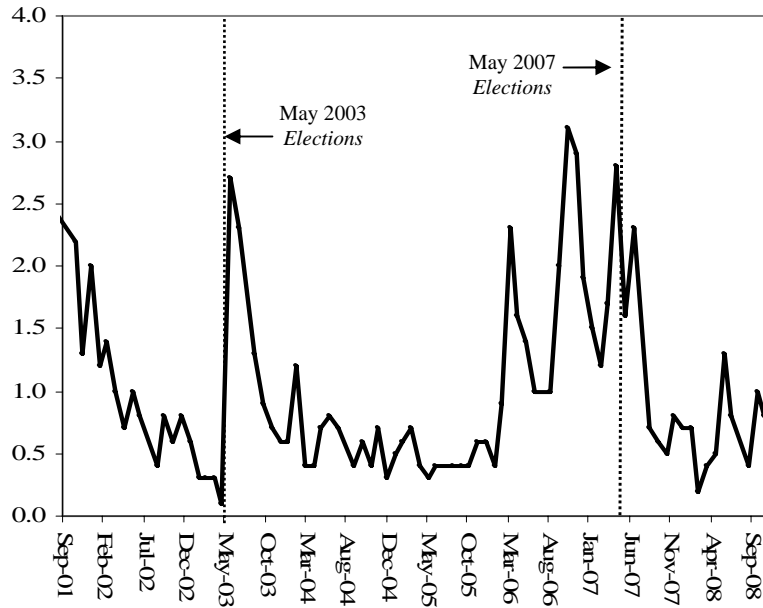
REFERENCES

- Ades, A. and Di Tella, R. (1999): "Rents, Competition and Corruption," *American Economic Review* 89(4), 982-994.
- Adserà, A., Boix, C. and Payne, M. (2003): "Are You Being Served? Political Accountability and Quality of Government," *Journal of Law, Economics and Organization* 19(2), 445-490.
- Alesina, A. and Weder, B. (2002): "Do Corrupt Governments Receive Less Foreign Aid?," *American Economic Review* 92(4), 1126-1137.
- Alt, J.E. and Lassen, D. (2008): "Political And Judicial Checks On Corruption: Evidence From American State Governments," *Economics and Politics* 20(1), 33-61.
- Anderson, Ch. and Tverdova, Y. (2003): "Corruption, political allegiances, and attitudes toward government in contemporary democracies," *American Journal of Political Science* 47, 91-109.
- Bardhan, P. (1997): "Corruption and Development: A Review of Issues," *Journal of Economic Literature* 35(3), 1320-1346.
- Becker, S.O., Egger, P.H. and Seidel, T. (2009): "Common political culture: Evidence on regional corruption contagion," *European Journal of Political Economy* 25(3), 300-310.
- Berry, Ch.R. and Howell, W. (2007): "Accountability and local elections: rethinking retrospective voting," *Journal of Politics* 69(3), 844-858.
- Besley, T. J. and Burgess, R. (2002): "The Political Economy of Government Responsiveness: Theory and Evidence from India," *Quarterly Journal of Economics*, 117(4), 1415-1452.
- Bosch, N., Solé-Ollé, A. (2007a): "When do tax increases cause electoral damage? The case of local property tax in Spain," in J. Casas and P. Schwartz (eds.): *Public Choice and the Challenges of Democracy*. Edward Elgar, 316-347.
- Bosch, N., Solé-Ollé, A. (2007b): "Yardstick competition and the political costs of raising taxes: An empirical analysis of Spanish municipalities," *International Tax and Public Finance*, 14 (1), 71-92.
- Bowler, S. and Karp, J.A. (2004): "Politicians, scandals, and trust in government," *Political Behavior* 26(3), 271-287.
- Brender, A. (2003): "The effect of fiscal performance on local government election results in Israel: 1989-1998," *Journal of Public Economics* 87(9), 2187-2205.
- Cai, H., Henderson, J.V. and Zhang, Q. (2009): "China's Land Market Auctions: Evidence of Corruption?," NBER Working Paper 15067.
- Chang, E., Golden, M. and Hill, S. (2010): "Legislative Malfeasance and Political Accountability," *World Politics* 62(2), 177-220.
- de Jong, E. and Bogmans, Ch. (2010): "Does corruption discourage international trade?," *European Journal of Political Economy*, forthcoming.
- Dimock, M. A. and G. C. Jacobson (1995): "Checks and choices: The House bank scandal's impact on voters in 1992," *Journal of Politics* 57 (4), 1143-59.
- Feld, L.P. and Voigt, S. (2003): "Economic growth and judicial independence: cross-country evidence using a new set of indicators," *European Journal of Political Economy* 19(3), 497-527
- Ferraz, C. and Finan, F. (2008): "Exposing Corrupt Politicians: The Effects of Brazil's Publicly Released Audits on Electoral Outcomes," *Quarterly Journal of Economics* 123(2), 703-745.

