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XARXA DE REFERÈNCIA EN ECONOMIA APLICADA

Does electoral competition curb party favoritism?

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ABSTRACT:

We study whether incumbents facing uncontested elections channel public spending towards co-partisan officials more than is the case of incumbents that are worried about their chances of re-election. To do so, we draw on data detailing capital transfers allocated by Spanish regions to local governments during the period 1995-2007. Using a regression discontinuity design, we document strong and robust effects. We find that, on average, a mayor belonging to the same party as that of the regional president obtains nearly twice the amount in grants as is received by a mayor belonging to an opposition party. This effect is much greater for regional incumbents that won the previous election by a large margin, but it disappears in the case of highly competitive elections. The effects estimated by difference-in-differences are not so great but they point in the same direction. Overall, the results are consistent with predictions that regional incumbents focus on obtaining the most votes possible when elections are strongly contested, while they seek to increase the number of aligned mayors when their position at the ballot box is not vulnerable.

JEL Codes: C2, D72
Keywords: political parties, intergovernmental transfers, distributive politics, regression discontinuity

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1. Introduction

Political favoritism describes situations in which politicians "allocate [goods and services] disproportionately to population subgroups, variably identifiable by race, ethnicity, or partisanship" (Golden and Min, 2013, p.74). Jointly with corruption, political favoritism constitutes a major political risk of government intervention (Glaeser, 2012). Because of political favoritism, spending allocations deviate from the normative principles that should otherwise guide them, reducing citizen welfare and hampering economic growth[1]. Likewise, party favoritism describes situations in which officials affiliated to the incumbent party are able to attract disproportionate benefits from the public budget. Representatives of the majority party in parliament might obtain more local public goods for their districts, while co-partisan mayors might receive more intergovernmental transfers. In all these cases, "… hierarchical networks of party officials (factions) work to direct local public goods to their constituencies and thereby win votes and advance their careers within the party" (Persico *et al*., 2011, p. 242). In other words, lower-level politicians obtain more resources from a fellow, higher-level party official because they are expected to help her retain office, and they are happy to provide support at election time as they too have expectations of future promotion.

But how can political favoritism be curbed? It is an old assumption that governments are held accountable to the citizens through the electoral process. Citizens select politicians and decide to retain or oust them after a period in office. An incumbent's desire for re-election should ensure that she does not deviate from the constituents' interests and focus on too narrow a segment of the population. However, this only holds true if certain conditions are met. For example, Hodler and Raschky (2014) show that regional favoritism (i.e., the tendency to benefit the political leader's region of birth) is stronger in countries with weak political institutions and low education levels. There is also some evidence that information and political participation help curb ethnic favoritism (see Fujiwara and Wantchekon, 2013). And, more importantly as far as this paper is concerned, several studies suggest that political favoritism flourishes when there are no elections or when elections are uncompetitive. Clear evidence of this is provided by Burgess *et al*. (2015), who show that ethnic favoritism as reflected in expenditure on road building in Kenya was high in autocratic periods, but disappeared in periods with free elections. Similarly, Trounstine (2006) shows that U.S. city mayors facing un-contested elections tend to target core supporters at the expense of the larger community when allocating public spending.

[1] For example, ethnic favoritism has been identified as a major impediment to development in Africa (Easterly and Levine, 1997). Other authors have documented the negative effect of favoritism on aid effectiveness (Dreher *et al.*, 2010) and on stimulus spending (Wright, 1973).

In this paper, we examine the effects of electoral competition on party favoritism when allocating earmarked capital transfers to local governments. We consider this setting to be highly suited to the study of party favoritism and its relation to electoral competition, for several reasons. First, intergovernmental transfers of this kind are especially vulnerable to party favoritism. These transfers provide funds that have to be spent in a very limited range of areas as determined by the grantor. Sometimes, as in the case of the capital transfers studied here, they are assigned to a specific infrastructure project, whose design and budget must be approved prior to execution, thus providing scope for political manipulation. Second, these transfers fund services that are the joint responsibility of two layers of government[2]. This means that voters have to split any political credit for the service or facility financed between two incumbents. When a co-partisan (the opposition) controls local government, a transfer enhances (reduces) the popularity of the mayor while reducing (enhancing) that of the opposition candidate (see e.g., Arulampalam *et al*., 2009). This means that intergovernmental transfers can be used to help co-partisan mayors win competitive races. The higher-tier incumbent is interested in such an outcome since it provides a pool of loyal mayors that can provide support in future electoral races (e.g., mayors can help to win the party nomination or to mobilize the electorate during a campaign) or who can be recruited for higher office. Third, incentives to engage in party favoritism can also depend on how close the higher-level election race is. When the higher-tier incumbent is at risk of losing an immediate election, we can expect her to focus on strategies that are more productive in the short run, such as targeting constituencies with many swing voters[3]. Only when the incumbent feels electorally safe will she implement a long-run strategy of building up a pool of loyal mayors that can provide support in the future, when her political advantage might not be that great.

The goal of this paper, therefore, is to determine whether the amount of party favoritism shown in the allocation of transfers to local governments is not so great when the higher-layer government (i.e., the grantor) faces contested elections[4]. We present a simple theoretical model that predicts this heterogeneous effect. In the model, a higher-level incumbent allocates transfers to local governments aimed at maximizing her probability of staying in power. The incumbent has to decide whether to allocate more

[2] This is the case, for example, of the capital transfers we analyze – local governments design and implement the project and provide part of the funds and regional governments select the projects based on their own policy priorities and provide co-funding for them.

[3] The literature on pork-barrel politics has traditionally focused on other tactics, namely, the targeting of spending to either 'swing' (e.g., Lindbeck and Weibull, 1987, and Dixit and Londregan, 1995) or 'core' supporter districts (e.g., Cox and McCubbins, 1986). The literature is inconclusive as to which tactic is more prevalent (see Golden and Min, 2013, for a review).

[4] Other papers have analyzed the effect of electoral competition on fiscal outcomes (e.g., Besley and Case, 2003, and Besley *et al*., 2010) and on rent seeking (e.g., Svaleryd and Vlachos, 2009).

transfers to co-partisan mayors facing close elections (and, thus, increase the pool of aligned mayors) or to spread the money across all districts in order to maximize her probability of re-election. When higher-level elections are uncompetitive, the incumbent uses her advantage to pursue the first objective[5].

We test the model's predictions using information on capital transfers from regional to local governments in Spain. Several papers to date have documented the fact that party favoritism in the allocation of intergovernmental transfers is quantitatively important. Using U.S. data, Grossman (1994), Larcinese *et al*., (2006) and Berry *et al*. (2010) find some evidence that states and districts aligned with the federal government do receive more funds[6]. Arulampalam *et al*. (2009) quantify this difference as representing 16% in the case of federal-to-regional transfers in India. Diaz-Cayeros *et al*. (2006) find, in the case of Mexico, that under the PRI, the states controlled by this party received up to 40% more transfers than those controlled by the opposition. Similarly, Solé-Ollé and Sorribas-Navarro (2008) and Brollo and Nannicini (2012) examine capital transfers to local governments and report increases of around 30 and 40% for Spain and Brazil, respectively.

However, none of these papers studies the effect of the competitiveness of higher-level elections nor do they provide any evidence as to why a given degree of party favoritism is observed[7]. One reason for this might be that these papers use data for a single high-tier government (usually the federal government during one or a few elections), making it impossible to estimate heterogeneous effects. In this paper, we make use of a newly compiled database on transfers from Spanish regional governments (the so-called Autonomous Communities, ACs from now on) during three terms of office for more than 2,000 Spanish municipalities. Thus, we analyze whether party favoritism depends on certain characteristics presented by the ACs and, in particular, we are able to test the hypothesis that the probability of the regional incumbent losing office does genuinely matter. Spain is particularly well suited to studying this question, given that there is substantial variability in the intensity of electoral competition at the regional level. In some ACs (e.g., Castilla-León), the incumbent party has held power uninterruptedly for many years and by a large margin, so the perceived risk of electoral defeat is low; in others (e.g.,

[5] A similar dynamic trade-off is modelled in Joanis (2011). In that paper the incumbent decides whether to target 'swing' voter districts to win the present election or 'core' voter districts to keep loyal voters motivated.