- Fischel, W. (1985): *The economics of zoning regulations: a property rights approach to American land use regulations*. John Hopkins University Press, Baltimore.
- Fundación Alternativas (2007): *Urbanismo y democracia. Alternativas para evitar la corrupción*, Madrid.
- Fundación Alternativas. (2008): *Informe sobre la Democracia en España 2008*, Madrid.
- Fundación Alternativas. (2010): *Democracy in Spain 2010. The erosion of confidence and well-being. Against citizens' disaffection*, Madrid. www.falternativas.org.
- Glaeser, E. L. and Goldin, C. (eds.) (2004): *Corruption and Reform: Lessons from America's Economic History*. University of Chicago Press.
- Glaeser, E.L and Saks, R.E. (2006): "Corruption in America," *Journal of Public Economics* 90(6-7), 1053-1072 .
- Glaeser, E.L, Gyourko, J., Saks, R.E. (2005): "Why have housing prices gone up?," *American Economic Review. Papers and Proceedings* 95(2), 329–333.
- Golden, M. (2006): "Some Puzzles of Political Corruption in Modern Advanced Democracies." (December 2006). Annual meetings of the Japan Political Science Association, Tokyo. <http://www.golden.polisci.ucla.edu/>.
- Goldsmith, A. A. (1999): "Slapping the Grasping Hand: Correlates of Political Corruption in Emerging Markets". *American Journal of Economics and Sociology*, 58(4), 865-883.
- Healy, A. and Malhotra, N. (2009): "Myopic voters and natural disaster policy," *American Political Science Review* 103(3), 387-406.
- Hilber, C.A., Robert-Nicoud, F. (2010): "On the origins of land use regulations: theory and evidence from US metro areas," IEB Working Papers 2010/33, Barcelona Institute of Economics (IEB), Barcelona.
- Hillman, A. (2004): "Corruption and public finance: an IMF perspective," *European Journal of Political Economy* 20(4), 1067-1077.
- Hillman, A. and Swank, O. (2000): "Why political culture should be in the lexicon of economics," *European Journal of Political Economy* 16(1), 1-4.
- Hindriks, J. and Lockwood, B. (2009): "Decentralization and electoral accountability: Incentives, separation and voter welfare," *European Journal of Political Economy*, 25(3), 385-397.
- Jiménez, F., and Caínzos, M. (2003): "Political corruption in Spain: Perceptions and problems", in M. Bull and J. Newell (eds.): *Corruption in contemporary politics*. London: Palgrave Press
- Lederman, D., Loyaza, N.V. and Soares, R.R. (2005): "Accountability and corruption: political institutions matter," *Economics and Politics* 17(1), 1-35.
- Mauro, P., (1995): "Corruption and Growth", *Quarterly Journal of Economics* 110/3, 681-712.
- Mendez, F. and Sepulveda, F. (2006): "Corruption, growth and political regimes: Cross country evidence," *European Journal of Political Economy* 22(1), 82-98.
- Nieto, A. (1997): *Corrupción en la España democrática*. Ed. Ariel.
- Paldam, M. (2002): "The cross-country pattern of corruption: economics, culture and the seesaw dynamics," *European Journal of Political Economy* 18(2), 215-240.
- Peters, J. G. and S. Welch (1980): "The effects of charges of corruption on voting behavior in Congressional elections," *American Political Science Review* 74 (3), 697– 08.
- Puglisi, R. and Snyder, J. (2008): "Media coverage of political scandals," NBER Working Paper 14598.