[6] In the US, alignment between governors and the president has also recently been shown to matter in the assignment of responsibility on economic policy (see Geys and Vermeir, 2014).

[7] Likewise, only a few papers examine the effect of electoral competitiveness on pork barrel politics: Ansolabehere and Snyder (2006) analyze whether the tendency to favor 'core' over 'swing' districts in the U.S. is mediated by state-level electoral competition, but find no evidence of this; and Joanis (2013) looks at the effects of electoral competition on the allocation of revenues for roads in Canada and also finds no effect.

the Balearic Islands) power has changed hands frequently and the winning margins have typically been narrow.

In order to identify the effect of party favoritism, we use a regression discontinuity design (RDD) for close elections, comparing municipalities in which the ideological bloc of the regional incumbent won or lost the previous local election by a narrow margin. The effects estimated in some of the aforementioned papers (employing either OLS or 'difference-in-differences' methods) might be biased due to the omission of time-varying electoral support for the incumbent. Brollo and Nannicini (2012), Migueis (2013) and Bracco *et al.* (2015) improve on this by using a RDD, as is now customary in papers examining the effects of parties on policy outcomes (see, e.g., Lee *et al*., 2004; Pettersson-Lidbom, 2008, and Ferreira and Gyourko, 2009). An important methodological novelty of our paper is that we adapt the RDD to a proportional representation (PR) electoral setting. Employing RDD in a PR system is challenging, but a number of recent studies have clearly established the steps to follow (see Folke, 2014, for the seminal paper, and also Ade and Freier, 2013, Fiva *et al*., 2015, and Fiva and Halse, 2016). We follow these papers and define our treatment, i.e., alignment, as a situation in which the ideological bloc to which the regional president belongs has a majority of seats in the local council. We use a forcing variable based on a calculation of the number of votes that that regional president's bloc must lose (gain) at the local election in order to lose (gain) the majority of seats on the local council. The idea, as in the conventional RDD close-election literature, is that local governments with aligned mayors backed by a coalition that won the marginal seat by a few votes (the last seat required needed to secure the majority) should be similar to unaligned mayors backed by a coalition that lost the marginal seat also by a few votes. One difference with the previous literature on close-election RDDs in PR systems is that we derive an exact algebraic formulation for our forcing variable, instead of relying on simulations. We believe that our procedure works as well as those described previously, with the added advantage that it is both easy to implement and highly intuitive.

What we find is striking. The RDD estimates suggest that Spanish local governments controlled by the same party as the regional government receive on average 92% more funds for earmarked capital transfers than are received by similar municipalities controlled by the opposition. These results represent unequivocal evidence of an extreme degree of party favoritism in the allocation of capital transfers. The alignment effect found means that, on average, municipalities could increase their capital spending by 20%. Obviously, this effect could be much larger for small municipalities with low fiscal capacity that rely more heavily on transfers to fund investment. More importantly, the competitiveness of regional-level elections influences these biases in the allocation of transfers. According to our results, the level of party favoritism for the regions with less competitive elections is

much higher (nearly twice the local average treatment effect), while the treatment effect virtually disappears in the case of the more competitive regional elections. This effect survives many robustness checks and horse races against alternative explanations. Moreover, although a simple 'difference-in-differences' estimator delivers lower average treatment effects, the relative effect of regional electoral competitiveness remains. Therefore, our results provide strong evidence that electoral competition at the regional level mitigates the degree of party favoritism in the allocation of intergovernmental transfers.

The paper is organized as follows. In the next section, we present a simple theoretical model that generates the prediction that party favoritism is greater when regional elections are uncompetitive. Section 3 provides the institutional background to the Spanish case. Section 4 describes the empirical methodology. Section 5 presents the results and the last section concludes.

2. Theoretical framework

In this section, we present a theoretical model that helps us derive our main hypothesis: when the regional incumbent perceives a higher probability of losing office (i.e. electoral competition is high), the degree of party favoritism in the allocation of transfers is lower. The reason our model makes this prediction is that, when allocating transfers across local municipalities, the regional incumbent faces a tradeoff between trying to win the current regional-level election and maximizing the number of aligned mayors. To maximize her probability of winning the regional election, the incumbent must spread transfers across all municipalities, while to maximize the number of mayors she must concentrate on those with a narrow majority, favoring co-partisan mayors and undermining those of the opposition. When regional elections are highly competitive, the regional incumbent tends to allocate transfers without discrimination, with the aim of maximizing her vote. However, when the regional incumbent feels safe, she can forget about having to win more aggregate votes and can focus on seeking to switch the outcome in those municipalities where the opposition have a narrow majority.

Model layout. The model comprises two tiers of government: regional and local. We assume there is one regional government and N local governments. Voters at separate regional and local elections select the party to rule at each tier by choosing between two candidates[8]. At both contests, voters decide whether to reelect the incumbent (i.e., the regional president or the mayor, depending on the election) or to replace her with the challenger. In making such decisions, voters take into account the utility derived from

[8] We treat these elections as being concurrent (i.e., both elections are held on the same day), since this is how they are scheduled in most Spanish regions.

transfers allocated from the regional to the local government. Per capita transfers to local government *i* are denoted by τ_i, the voter's utility function $u(\tau_i)$ is assumed to be concave (i.e., $u' > 0$ & $u'' < 0$) and the marginal utility is assumed to be linear (i.e., $u''' = 0$).

Voters split the credit from transfer-related utility between the regional and the local incumbent in proportions $(1-\theta)$ and θ, respectively (see Arulampalam *et al*., 2009), with $0 \leq \theta \leq 1$. The vote for the regional incumbent's party at these two elections in municipality *i* can be expressed as follows:

$$v_i^{r,1} = \rho^r v_i^{r,0} + (1-\theta)u(\tau_i) + \varepsilon_i^r \quad (1a)$$

$$v_i^{\ell,1} = \rho^\ell v_i^{\ell,0} + \theta(2a_i - 1)u(\tau_i) + \varepsilon_i^\ell \quad (1b)$$

where $v_i^{r,1}$ and $v_i^{r,0}$ are the vote margin (i.e., the vote share minus ½) obtained by the regional incumbent's party in municipality *i* at the regional elections (denoted by *r*) held in periods 1 (the next election) and 0 (the previous election); and $v_i^{\ell,1}$ and $v_i^{\ell,0}$are the vote margin obtained by the regional incumbent's party in municipality *i* at the local elections (denoted by ℓ) held also in periods 1 and 0. The coefficients ρ^r and ρ^ℓ measure the degree of persistence of vote decisions. The terms ε_i^r and ε_i^ℓ are random popularity shocks at the regional and local elections, respectively, distributed $N(0, \sigma_r)$ and $N(0, \sigma_\ell)$, which are assumed to be independent of each other.

The term $(1-\theta)u(\tau_i)$ in equation (1a) captures the effect of transfers on the vote for the regional incumbent at the regional elections: voters are willing to reward the regional incumbent in exchange for the utility derived from the transfers she allocated to the municipality, in proportion to the responsibility for the quality of the service attributed to the regional government, measured by $(1-\theta)$. The term $\theta(2a_i - 1)u(\tau_i)$ in equation (1b) captures the effect of transfers on the vote for the candidate of the regional incumbent at the local elections. Note that now the transfer-derived utility is multiplied by the term $\theta(2a_i - 1)$, which depends on the proportion of responsibility attributed to the local government, θ, but also on whether the local and the regional incumbent belong to the same (i.e., $a_i = 1$) or different parties (i.e., $a_i = 0$). For a mayor belonging to the regional incumbent's party, the effect of transfers on the vote at local elections is $\theta u(\tau_i)$, where's when the mayor belongs to the regional opposition party the effect of transfers is $-\theta u(\tau_i)$. For the regional incumbent, assigning transfers to a local government controlled by the opposition will harm the vote record of the opposition candidate at the local elections[9].

We consider that a regional incumbent might pursue two goals. First, she might seek to maximize the probability of winning the current regional election. Second, she might want to maximize the number of aligned mayors, with the purpose of building political

[9] In the next section, we present anecdotal evidence suggesting that these credit spillovers are a ubiquitous feature of intergovernmental transfers in Spain.

capital and increasing the chances of winning future regional elections. An objective function combining these two goals can be expressed as:

$$\underset{\tau_i}{\text{Max}}\Big\{\text{Prob}\big(\textstyle\sum_i \rho^r v_i^{r,0} + (1-\theta)u(\tau_i) > \varepsilon_i^r\big) + \\ +\eta \textstyle\sum_i \text{Prob}\big(\rho^\ell v_i^{\ell,0} + \theta(2a_i - 1)u(\tau_i) > \varepsilon_i^\ell\big) - c(\textstyle\sum_i \tau_i) \qquad (2)$$

The first part of this expression is the probability of wining the current regional election, which depends on the summation of votes across municipalities. The second part is the number of mayors belonging to the regional incumbent's party, which depends on the summation of the probabilities of winning each local election. The parameter η is a coefficient that depends both on the amount of political capital provided by a mayor (i.e., how crucial it is to have the mayors' support during future regional-level campaigns) and on a discount factor (i.e., how important are future vs. current regional elections for the incumbent). The term $c(\sum_i \tau_i)$ is a convex function (i.e., $c' > 0$ and $c'' > 0$) that accounts for the opportunity costs of resources, and the marginal cost is assumed to be linear (i.e., $c''' = 0$).

We can express the probability expressions in (2) as:

$$\text{Prob}\big(\textstyle\sum_i v_i^{r,1} > 0\big) = \Phi\left(\frac{\bar{v}^{r,0} + (1-\theta)\sum_i u(\tau_i)}{\sqrt{N}}\right) = \Phi^r \qquad (3a)$$

$$\textstyle\sum_i \text{Prob}\big(v_i^{\ell,1} > 0\big) = \sum_i \Phi\big(v_i^{\ell,0} + \theta(2a_i - 1)u(\tau_i)\big) = \sum_i \Phi_i^\ell \qquad (3b)$$

where, to simplify the notation, we set ρ^r=ρ^ℓ=1 and $\sigma_r = \sigma_\ell = 1$, and where Φ^r is the cumulative distribution function of $\sum_i \varepsilon_i^r$, which, by the convolution formula, is distributed as $\text{N}(0, \sqrt{N}\sigma_r)$, and Φ_i^ℓ is the cumulative distribution function of ε_i^ℓ. Note that Φ^r depends on the average margin of victory at the regional elections ($\bar{v}^{r,0}$), while Φ_i^ℓ does not. Note also that while Φ^r is the same across localities, Φ_i^ℓ depends on the previous margin of victory in municipality *i* ($v_i^{\ell,0}$) and on the alignment status of the mayor (a_i).

Results. Plugging (3a) and (3b) into (2) and maximizing with respect to τ_i we obtain the following first-order condition:

$$\Gamma = \big(\mu(1-\theta)\phi^r + \eta\theta(2a_i - 1)\phi_i^\ell\big)u'(\tau_i) - c'(\tau_i) = 0 \qquad \forall i \qquad (4)$$

where $\mu = 1/\sqrt{N}$ and $\phi = \Phi'$ is the density function of the standard normal distribution. This condition says that the net marginal benefit of allocating transfers should be the same across localities[10]. The following results can be derived:

[10] To ensure that this is a maximum, we need to assume that the incentives arising from local elections are not too great relative to those arising from regional elections. This ensures that the second-order condition is always negative (i.e., both for aligned and unaligned municipalities).

PROPOSITION 1: *Party favoritism at close local elections: provided credit spillovers exist* ($\theta>0$) *and mayors' political capital is valuable* ($\eta>0$)*, in close local elections* (*i.e., when* $v_i^{\ell,0}=0$) *aligned mayors will receive more transfers than unaligned mayors*:

$$\tau_a - \tau_u \big|_{v_i^{\ell,0}=0} > 0 \qquad (5)$$

where *a* stands for aligned and *u* for unaligned. To understand why this is the case note from (4) that ϕ_i^{ℓ} is multiplied by $\eta\theta$ and $-\eta\theta$ in the aligned and unaligned cases, respectively, thus creating a wedge between the marginal benefits of transfers to these two types of municipality (see the proof in the Appendix). This result was previously reported in Brollo and Nannicini (2012), albeit with a slightly different specification[11].

PROPOSITION 2: *Regional-level electoral competition and party favoritism: the lower the degree of regional-level electoral competition* (*i.e., the larger the previous margin of victory,* $\bar{v}^{r,0}$), *the higher the degree of party favoritism at close local elections*:

$$\frac{\partial\left(\tau_a - \tau_u \big|_{v_i^{\ell,0}=0}\right)}{\partial \bar{v}^{r,0}} > 0 \qquad (6)$$

This occurs because the first part of the marginal benefit formula (i.e., the terms between brackets in expression (4)) gains importance as $\bar{v}^{r,0}$ decreases and ϕ^r rises. Intuitively, as $\bar{v}^{r,0}$ decreases the regional incumbent becomes more focused on winning the regional election and less focused on winning a greater number of local elections. Because of this, transfers are spread out to all municipalities, independently of the party to which the mayor belongs[12]. This result is new to this paper and provides the main empirical prediction we aim to test.

Hypotheses. The model predicts that, when regional elections are not too competitive, the regional incumbent will allocate more transfers to aligned than to un-aligned mayors that won the local elections by a narrow margin. The model also predicts that the lower the level of electoral competition at the regional level, the greater the difference in the amount of transfers allocated to aligned vs. unaligned mayors that won the local elections by a narrow margin.

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[11] The model also predicts that the alignment effect vanishes as local elections become uncompetitive, that is, as $v_i^{\ell,0}$ goes to 1 or -1 (the proof is available upon request). So, this particular model predicts that the effect of alignment at close elections is greater than the effect of alignment averaged across all elections.

[12] Technically, as $\bar{v}^{s,0}$ decreases, the marginal benefit curves of both aligned and unaligned mayors become steeper, making the use of transfers more interesting for the incumbent. However, for a given transfer level, the difference in the marginal benefit of allocating transfers to these two types of city becomes smaller, making discrimination between mayors belonging to the same party and opposition mayors less appealing too. See the formal proof in the Appendix.

The fact that these predictions are conditional on local elections being close has implications in terms of identification. This is actually what justifies the use of a regression discontinuity design for estimating the size of the jump in transfers at the threshold (i.e., when $v_i^{\ell,0} = 0$). The advantage of the RDD is that it provides an estimate that can be quite credibly interpreted as causal. Note, however, that the RDD only identifies the effect of alignment at close elections (i.e., the local average treatment effect or LATE). However, the model also predicts differences in transfers between aligned and unaligned governments far from the threshold. This means that according to the model, the average treatment effect (ATE) should be lower than the LATE. In order to assess whether this is actually the case, we also provide 'difference-in-differences' estimates for the ATE. Of course, since it is more difficult to interpret the DiD estimates as causal, we subject these results to additional reliability tests, and even then we are cautious in the interpretations we make. Note, however, that the simplicity of the DiD specification compared to the complexity of the RDD makes these results potentially useful as an additional check.