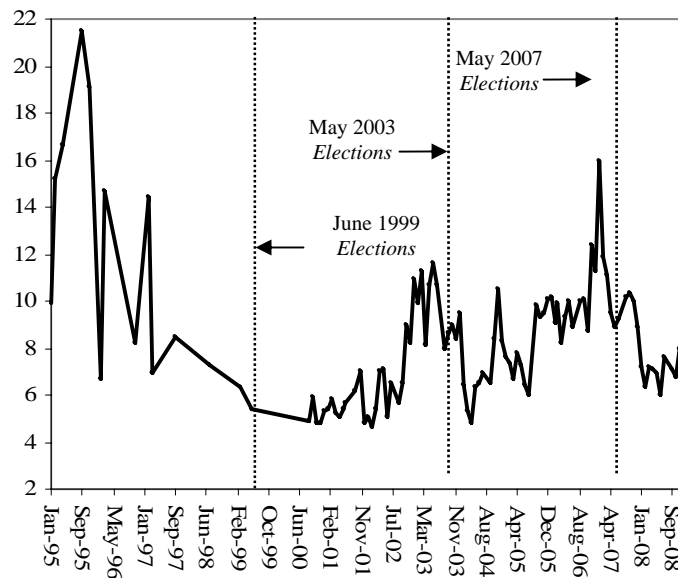
- Reed, S. R. (1999): "Punishing corruption: The response of the Japanese electorate to scandals," in O. Feldman (Ed.), *Political Psychology in Japan: Behind the Nails Which Sometimes Stick out (and Get Hammered Down)*. Commack, N.Y.: Nova Science.
- Riera, P. (2000): "Economic Implications of the Spanish Planning System, With Emphasis on Value Capture Mechanisms." Report to the *Lincoln Institute of Land Policy*, Washington.
- Riera, P., Munt, I. and Keyes, J. (1991): "The Practice of Land Use Planning in Spain," *Planning Practice and Research* 6 (2), 11-18.
- Rose-Ackerman, S. (1978): *Corruption. A Study in Political Economy*, New York, San Francisco and London, Academic Press.
- Sáiz, A. and Simonshon, U. (2011). "Proxying for unobservable variables with internet document frequency," *Journal of the European Economic Association*, forthcoming.
- Shleifer, A. and Vishny, R.W. (1993): "Corruption," *Quarterly Journal of Economics* 108, 599– 617.
- Snyder, J. and Strömberg, D. (2010): "Press coverage and political accountability," *Journal of Political Economy* 118:2, 355-408.
- Solé-Ollé, A. and Viladecans, E. (2010): "Lobbying, political competition, and local land supply: recent evidence from Spain," Working Paper 45/2010, Institut d'Economia de Barcelona (IEB), Barcelona.
- Strömberg, D. (2004): "Radio's impact on public spending," *Quarterly Journal of Economics* 119, 189-221.
- Svaleryd, H. and Vlachos, J. (2009): "Political rents in a non-corrupt democracy," *Journal of Public Economics* 93, 355-372.
- Transparency International (2007): *Informe global de la corrupción en España 2007*, <http://www.transparencia.org.es/>.
- Treisman, D. (2000): "The Causes of Corruption: A Cross-National Study," *Journal of Public Economics*, 76(3), 399-457.
- Vaidya, S. (2005): "Corruption in the media's gaze," *European Journal of Political Economy*, 21(3), 667-687.
- Wei, S. (2000): "How Taxing is Corruption on International Investors?," *Review of Economics and Statistics*. 82 (1): 1-11.
- Welch, S. and Hibbing, J. (1997): "The Effect of Charges of Corruption on Voting Behavior in Congressional Elections, 1982-90," *Journal of Politics* 59, 226-239.

Figure 1:
% Respondents saying 'corruption and fraud' are among the three worst problems faced by the country, Sep-2001 to Dec-2008



Source: Centro de Investigaciones Sociológicas (CIS): *Barómetro*, several years.

Figure 2
% Respondents saying 'politicians & political parties' are among the three worst problems faced by the country, Jan-1995 to Dec-2008