3. Institutional context

3.1 Local government finances

The Spanish government comprises three layers: central, regional, and local. There are seventeen regional governments, the so-called Autonomous Communities (ACs), which have fairly wide-ranging spending responsibilities including, for example, the provision of health care, education, welfare and infrastructures. Spain's local layer consists of over eight thousand municipalities, most of which are relatively small. These municipalities are multipurpose governments, with major expenditure categories corresponding to the traditional responsibilities assigned to the local public sector (environmental services, urban planning, public transport, welfare, etc.). Current spending is financed out of the municipalities' own revenues (two thirds) and unconditional grants (one third). The latter are allocated according to a formula, which hinders their use for pork-barrel politics. However, the funding of capital spending is heavily dependent on grants, which in 2008 represented 38% of local investment. Capital spending represents 21% of total spending and, thus, capital transfers represent 8% (=21% × 0.38) of total nonfinancial revenues.

Capital grants to municipalities are transferred primarily from the regional layer of government (54%)[13]. There are two rationales for these grants. The first is the over-lapping of responsibilities between regional and local governments – regions use transfers to advance their policy objectives while not having to worry about the problems of implementation. The second is the ability to assist needy local governments – small governments have difficulties in generating enough savings from the current account to

[13] 19% comes from the county and the rest from the central government (12%) or the EU.

fund major investment projects, moreover financially distressed governments also have difficulties in accessing credit. These transfers take the form of 'project grants': an open call is made at regular intervals and a municipality can apply by submitting its infrastructure projects (e.g., street and road paving, sewage systems and water pipes, parks and recreations, education and sports facilities, etc.). These are evaluated according to previously established criteria (typically published in the call), which are subject to the interpretation of the grantor. Provisions are usually made for funding emergency situations or projects considered a priority concern by the regional government. The call often does not specify clearly the weight attached to each of the criteria or it fails to specify the link between the score assigned to each criterion and an objective variable, leaving this very much at the discretion of the grantor (see Solé-Ollé, 2012, for additional discussion on this point).

There is anecdotal evidence that the allocation of these regional transfers has been subject to political manipulation in Spain. The following Internet posts are illustrative of partisanship in transfer allocation in two different regions:

> "*The government of Valencia allocates all transfers on the basis of partisanship instead of adhering to objective criteria, never in accordance with the needs of the municipalities* (…) *year after year there is discrimination against citizens living in towns not governed by the ruling party.*" (www.vilaweb.cat, 07/05/2002)

> "*The other problem* [*with transfers*] *is the 'old-boy network' and the 'partisanship' of grantors. (…) Having a* '*friend in the right place*' *and being a* '*member of the party*' *weigh much more heavily than they should in the awarding of transfers*." (http://blocs.mesvilaweb.cat/sbaulida, 02/13/2007)

There is also some evidence that the different agents involved do care about who receives the credit for the facilities built with these transfers. For instance, in 2009, when the Spanish socialist government, as part of a stimulus package, decided to allocate capital transfers to municipalities on a per capita basis, many socialists in opposition at the local layer complained about how this would harm their electoral prospects at the next municipal elections. Similarly, central government sought to obtain the political credit for these stimulus transfers by ordering the installation of huge billboards on the public work sites stating clearly that central government was responsible for the program. There is even some anecdotal evidence that some opposition mayors removed these billboards to avoid any loss of credit[14]. All this evidence supports the credit-claiming mechanism, which

[14]"Coloca vallas que algo queda" (*Put up billboards: there's credit still to be won*), *Las Províncias* 18/06/2009. The newspaper reported that "The conflict over investments has led the central government and the local council of Castellón to erect two different billboards, both claiming responsibility for the same action".

explains why the regional incumbent is interested in discriminating in favor of aligned mayors.

3.2 Regional and local politics in Spain

Regional politics. Elections to the regional parliament are held every four years. Voters choose between several party lists, and the electoral system is based on the d'Hondt rule with a threshold. Representatives elect the regional president by simple majority and she, in turn, decides the composition of the Cabinet. Around a third of the incumbents sit in minority or coalition governments. Coalitions tend to be formed along ideological lines, albeit with a few exceptions. There are three national parties that run in all regions: the PSOE (the main party on the left), the PP (the only national party on the right) and IU (the former communists). There are also many regionally based parties, some on the left and some on the right. Some of these parties never cross ideological bloc lines, while others are able to reach agreements with both left- and right-wing parties. In any case, the vast majority of regional presidents belong to the PSOE and the PP (36 and 51%, respectively, in our sample). Regionalist parties held the regional presidency in the rest of the cases (13%). We take these characteristics into account in our analysis.

Regional elections are held on the same day as are local elections in thirteen out of the seventeen regions. In the remaining regions (i.e., Galicia, Catalonia, the Basque Country, and Andalusia), elections are held between at the midpoint between two consecutive local elections. It is unclear how the existence of these two systems of timing affects the plausibility of our main hypothesis. Since we are not interested in the effect of each type of electoral timing *per se*, what we do in the robustness tests of the empirical analysis is to show that the results do not depend on the specific configuration of the timing of elections.

Important to our study is the fact that many regional elections are not very competitive. As we show in detail below, differences in vote/seat shares between the ruling party/coalition and the opposition and/or between the first and second party might be great, and the political turnover very low. Consider, for example, the case of Andalusia, a traditional stronghold of the PSOE, where accusations of favoritism in the allocation of public spending are common (see e.g., Curto-Grau, 2017). In this region, the seat advantage of the PSOE (the main Spanish left-wing party) over the PP (the main Spanish right-wing party) reached 22% in the 2000s, and the PSOE has won all regional elections since the arrival of democracy. Take also the case of the Canary Islands, where the coalition between a regionalist party (CC, Coalición Canaria) and the PP reached a seat advantage over the PSOE of 38%. Of course, there are also many cases of highly competitive elections (see Table A.7 in the Appendix).

Local politics. Local elections are held every four years on the same day throughout all the Spanish municipalities. Voters choose between several closed party lists. The electoral system is a proportional one, votes being allocated to seats using the d'Hondt rule with a threshold (see section 4.4 for a more detailed explanation of how this works). The mayor is subsequently elected by a simple majority in the council (see Colomer, 1995). The council operates as a small representative democracy, and has to reach a majority vote to pass the initiatives and regulations proposed by the mayor, who acts as the agenda-setter. Mouritzen and Svara (2002) classify Spanish mayors as 'strong mayors', meaning "the elected mayor is in control of the majority of the city council and in full charge of all executive functions". Moreover, the discipline enforced by Spain's political parties means that the chances of amending the mayor's proposals are low when the mayor's party or coalition controls a majority of the seats. The fairly large proportion of minority or coalition governments is undeniable (around one third during the terms analyzed here), although most of these coalitions are formed along ideological lines. There are, of course, some exceptions to this rule. For instance, when a regionalist party crosses the ideological border and supports a regional president of a different ideology this generates some pressure on their local co-partisans to do the same and to support the candidate for mayor belonging to the president's party. In the empirical analysis, we proceed by assuming that coalitions are formed along ideological lines, but we classify the regionalist parties in the ideological bloc of the regional president if they support her in the regional Parliament. Moreover, the platforms of the few local parties tend to be based solely on local issues so they are under less pressure to reach an agreement on ideological grounds or because of pressure from higher party ranks. We show that the results are robust to different ways of dealing with these parties. Note in any case that these two problems are of no quantitative relevance. As in the case of regional governments, most mayors belong to the PSOE or the PP (48.5 and 37.5%, respectively, in our sample). Regionalist parties only held 10.6% of mayoralties and this figure is much lower for regionalist parties crossing ideological lines (1.6%). The percentage of local parties holding the mayoralty is also low (3.4%).

4. Empirical design

4.1. RDD and PR systems

Studies adopting observational approaches to estimate the effect of party ideology on votes and policy outcomes may suffer from an omitted variables problem: party control can be correlated with an incumbent's popularity and this, in turn, might impact on the outcome variable. To deal with this problem some papers have recently adopted the 'close-race' regression discontinuity design (RDD) framework (see Lee, 2008; Lee *et al*., 2004; Pettersson-Lidbom, 2008; Ferreira and Gyourko, 2009; Folke, 2014, and Gerber and

Hopkins, 2011). The reasoning underpinning this method is that elections won by a narrow margin are, in practice, very similar events to elections lost by a similarly narrow margin.