Source: Centro de Investigaciones Sociológicas (CIS): *Barómetro*, several years

Table 1:
Nº of corruption cases vs. nº of corruption scandals

		<i>Corruption reported (=Scandals)</i>					
		Jan-1996 June-1999	July-1999 May-2003	June-2003 May-2007	June-2007 Nov-2009	July-1999 May-2007	Jan-1996 Nov-2007
<i>Corruption occurs (=Cases)</i>	June-1991 May-1995	6 (3)	7 (5)	1 (1)	--	8 (6)	14 (9)
	June-1995 Jun-1999	14 (7)	10 (8)	8 (2)	--	18 (10)	32 (17)
	July-1999 May-2003	--	227 (212)	31 (17)	30 (26)	258 (229)	288 (255)
	June-2003 May-2007	--	--	307 (224)	101 (49)	307 (224)	408 (273)
	June-2007 Nov-2009	--	--	--	72 (60)	--	72 (60)
	July-1999 May-2007	--	227 (212)	338 (241)	131 (75)	565 (453)	696 (528)
	June-1991 Nov-2009	20 (10)	244 (225)	347 (244)	203 (135)	591 (469)	814 (614)

Notes: (1) Both number of cases and scandals refer to the number of municipalities affected, (2) Corruption cases = recorded during the term in which the corrupt act originating the scandal occurred. (3) Scandals = recorded during the term the press reported the case. (4) In brackets we show the number of observations after excluding: a) those municipalities where corruption happened in a period before that in which the scandal was reported and the incumbent was not the same; b) those municipalities that have been involved in cases of corruption in the past (these are the criteria used in building our 'treated' group). (5) In bold are the scandals used in the empirical analysis, and in bold and italics the cases used to build the alternative control group based on municipalities that are corrupt but where corruption was reported after the elections.

Source: Fundación Alternativas (2007) and authors' own data search in MyNews.

Table 2:
Descriptive statistics. 1999-2003 & 2003-07 terms.

Variable	Mean	S.D.	Max	Min
<i>Corruption</i> (dC=1) ⁽⁴⁾	0.050	0.218	1	0
<i>Corruption News</i> ⁽⁴⁾	10.434	22.584	208	1
<i>More than 5 News Reports</i> ⁽⁴⁾	0.324	0.469	1	0
<i>More than 10 News Reports</i> ⁽⁴⁾	0.253	0.402	1	0
<i>More than 20 News Reports</i> ⁽⁴⁾	0.124	0.329	1	0
<i>Local News</i> ⁽⁴⁾	1.294	5.523	87	0
<i>National News</i> ⁽⁴⁾	3.983	12.509	158	0
<i>Local Scandal</i> ⁽⁴⁾	0.229	0.421	1	0
<i>National Scandal</i> ⁽⁴⁾	0.468	0.499	1	0
<i>More than 2 Local News Reports</i> ⁽⁴⁾	0.103	0.305	1	0
<i>More than 5 National News Reports</i> ⁽⁴⁾	0.160	0.367	1	0
<i>Vote share</i> ⁽¹⁾	0.556	0.106	0.851	0.354
<i>Incumbent in t-1</i> ⁽¹⁾	0.734	0.564	1	0
<i>Coalition</i> ⁽¹⁾	0.356	0.478	1	0
<i>Population growth</i> ⁽²⁾	0.041	0.169	-0.237	2.650
<i>Unemployment growth</i> ⁽³⁾	0.004	0.014	-0.078	0.371

Definitions: *Corruption* = 1 if a corruption scandal occurred during the term, 0 otherwise. *Corruption News* = number of news reports related to the scandals occurring during the term. *More than X News Reports* = 1 if *Corruption News Reports* > X. *Local News* = number of news stories reported by local newspapers. *National News* = number of news stories reported by national newspapers. *Local Scandal* = 1 if a corruption scandal is reported by a local newspaper. *National Scandal* = 1 if a corruption scandal is reported by a national newspaper. *More than X Local (National) News Reports* = 1 if *Local (National) News Reports* > X. *Vote share* = vote for the incumbent party/parties/total vote. *Incumbent in t-1* = 1 if the same party or a coalition were also incumbents in t-1. *Coalition* = 1 if the mayor's party does not have a majority of seats in the city council. *Population growth* = $(pop. in t - pop. in t-4)/pop. in t-4$. *Unemployment growth* = $(unemp. in t - unemp. in t-4)/pop. in t-4$.

Data sources: (1) Ministry of Interior and Ministry of Public Administrations; (2) National Institute of Statistics (www.ine.es), (3) Social Security Register, (4) Fundación Alternativas and authors' own elaboration using MyNews.

Table 3
Effect of corruption scandals on incumbents' vote share.
 OLS & DD estimates. 2007 elections.