The fact that local councils are elected in Spain using party-list proportional representation (PR) precludes the use of a traditional RDD. In PR systems voters can vote for one of many party lists and these votes are transformed into seats in the local council using a specific conversion method (i.e., the Sainte-Lägue method in Sweden or Norway or the d'Hondt method in Spain). Representatives on the city council then elect the mayor, who in turn elects the members of the executive. The first challenge posed by such an institutional setting is that sometimes no single party holds a majority of seats in the council, which means that the mayor has to be supported by a coalition of parties. The second challenge concerns the difficulties in identifying the vote threshold at which an additional vote switches a seat from one party to another (and, thus, from the coalition supporting the mayor to the opposition). Here, we follow the solution proposed by recent studies that have adapted the RD methodology to a PR system (see Folke, 2014; Ade and Freier, 2013; Fiva *et al*., 2015; and Fiva and Halse, 2016).

First, although in around a third of Spanish local governments the mayor's party does not hold a majority of seats on the council, ideology is a very powerful driver of the formation of the coalition of parties that support the mayor. This allows us to define our treatment as a situation in which the ideological bloc of the party of the regional president has a majority of seats on the local council. So, when parties on the left of the ideological spectrum have a majority of seats, it is highly likely that the mayor will also to the left-wing party bloc; if the regional president belongs to a left-wing (right-wing) party then we can say that the mayor and the president are aligned (unaligned). The same applies when right-wing parties hold a majority of seats. This is exactly the procedure used in Fiva *et al*. (2015), and Fiva and Halse (2016). However, the fact that a small proportion of regional and local parties are able to support both right- and left-wing parties means that the ideological factor will not always work. In the case of regional parties, we classify them as belonging to the ideological bloc of the president, if they support that party in the regional parliament. The evidence that regional coalitions tend to reproduce at the local level justifies this procedure. In any case, we use a 'fuzzy' RDD as in Fiva and Halse (2016) to take into account the fact that ideology does not predict with any certainty the alignment status (see also Van der Klauw, 2002, and Lee and Lemieux, 2010).

Second, even if the treatment in terms of the discontinuity of seats is relatively straightforward to define, elections won or lost by a difference of one seat are probably not that close in terms of the number of votes. In small municipalities, in particular, a high percentage of votes is needed to win one more seat. Thus, using the number or the percentage of seats as our forcing variable might not be appropriate (see Fiva *et al*., 2015,

for a discussion of this point). Instead, we use a forcing variable computed as the percentage of votes that the ideological bloc of the regional president must lose (win) in order to lose (win) the majority of seats in the council. We first have to identify the last seat that was won by the majority bloc. Then, we have to compute how many votes the parties in that bloc would have to lose for that seat to be transferred to a party in the opposition bloc. This computation is far from straightforward because whether a seat is allocated to one party or to another depends on the vote shares of all the votes cast at the same time (see Fiva, 2014, and Fiva *et al*., 2015). The way the literature has overcome this problem is by subjecting the whole distribution of votes among parties to a series of small perturbations, simulating the effects on the distribution of seats, and defining uncompetitive elections as those in which the seat majority rarely changes (see Folke, 2014). In this paper, we use a procedure with similar properties, but one that is based on the exact calculation of the number of votes that have to be subtracted from the mayor's ideological bloc for that bloc to lose its majority in the council. Our calculations are based on certain assumptions that we consider reasonable in the Spanish case. We show that the results are robust to modifications in these assumptions. We explain in detail how this procedure works in the following section and in the Appendix (see Tables A.3 and A.4).

4.2. Equation specification

The first step in our RDD analysis involves testing for a discontinuity of transfers at the threshold. To do so, we use the following two-equation model:

$$\tau_{it} = \alpha a_{it} + g(v_{it}^0) + \varepsilon_{it} \quad (7)$$

$$a_{it} = \gamma d_{it} + h(v_{it}^0) + \epsilon_{it} \quad (8)$$

where τ_{it} are the per capita capital transfers received by the local government before local elections and $a_{it} = 1$ if there is alignment between the regional and the local government and 0 otherwise. The variable v_{it}^0 is the percentage of votes in the previous local elections that the parties in the regional president's ideological bloc would have to lose (if they hold the mayoralty) or win (if they are in opposition at the local level) to lose (win) a majority of seats in the local council and so lose (win) control of the government. This variable is computed using a specific algebraic method developed herein. Henceforth, we refer to this variable as the *Regional incumbent's bloc vote margin.* With $d_{it} = 1$ we denote a situation where this vote margin is positive (i.e., $d_{it} = 1$ if $v_{it}^0 > 0$, and 0 otherwise). The terms $g(v_{it}^0)$ and $h(v_{it}^0)$ are polynomials in v_{it}^0, fitted separately at either side of the threshold (see Lee *et al*., 2004; Lee, 2008; and Lee and Lemieux, 2010). Equation (7) is used to estimate the effect of alignment on transfers. Equation (8) is the first stage and estimates the discontinuity in alignment that we use for identification.

We estimate (7) by 2SLS, using d_{it} as an instrument for a_{it}. The estimates obtained can be interpreted as a weighted LATE, where the weights reflect the ex-ante likelihood of being near the threshold (see Lee and Lemieux, 2010). To obtain valid estimates of equation (7), all factors – besides alignment – that could potentially influence the level of transfers have to be continuous at the threshold. In the next section, we discuss these factors and provide evidence for their continuity at the threshold.

The specification in (7) can easily be modified to analyze the heterogeneous effects of interest. In particular, following Becker *et al*. (2013), we estimate a HLATE by interacting the treatment with a demeaned variable $z_{rt} = (v_{rt} - \bar{v})$, where v_{rt} and $\bar{v}$ measure the degree of electoral competition in region r at t and on average, respectively. We estimate the following equation to obtain the HLATE:

$$\tau_{it} = \eta_1 a_{it} + \eta_2 a_{it} z_{rt} + l(v_{it}^0, z_{rt}) + \varsigma_{it} \qquad (9)$$

where the term $l(v_{it}^0, z_{rt})$ is an interaction between the polynomials in v_{it}^0 and z_{rt}[15]. Again, the coefficients η_1 and η_2 are estimated using 2SLS. The coefficient η_1 provides the estimate of the party favoritism effect when the level of electoral competition at the regional level is equal to the sample mean. The partisan alignment effect, conditional on the level of regional electoral competition, is computed as $\eta_1 + \eta_2 z_{rt}$. In the next section, we explain the additional assumptions needed to identify these effects.

As explained above, we also report the DiD results, given that they may provide information about average treatment effects and can, in any case, be used as a background check. The DiD equations can be expressed as follows:

$$\tau_{it} = \beta a_{it} + f_i + f_{rt} + u_{it} \qquad (10a)$$

$$\tau_{it} = \varrho_1 a_{it} + \varrho_2 a_{it} z_{st} + f_i + f_{rt} + \omega_{it} \qquad (10b)$$

where f_i and f_{rt} are municipality and region × period fixed effects. In the next section we also discuss how to interpret the DiD results.

4.3. Econometrics

RDD assumptions. The validity of the RDD rests on certain assumptions that have to be tested. First, we document that there is a genuine discontinuity in the probability of

[15] The specification could have been either more flexible or simpler. On the one hand, a more flexible specification would have included higher order terms on the interacted variable. We have checked this possibility. It turns out, however, that higher order polynomials in z_{st} do not improve the model's goodness of fit. On the other hand, we could have introduced z_{st} (or a polynomial in z_{st}) additively (i.e., without interacting its terms with those of the polynomial in v_{it}^0); the fit of the model improves substantially when we allow the polynomial in v_{it}^0 to vary with regional-level electoral competition. See Becker *et al*. (2013) for discussion.

treatment. We show graphically that this is the case. In our case, the jump in the probability of treatment is lower than one, and this justifies the use of a 'fuzzy' design. Second, we show that the forcing variable used is continuous around the threshold by inspecting the histogram and using the formal test proposed by McCrary (2008). The continuity test provides a means for discarding the manipulation of the forcing variable. For this same purpose, we also test for the continuity of pre-determined covariates. These tests also provide reassurance that the computation of our forcing variable is meaningful. As we are able to show, treated and control samples are balanced once we control for the number of votes needed for that last seat to switch party blocs, and independently of the assumptions used to compute this variable.