	OLS				DD			
	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
<i>Corruption (dC=1 if scandal)</i>	-0.021 ^{***} (-2.88)	-0.027 ^{***} (-3.08)	-0.023 ^{***} (-3.22)	-0.028 ^{***} (-3.55)	-0.036 ^{**} (-2.66)	-0.037 ^{**} (-2.44)	-0.037 ^{**} (-2.10)	-0.038 ^{**} (-2.32)
<i>Incumbent vote share in t-1</i>	0.565 ^{***} (12.36)	0.584 ^{***} (13.84)	0.568 ^{***} (16.76)	0.592 ^{***} (17.57)	0.590 ^{**} (11.06)	0.200 ^{**} (12.56)	0.201 ^{***} (2.44)	0.185 ^{***} (2.11)
<i>Incumbent in t-1</i>	---	---	0.029 ^{**} (2.51)	0.028 ^{**} (2.61)	---	---	0.082 ^{**} (4.59)	0.085 ^{**} (4.70)
<i>Coalition</i>	---	---	0.028 ^{***} (3.66)	0.038 ^{***} (5.39)	---	---	0.033 ^{***} (9.48)	0.036 ^{***} (10.18)
<i>Population growth</i>	---	---	0.004 ^{**} (2.50)	0.004 ^{**} (2.34)	---	---	0.001 (1.26)	0.001 (1.37)
<i>Unemployment growth</i>	---	---	-0.011 ^{***} (-3.62)	-0.010 ^{***} (-3.44)	---	---	-0.023 ^{***} (-5.94)	-0.023 ^{***} (-5.68)
R2	0.147	0.178	0.164	0.202	0.112	0.123	0.119	0.148
<i>F-stat. (All variables)</i>	84.00 [0.000]	30.53 [0.000]	33.96 [0.000]	44.76 [0.000]	11.19 [0.000]	8.55 [0.000]	6.39 [0.000]	12.70 [0.000]
<i>F-stat. (Region × Party f.e.)</i>	---	11.52 [0.000]	---	10.33 [0.000]	---	6.28 [0.000]	---	7.72 [0.000]
<i>F-stat. (Additional controls)</i>	---	---	16.05 [0.000]	15.57 [0.000]	---	---	5.33 [0.000]	6.23 [0.000]
<i>Region × Party fixed effects</i>	NO	YES	NO	YES	NO	YES	NO	YES
<i>Additional controls</i>	NO	NO	YES	YES	NO	NO	YES	YES

Notes: (1) Dependent variable is the incumbent's party/parties vote share, in the OLS case, and the increase in the vote share between two consecutive elections in the DD estimation; (2) dC=1 if a corruption scandal involving the incumbent was reported during the 2003-07 term; (3) Control group are non-corrupt municipalities; Number of municipalities in the control group is 4360; Number of municipalities with dC=1 is 241; Number of observations is 4601; (4) *Region × Party effects* are allowed to differ between terms in the DD estimation; (5) t-statistics in parenthesis; p-values in brackets; ***, ** & * = statistically significant at the 99, 95 and 90% levels. (6) Robust standard errors. (7) *F-stat. (All variables)* = test of joint statistical significance of all variables; *F-stat. (Region × Party effects)* = test of statistical significance of the time × party × year dummies; *F-stat. (Additional controls)* = test of statistical significance of control variables included in addition to the incumbent vote share in t-1.

Table 4
Effect of corruption news on incumbents' vote share.
 DD estimates. 2007 elections.

	<i>Number of news reports</i>			<i>Type of newspaper</i>		
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>Corruption</i> (dC=1 if scandal)	-0.028* (-2.12)	-0.030*** (-2.44)	-0.027*** (-2.48)	-0.036*** (-3.00)	-0.038*** (-2.70)	-0.039*** (-2.50)
<i>Corruption News</i>	-0.002* (-2.47)	---	---	---	-0.002* (-1.98)	---
<i>More than 5 News Reports</i>	---	-0.002 (-0.130)	---	---	---	---
<i>More than 10 News Reports</i>	---	-0.071** (-2.20)	-0.061*** (-2.27)	---	---	-0.066*** (-2.88)
<i>More than 20 News Reports</i>	---	-0.010 (-0.34)	---	---	---	---
<i>Local scandal</i>	---	---	---	0.007 (0.45)	---	---
<i>National scandal</i>	---	---	---	-0.001 (0.24)	---	---
<i>Local news</i>	---	---	---	---	0.003*** (3.20)	---
<i>National news</i>	---	---	---	---	0.001 (0.040)	---
<i>More than 2 Local News Reports</i>	---	---	---	---	---	0.054*** (3.18)
<i>More than 5 National News Reports</i>	---	---	---	---	---	0.001 (0.08)
R2	0.154	0.145	0.146	0.147	0.145	0.143
<i>F-stat. (All variables)</i>	14.45 [0.000]	13.70 [0.000]	15.03 [0.000]	12.33 [0.000]	13.42 [0.000]	13.78 [0.000]

Notes: (1) See Table 3. (2) All the estimations include the same controls as in Table 2 column (viii).

Table 5:
Effect of scandals vs. judicial charges on incumbents' vote share.
 DD estimates. Non-corrupt as control group. 2007 elections.

	(i)	(ii)	(iii)	(iv)	(v)
<i>Corruption</i> (dC=1 if scandal)	-0.018 (-1.45)	-0.018* (-1.68)*	-0.014* (-1.93)*	-0.014** (-2.21)**	-0.014* (-1.71)*
<i>Corruption News</i>	--	-0.002 (-1.54)	--	--	--
<i>More than 10 News Reports</i>	--	--	-0.059* (-2.25)*	-0.057* (-2.33)*	-0.028* (-1.75)*
<i>Filed</i>	0.063** (2.28)**	0.062** (2.52)**	0.060** (2.47)**	--	--
<i>Denounced</i>	0.048 (1.22)	0.048 (1.23)	0.048 (1.21)	--	--
<i>Filed or Denounced</i>	--	--	--	0.051* (1.76)*	0.050* (1.82)*
<i>Investigation</i>	-0.022*** (-3.65)***	-0.022*** (-3.43)***	-0.022*** (-3.33)***	--	--
<i>Accusation</i>	-0.071* (-2.11)*	-0.073* (-2.32)*	-0.070* (-2.33)*	--	--
<i>Conviction</i>	-0.057*** (-2.76)***	-0.057*** (-2.78)***	-0.057*** (-2.91)***	--	--
<i>Corruption charges</i>	--	--	--	-0.053** (-2.21)**	-0.018* (-1.99)*
<i>Charges × More than 10 News Reports</i>	--	--	--	--	-0.087** (-2.11)**
R2	0.172	0.172	0.173	0.175	0.170
<i>F-stat. (All variables)</i>	16.22 [0.000]	15.25 [0.000]	15.57 [0.000]	15.22 [0.000]	15.33 [0.000]

Notes: (1) See Table 3. (2) All the estimations include the same controls as in Table 2, column (viii). (3) *Corruption charges* include only those not filed (=investigations+accusations+convictions).

Table 6:
Effect of corruption scandals on incumbents' vote share.
 OLS & DD estimates. Alternative control group. 2007 elections.

	(i)	OLS (ii)	(iii)	(iv)	DD (v)	(vi)
<i>Corruption</i> (dC=1 if scandal)	-0.048 (-1.58)	-0.040* (-1.66)*	-0.040 (-1.06)	-0.054* (-1.75)*	-0.055* (-1.79)*	-0.054** (-2.19)**
<i>Corruption News</i>	--.---	-0.002 (-1.45)	--.---	--.---	-0.004 (-1.32)	--.---
<i>More than 10 News Reports</i>	--.---	--.---	-0.045** (-2.37)**	--.---	--.---	-0.064** (-1.96)**
R2	0.119	0.125	0.134	0.104	0.114	0.125
<i>F-stat. (All variables)</i>	7.10 [0.000]	4.91 [0.000]	6.54 [0.000]	4.56 [0.000]	5.54 [0.000]	5.83 [0.000]

Notes: (1) See Table 2. (2) All the estimations include the same controls as in Table 3, with the exception of the *Region × Party* effects, which were not statistically significant. (3) The control group comprised municipalities with cases of corruption during the 2003-07 term that were reported by the press after the 2007 elections. The number of municipalities in the control group is 101; number of municipalities with dC=1 is 241; number of observations is 342.

Table 7
Effect of corruption scandals on incumbents' votes. OLS & DD estimates. 2003 elections.