Third, in order for the RDD estimates of the heterogeneous effects to be valid, two additional assumptions need to be fulfilled (see Becker *et al.*, 2013). The first is that the source of heterogeneity (z_{st}) also has to be continuous at the threshold[16]. This assumption is important for the HLATE to pick up genuine variation in the interacted variable. We check this assumption by plotting a graph for our measure of regional-level electoral competition to determine whether this variable is discontinuous about the forcing variable at the threshold or not. The second assumption is that, conditional on the forcing variable, the assignment of the interaction variable has to be random, which means that conditional on the polynomial of the vote margin at the local elections, municipalities in regions with high and low regional electoral competition should not differ in unobserved factors that may influence the allocation of transfers. To ensure that our results are not driven by the omission of confounding factors of this type, we add to our RDD specification a set of region× period fixed effects and interactions between alignment and variables that might, at the same time, reasonably be thought to influence the allocation of transfers across municipalities and which are correlated with electoral competition at the regional level. For example, we include interactions of alignment with the financial situation at the regional level (i.e., tax revenues, debt level, spending needs and responsibilities), and with variables that measure other possible regional-wide political influences over the allocation of transfers. We also show that these additional interaction variables are continuous at the threshold.

For the DiD results to be valid, aligned and unaligned municipalities need to adhrere to parallel trends before the treatment. Given the low number of cross-sections available to us, to check for this we run a placebo test, introducing a lead of alignment in the equation (which means that we lose the last cross-section). For our DiD estimates to be valid, we should find that alignment in the future does not affect partisan favoritism in the present,

[16] The continuity of the interacted variable is the assumption ensuring the LATE is estimated consistently, provided that the variable is demeaned (see Cattaneo *et al.* (2016).

and also that the effect of contemporaneous alignment remains once we control for future alignment. We also run a regression with a lag of alignment (which means that we lose the first cross-section). The idea is that for the whole story to make sense the contemporaneous effect of alignment should also remain statistically significant once we introduce a lag. Finding otherwise would mean that alignment only has an effect after the election, which does not make much sense if incumbents use transfers with the aim of buying votes.

Estimation and inference. First, our main RDD estimation method uses all the observations while controlling for a flexible polynomial in v_{it}^0. Following Lee and Lemieux (2010), we explicitly test for the optimal order of the polynomial with the Akaike information criteria. This procedure allows us to retain the entire sample when estimating the heterogeneous effects. A possible drawback of this method is that our results might be sensitive to outcome values for observations far away from the threshold (see Imbens and Lemieux, 2008). As we show, we need not be greatly concerned by this, since the coefficients are fairly stable in our case and the optimal polynomial ends up being of the order of two. In any case, we also estimate the discontinuity by means of a local linear regression, using the optimal bandwidth (computed as per Calonico *et al.*, 2014). Second, in the estimation of the HLATE we use the optimal polynomial in v_{it}^0 for the whole sample and try different specifications for z_{st}. Third, standard errors are clustered at the municipality level whenever the LATE are computed and at the regional level when we estimate the HLATE[17]. To account for the fact that we have a relatively small number of clusters, we apply finite sample corrections to standard errors and tests (see Angrist and Pischke, 2009)[18].

4.4 Sample and data.

Sample. We estimate the effects of partisan alignment between local and regional governments on transfers from the regional to the local level using data for Spanish municipalities and regions (i.e., Autonomous Communities, ACs). We use three cross-sections of data, for the terms 1996-1999, 2000-03 and 2004-07, with around 2,000 municipalities in each. The outcomes of the 1995 election affect transfers in 1996-1999; the

[17] When estimating the LATE, we cluster standard errors at the municipality level because political preferences are quite persistent over time within municipalities. However, it might also be thought that capital transfers are set at the regional level and so it is plausible that there is some sort of correlation between the amounts received by a region's municipalities. However, clustering at the regional level does not increase the standard errors at all in the estimation of the LATE. When estimating the HLATE, clustering at the regional level is required because the interacted variables are measured at this level. In this case, the standard errors of the interacted terms do increase substantially when we cluster at the regional level.

[18] We also computed wild-bootstrap standard errors (Cameron and Miller, 2015). The results are not shown here but the p-values were just slightly lower than the ones we report.

1999 election influences the 2000-03 period; and the 2003 election has an impact on the transfers allocated during 2004-07. The sample is determined by data on transfers taken from a survey on budget outlays conducted yearly by the Spanish Ministry of Economics. This database includes all municipalities with more than 5,000 residents and a representative sample of the rest[19].

Transfers. The results reported show the estimates of alignment effects on capital transfers from regional to local governments in the two years preceding the next local election. As explained in section three, given the characteristics of these transfers, we expect them to matter more in the period running up to local elections. Further, the two-year aggregation helps to reduce the volatility of the variable and the use of yearly information does not provide any statistical advantage, since the alignment status does not change between years within these two-year periods. As explained above, we focus on capital grants originating from the regional government because of the greater discretion applied in their allocation.

Alignment. The alignment concept used throughout this study can be defined as a dummy equal to one when the mayor and the regional president belong to the same party (*Mayor-President alignment*). We consider that it is in such cases that the incentive to avoid losing credit for the transfers allocated is strongest. In robustness checks, we have also sought to verify whether the results are affected by the use of more comprehensive alignment definitions: that is, situations in which the mayor and/or the main partner of a coalition belong to the same party (*Partner alignment*), and situations in which the mayor and the regional president belong to the same ideological bloc (*Bloc alignment*)[20]. See Table A.1 in the Appendix for the sources of these variables.

Forcing variable. The forcing variable is the *Regional incumbent's bloc vote margin*, computed as the votes needed for the ideological bloc of the regional incumbent to win (lose) the majority of seats on the local council, expressed as a percentage of total votes cast at the local elections. To define the ideological blocs, we classify all parties standing at local elections in three groups: *left*, *right* and *local parties*. Most parties are classified as either left or right, based on party statements and knowledge of their recent experience of coalition

[19] Due to data accessibility problems, the analysis is restricted to fifteen regions, excluding the Basque Country and Navarra. These are small regions and their exclusion should not represent a problem. Moreover, data availability also restricts the sample to municipalities with more than 1,000 residents.

[20] Note that when examining the effect of *Mayor-President alignment*, municipalities with other types of alignment are excluded from the sample. Thus, the control group is basically formed by local governments ruled by a party from the regional opposition (either in majority or in coalition). A similar logic applies when examining other types of alignment. We consider these definitions of the treatment and controls as being the ones that make most sense in terms of credit claiming incentives.

formation. There are a few small regional parties for which classification is difficult, particularly as their decisions sometimes run counter to formal statements of their ideology[21]. What we have opted to do is to classify these parties as left-wing (right-wing) if they currently supporting a left-wing (right-wing) regional president at the moment and according to their ideology if not. Local parties are also difficult to classify. Some are classified as right- or left-wing parties on the basis of their party name. This is especially true in the case of left-wing parties, whose names often contain explicit labels (e.g., 'communist' or 'green') of their ideology. The local parties whose ideology cannot be clearly identified are initially classified as right-wing, although we also test the robustness of the results when they are treated as left-wing parties. As an additional robustness check, we also provide results after excluding from the analysis those municipalities with some representation in the local council of regional parties or *local parties* that are difficult to classify. The results obtained do not depend on the inclusion or exclusion of these very small parties from the analysis[22].

Instead of relying on simulations as in Folke (2014), Fiva et al. (2015), and Fiva and Halse (2016), we develop an exact algebraic formulation of the forcing variable based on the workings of the d'Hondt method, which is used to translate votes into seats in Spanish local elections. For readers unfamiliar with it, the d'Hondt method works as follows. For each party obtaining more than 5% of the vote, a series of 'comparison numbers' are computed by successively dividing its votes by 1, 2, 3, 4, etc. The 'comparison numbers' of all parties are then ranked and a given number of seats are allocated to the parties on the basis of this ranking (see Table A.4 in the Appendix for an illustration of the workings of the d'Hondt rule). So, for each party's marginal seat, there is an additional number of votes that are needed in order to win an extra seat (or which must not be lost in order to hold that seat).

Our forcing variable is computed as the number of votes at the local elections that the ideological bloc of the regional president has to lose (gain) in order to lose (win) a majority of seats. We make this calculation under different vote migration scenarios. In our preferred measure (used to present our main results), we assume that the votes taken away from the party holding the marginal seat are transferred only to abstention and not to the parties in the other ideological bloc[23]. We also assume that negative vote shocks

[21] Some regionalist parties have historically entered coalition governments with either left- or right-wing incumbents at the regional level and, as a result, at the local level. The PAR in Aragón and UM in the Balearic Islands are examples of such parties (see Table A.8 in the Appendix).

[22] The way we deal with undefined and/or local parties is relevant for the computation of the forcing variable (as we discuss later), but not for the definition of the alignment treatment, since these parties do not hold the regional presidency and, as such, are excluded from the main definition of alignment used.

[23] We believe this assumption to be plausible in Spain given the importance of vote transfers

simultaneously affect all the parties within the regional incumbent's ideological bloc[24,25], so we subtract votes not just from the party holding the marginal seat but from all parties in the bloc in proportion to the initial votes received by each party. Intuitively, our method works as if we were subtracting small numbers of votes from one of the blocs, distributing these votes between the parties of that bloc according to their initial vote share, while keeping the number of votes for the parties of the other bloc constant. As we subtract more votes, seats start shifting from one bloc to the other. We stop subtracting votes when we observe a shift in the seat majority from one bloc to the other (i.e., when the last seat giving the majority to one bloc moves to the other bloc). The number of votes needed to reach this stage, divided by the total number of votes, is our forcing variable.[26] The measure is easy to compute for a single municipality (codification is needed when you have thousands of them) and is also very intuitive. Proof of that is its use by the media to assess the closeness of an election (either based on poll data or during election night itself). See, for example, the following excerpt:

> "*The vote count was a bitter experience for the leaders of PP and PSOE* (in the municipality of A Estrada, in Galicia)*, whose dispute for the leadership of the municipal government went down to the wire. The PP saw its absolute majority disappear for a while and, with it, its control of the executive. An urban polling station was the last to send in its count and when it did so it unleashed the PP's euphoria. The list headed by José López Campos kept the government in power by a few score of votes*". (El Faro de Vigo, 05/25/2015)

Of course, despite being intuitive, the measure might also be inaccurate and this is why we also compute the forcing variable using alternative vote migration scenarios. We consider that a vote might go (come) not just from (to) abstention but also from (to) the other ideological bloc, as well as a combination of these two assumptions.[27] In any case, as we

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from/to abstention during the period of analysis. This can be documented by examining the correlation between turnout and the left-wing share of the vote. Using district-level national elections data, Lago (2010) reports a value of 0.5 for this correlation in the case of the socialist vote share (i.e., PSOE). Using municipal-level data, we find roughly the same correlation.

[24] The vote outcomes of the two main left-wing groups of parties are highly correlated. Using municipal-level data for our period of analysis, we find a statistically significant correlation of 0.37 between the increase in the socialist vote share (PSOE) and the increase in the vote share of more extreme left-wing parties.

[25] This is less relevant in the right-wing bloc, since there is usually only one dominant party.

[26] In Table A.3 in the Appendix we provide the algebraic formulation for the more basic case, i.e., the one in which the bloc holding a seat majority has only one seat in excess and it is clear that the next seat to be allocated belongs to the opposition bloc. In Table A.5 we provide a numerical example to illustrate how this might work in a more complicated scenario (i.e. the seat share difference between government and opposition is larger than one). The Stata code used to compute this variable is available upon request.

[27] In Table A.6 in the Appendix we provide a numerical example.

show in the next section, the results do not change greatly when using this alternative forcing variable.

Regional-level electoral competition. Our measures of electoral competition are based on the difference between the seat shares controlled by the regional president and those controlled by the opposition (henceforth, *Regional seat margin*). The resulting figure is demeaned. We use seats instead of votes because regional elections have multiple districts and different degrees of proportionality in different regions, which renders vote shares meaningless (see e.g., Strom, 1989). Note also that the purpose here is different to that when we were computing the forcing variable with local election data: in that case we sought to make treated and control groups comparable, whereas here we seek to capture differences in electoral competition across regions.

The three measures we use differ in their degree of inclusiveness of the parties supporting and opposing the regional president. In the first measure, we compute the *Regional seat margin* as the difference between the seat share of the parties that actually support the regional president in the parliament (i.e., those voting YES in the investiture) and the seat share of the parties that do not support the president. Here we include the main parties in the opposition bloc, that is, those parties that belong to a different ideological bloc (and so the ones that voted NO in the investiture), and there is enough evidence to suggest they would agree to elect a candidate from that group. This is our preferred measure since it is a much more accurate depiction of the threats the different regional governments actually face. In the second measure, we expand the definition and include the seats of all the parties included in the two ideological blocs; in this case, however, we exclude some parties that for specific reasons (i.e., radical preferences, conflictive scissions) are unwilling to vote for an ideologically close party. The difference between this and the first measure is that, in some cases, it expands the seat share of the regional president, since it allows the president to count on ideologically close parties that do not actually belong to the ruling coalition (i.e., because the party is a single-party government or because the president picked a centrist regionalist party as a partner)[28]. The disadvantage of this second measure is that it relies on hypothetical rather than on real alliances. The third measure compares the seat shares of the main parties in government and in opposition. Research on local government coalition formation in countries with a PR system shows that a party's seat share is the variable that best predicts whether this party is going to win control of the government (e.g., Skjæveland and Serritzlew, 2009). A

[28] This might be important in some cases. Take for example, the case of Andalusia, where the PSOE has been in government since the beginning of democracy. The number of seats held by this party is not that great, but there are two parties in its bloc (PA and IU) that provide a sort of buffer, because they are unlikely to allow a candidate from the PP to become president.

shortcoming of this variable is that it neglects the fact that, on some occasions, there are parties in the opposition bloc that are ideologically close and prone to reaching an agreement even without a pre-electoral coalition[29]. As we said, our preferred measure is the first. Thus, we present the detailed results for this variable and only the main results are presented for the other two in the robustness checks.

Control variables. In order to provide a further check of the reliability of the RDD results and to improve the efficiency of our estimates, we also present results when controlling for several covariates: log(*Population*), *Population density*, *Property tax rate*, *Assessed property value*, and *Local debt* (see Solé-Ollé and Sorribas-Navarro, 2008).

5. Results

5.1. Exploring the discontinuity

Panel (a) in Figure 1 plots the seat margin of the regional incumbent's bloc at the local elections against its alignment status, which is given a value of one if the mayor and the regional president belong to the same party. The graph shows a considerable jump when the ideological bloc of the regional incumbent moves from -1 seat to +1 seat (i.e., when it requires one additional seat to gain/lose a majority of seats).

Although it might seem appropriate to perform the analysis by comparing the average value of transfers for the municipalities located at the -1 and +1 seat margin values, this would not be entirely correct, since this is quite a large group with considerable internal variability in the popularity of the party of the regional incumbent[30]. For this reason, we use the *vote margin* as the forcing variable, computed as the percentage of votes needed for the regional incumbent's bloc to win (lose) a majority of seats on the city council. Panel (b) in Figure 1 shows the plot between this forcing variable and the alignment status. From this figure, we see that there is a big jump in the probability of alignment when moving from positive to negative values near the threshold.