	(i)	OLS (ii)	(iii)	(iv)	DD (v)	(vi)
<i>Corruption</i> (dC=1 if scandal)	-0.018** (-2.33)**	-0.010* (-1.66)*	-0.012* (-1.78)*	-0.024** (-1.99)**	-0.014 (-1.29)	-0.018* (-1.73)*
<i>Corruption News</i>	--.---	-0.001** (-2.09)**	--.---	--.---	-0.001** (-2.12)**	--.---
<i>More than 10 News</i>	--.---	--.---	-0.034 (-1.46)	--.---	--.---	-0.056 (-1.27)
R2	0.221	0.234	0.218	0.104	0.101	0.098
<i>F-stat. (All variables)</i>	10.44 [0.000]	9.55 [0.000]	8.33 [0.000]	4.56 [0.000]	2.45 [0.000]	2.90 [0.000]

Notes: (1) See Tables 2.(2) All the estimations include the same controls as in Table 3, column (viii). (3) The control group are the non-corrupt municipalities; (3) The number of municipalities in the control group is 4655; number of municipalities with dC=1 is 212; number of observations is 4732.

2009

- 2009/1. Rork, J.C.; Wagner, G.A.: "Reciprocity and competition: is there a connection?"
- 2009/2. Mork, E.; Sjögren, A.; Svaleryd, H.: "Cheaper child care, more children"
- 2009/3. Rodden, J.: "Federalism and inter-regional redistribution"
- 2009/4. Ruggeri, G.C.: "Regional fiscal flows: measurement tools"
- 2009/5. Wrede, M.: "Agglomeration, tax competition, and fiscal equalization"
- 2009/6. Jametti, M.; von Ungern-Sternberg, T.: "Risk selection in natural disaster insurance"
- 2009/7. Solé-Ollé, A.; Sorribas-Navarro, P.: "The dynamic adjustment of local government budgets: does Spain behave differently?"
- 2009/8. Sanromá, E.; Ramos, R.; Simón, H.: "Immigration wages in the Spanish Labour Market: Does the origin of human capital matter?"
- 2009/9. Mohnen, P.; Lokshin, B.: "What does it take for and R&D incentive policy to be effective?"
- 2009/10. Solé-Ollé, A.; Salinas, P.: "Evaluating the effects of decentralization on educational outcomes in Spain"
- 2009/11. Libman, A.; Feld, L.P.: "Strategic Tax Collection and Fiscal Decentralization: The case of Russia"
- 2009/12. Falck, O.; Fritsch, M.; Heblich, S.: "Bohemians, human capital, and regional economic growth"
- 2009/13. Barrio-Castro, T.; García-Quevedo, J.: "The determinants of university patenting: do incentives matter?"
- 2009/14. Schmidheiny, K.; Brülhart, M.: "On the equivalence of location choice models: conditional logit, nested logit and poisson"
- 2009/15. Itaya, J., Okamura, M., Yamaguchi, C.: "Partial tax coordination in a repeated game setting"
- 2009/16. Ens, P.: "Tax competition and equalization: the impact of voluntary cooperation on the efficiency goal"
- 2009/17. Geys, B., Revelli, F.: "Decentralization, competition and the local tax mix: evidence from Flanders"
- 2009/18. Konrad, K., Kovenock, D.: "Competition for fdi with vintage investment and agglomeration advantages"
- 2009/19. Loretz, S., Moorey, P.: "Corporate tax competition between firms"
- 2009/20. Akai, N., Sato, M.: "Soft budgets and local borrowing regulation in a dynamic decentralized leadership model with saving and free mobility"
- 2009/21. Buzzacchi, L., Turati, G.: "Collective risks in local administrations: can a private insurer be better than a public mutual fund?"
- 2009/22. Jarkko, H.: "Voluntary pension savings: the effects of the finnish tax reform on savers' behaviour"
- 2009/23. Fehr, H.; Kindermann, F.: "Pension funding and individual accounts in economies with life-cyclers and myopes"
- 2009/24. Esteller-Moré, A.; Rizzo, L.: "(Uncontrolled) Aggregate shocks or vertical tax interdependence? Evidence from gasoline and cigarettes"
- 2009/25. Goodspeed, T.; Haughwout, A.: "On the optimal design of disaster insurance in a federation"
- 2009/26. Porto, E.; Revelli, F.: "Central command, local hazard and the race to the top"
- 2009/27. Piolatto, A.: "Plurality versus proportional electoral rule: study of voters' representativeness"
- 2009/28. Roeder, K.: "Optimal taxes and pensions in a society with myopic agents"
- 2009/29. Porcelli, F.: "Effects of fiscal decentralisation and electoral accountability on government efficiency evidence from the Italian health care sector"
- 2009/30. Troumpounis, O.: "Suggesting an alternative electoral proportional system. Blank votes count"
- 2009/31. Mejer, M., Pottelsberghe de la Potterie, B.: "Economic incongruities in the European patent system"
- 2009/32. Solé-Ollé, A.: "Inter-regional redistribution through infrastructure investment: tactical or programmatic?"
- 2009/33. Joanis, M.: "Sharing the blame? Local electoral accountability and centralized school finance in California"
- 2009/34. Parcerro, O.J.: "Optimal country's policy towards multinationals when local regions can choose between firm-specific and non-firm-specific policies"
- 2009/35. Cordero, J.M.; Pedraja, F.; Salinas, J.: "Efficiency measurement in the Spanish cadastral units through DEA"
- 2009/36. Fiva, J.; Natvik, G.J.: "Do re-election probabilities influence public investment?"
- 2009/37. Haupt, A.; Krieger, T.: "The role of mobility in tax and subsidy competition"
- 2009/38. Viladecans-Marsal, E.; Arauzo-Carod, J.M.: "Can a knowledge-based cluster be created? The case of the Barcelona 22@district"

2010

- 2010/1. De Borger, B., Pauwels, W.: "A Nash bargaining solution to models of tax and investment competition: tolls and investment in serial transport corridors"
- 2010/2. Chirinko, R.; Wilson, D.: "Can Lower Tax Rates Be Bought? Business Rent-Seeking And Tax Competition Among U.S. States"
- 2010/3. Esteller-Moré, A.; Rizzo, L.: "Politics or mobility? Evidence from us excise taxation"
- 2010/4. Roehrs, S.; Stadelmann, D.: "Mobility and local income redistribution"

- 2010/5, **Fernández Llera, R.; García Valiñas, M.A.:** "Efficiency and elusion: both sides of public enterprises in Spain"
- 2010/6, **González Alegre, J.:** "Fiscal decentralization and intergovernmental grants: the European regional policy and Spanish autonomous regions"
- 2010/7, **Jametti, M.; Joanis, M.:** "Determinants of fiscal decentralization: political economy aspects"
- 2010/8, **Esteller-Moré, A.; Galmarini, U.; Rizzo, L.:** "Should tax bases overlap in a federation with lobbying?"
- 2010/9, **Cubel, M.:** "Fiscal equalization and political conflict"
- 2010/10, **Di Paolo, A.; Raymond, J.L.; Calero, J.:** "Exploring educational mobility in Europe"
- 2010/11, **Aidt, T.S.; Dutta, J.:** "Fiscal federalism and electoral accountability"
- 2010/12, **Arqué Castells, P.:** "Venture capital and innovation at the firm level"
- 2010/13, **García-Quevedo, J.; Mas-Verdú, F.; Polo-Otero, J.:** "Which firms want PhDs? The effect of the university-industry relationship on the PhD labour market"
- 2010/14, **Calabrese, S.; Epple, D.:** "On the political economy of tax limits"
- 2010/15, **Jofre-Monseny, J.:** "Is agglomeration taxable?"
- 2010/16, **Dragu, T.; Rodden, J.:** "Representation and regional redistribution in federations"
- 2010/17, **Borck, R.; Wimmersky, M.:** "Political economics of higher education finance"
- 2010/18, **Dohse, D.; Walter, S.G.:** "The role of entrepreneurship education and regional context in forming entrepreneurial intentions"
- 2010/19, **Åslund, O.; Edin, P-A.; Fredriksson, P.; Grönqvist, H.:** "Peers, neighborhoods and immigrant student achievement - Evidence from a placement policy"
- 2010/20, **Pelegrín, A.; Bolance, C.:** "International industry migration and firm characteristics: some evidence from the analysis of firm data"
- 2010/21, **Koh, H.; Riedel, N.:** "Do governments tax agglomeration rents?"
- 2010/22, **Curto-Grau, M.; Herranz-Loncán, A.; Solé-Ollé, A.:** "The political economy of infrastructure construction: The Spanish "Parliamentary Roads" (1880-1914)"
- 2010/23, **Bosch, N.; Espasa, M.; Mora, T.:** "Citizens' control and the efficiency of local public services"
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