[Figure 1]

Panel (a) in Table 1 shows the results obtained when estimating the discontinuity either with a flexible polynomial or with a local linear regression. When using the first approach, the Akaike information criterion suggests that it is optimal to fit a second-order polynomial. In this case, the estimated value of the discontinuity in the first stage (i.e. the discontinuity in the probability of alignment) is 70%. The results do not change much with

[29] Consider, for example, the case of the four-party left-wing coalition in the Balearic Islands or the coalitions between the PSOE and BNG in Galicia (see Table A.7 in the Appendix for details).
[30] The percentage of votes needed to win/lose this last seat might be as high as 15%.

other polynomial orders, when control variables are added or when a local linear regression is used.

[Table 1]

A possible concern in relation to the RDD is that the forcing variable might be manipulated[31]. A way of verifying that this not the case is to examine its histogram or, more formally, test for the continuity of this variable at the cut-off by running local linear regressions of the log of the density separately on both sides of the zero threshold (see Figure 2). We performed both checks and found no evidence of manipulation. Another validity check involves testing for the presence of a discontinuity in the pre-determined covariates used as controls and further observables that are potential confounders. None of these variables is discontinuous around the threshold[32].

[Figure 2]

5.2. Partisan alignment and transfers

Panel (b) of Table 1 presents the RD estimates of the LATE, which correspond to the second stage of a 2SLS regression where the dependent variable is capital transfers per capita. The 2SLS coefficients associated with the optimal polynomial are around 92 euros. This amount has to be compared with the transfers received by unaligned municipalities just at the left of the cut-off, which are around 99.82 euros per capita. Thus, an aligned municipality would, on average, receive 92% more per capita transfers than a similar unaligned one. The estimated LATE is robust to the use of different polynomial orders (columns (i) to (iii) report results for polynomial orders 1 to 3), to the introduction of control variables in the equation (see column (iv)), and to the use of local linear regression (see column (v) for results with the 21% bandwidth).

The results are statistically significant, robust, and quantitatively meaningful. At the threshold, in competitive local elections, aligned municipalities receive twice the amount obtained by their unaligned counterparts. The degree of party favoritism in the allocation of these transfers therefore seems very high. However, the impact on local public finances is not so great once the share of the transfers in local budgets has been accounted for. Transfers from regional governments represent 54% of the capital transfers received by municipalities, which in turn represent 20.52% of local capital spending. Therefore, a 92% increase in such transfers would help municipalities increase their capital spending by 18.9% (=92% × 20.52%). Note also that the grants we examine here are especially

[31] Note that in any case manipulation is less of a concern in a PR system, where the outcome of the election depends on the votes for all different parties, the workings of a complex rule that converts votes into seats, and the uncertainty of post-election coalition bargaining (see Folke *et al*., 2015, for an extended discussion).

[32] These results are reported in Table A.12 in the Appendix.

susceptible to favoritism, because they are discretionary project grants and are less amenable to distribution by formula. This is not so obvious in the case of current grants, which represent a large share of revenues and for which there is no evidence of favoritism.[33]

The discontinuity in transfers around the cut-off is illustrated in Figure 3, which shows the plot between a second-order polynomial of the forcing variable and the amount received in capital transfers. The graph confirms the evidence of a clear and sizeable discontinuity around the threshold: municipalities marginally to the right of the cut-off (those likely to be aligned) receive much greater amounts of transfers than those marginally to the left (those likely to be unaligned)[34].

[Figure 3]

The last column in Table 1 also reports the DiD coefficient. The effect estimated is around 51.70 euros and, therefore, much smaller than that obtained when using the RDD. There are two possible explanations for this difference. First, the RDD can be considered as causal, but this is less clearly the case for the DiD estimates. For instance, it might well be that some local governments switched from being unaligned to aligned after the previous local election, and that higher transfers were the cause of this. Note that this could have generated differences between the transfers received by governments that moved from being unaligned to aligned and by the governments that remained unaligned. This suggests that the DiD estimates might be biased downwards. Second, the DiD might be an estimate of the ATE – recall that our model suggests that the ATE should be smaller than the LATE (i.e., the DiD estimate should be smaller than the RDD estimate). To see which of the two explanations is more plausible, we re-estimated our DiD equation by incorporating a lead and a lag. Since we only have three cross-sections, the only thing we can do (without having to exclude the fixed effects) is to provide estimates for the two first cross-sections including a lead of alignment in the equation (in addition to the contemporaneous alignment) and for the last two-cross sections including a lag of alignment. It transpires that the effect of contemporaneous alignment is very similar when using just the first two cross-sections and that neither the lead nor the lag in alignment are statistically significant and the coefficients are very small (the results are presented in Table A.9 in the Appendix). This tells us that the

[33] Current transfers represent a larger share of the local budget: they account for one third of current revenues. We have also examined the impact of partisan alignment on current grants (which are formula-based) and we find that the treatment effect is statistically insignificant. These results are not presented for reasons of space, but are available upon request.

[34] The magnitude of the jump is the coefficient of the reduced form (not shown in the table, but available upon request). Provided that the order of the polynomial used to estimate the reduced form is the same as that used in the 2SLS estimation, the reduced form coefficient will be equal to the product of the 2SLS coefficient and the first-stage estimate.

capital transfers of municipalities switching and not switching their alignment status are evolving similarly and also that the extra grants allocated to aligned governments do not spillover to future terms of office (and so to local governments that might not be aligned anymore). This suggests that the DiD can be interpreted as an estimate of the ATE. However, given the paucity of the data used for the placebo test, this result should be taken with caution.

5.3. The role of regional-level electoral competition

In this section, we present the results of the estimation of the HLATE, which allows the intensity of party favoritism in the allocation of transfers to vary with the level of regional electoral competition. This effect is estimated by including an interaction between alignment and the *Regional seat margin*. As discussed in previous sections, the validity of the HLATE estimates relies on the fact that the source of heterogeneity (regional electoral competition) must be continuous at the threshold. In Figure 4, we show that this is indeed the case. The graph plots bin averages of the *Regional seat margin* against our forcing variable, the solid line corresponding to a second-order polynomial (which is also the optimal order in this case). No evidence of a discontinuity appears.

[Figure 4]

In Table 2, we present empirical evidence that, when regional incumbents face uncontested regional elections, the level of party favoritism in the allocation of transfers increases. As indicated in equation (9) above, this effect is captured by the interaction term between the indicator of electoral competition and the alignment dummy ($a \times$ *Regional seat margin*). The first three columns in this table report the RDD results, while the last three report those of the DiD estimates. As in the bottom panels of Table 1, the RDD results shown in Table 2 are the second stage of 2SLS regressions, where the alignment dummy (a) is instrumented with the treatment dummy (d). The polynomial of the vote margin is of second order (the optimal degree, as discussed) and is fully interacted with the regional seat margin. The results are not affected by whether we do or do not control for term × region fixed effects and other covariates.

[Table 2]

In all cases, the coefficient of the interaction variable ($a \times$ *Regional seat margin*) is statistically significant and positive. As expected, the more uncontested a regional election is, the higher the amount of discrimination we observe. The coefficient of the interaction in our preferred specification is 5.07 euros, which indicates that raising the seat share of the regional government (i.e. decreasing electoral competition) by one standard deviation relative to the average translates into a 38-euro per capita (=7.44×5.07) increase in the treatment effect, which is equivalent to a 41% increase in the HLATE (=38/92). Panel (a) in

Figure 5 plots the RDD marginal effects against the value of the *Regional seat margin*. The graph highlights the range of variation in the party favoritism effect: the marginal effect ranges from 0 to 250 euros from one extreme to the other of the x-axis, with an average around 100. In regions with a level of electoral competition one standard deviation above the average of aligned mayors receive 143% more transfers than unaligned mayors. This effect falls to 60% in regions with a level of electoral competition one standard deviation below the average. This heterogeneity may help explain better the magnitude of our local average treatment effect compared to that reported elsewhere.

[Figure 5]

The table also reports the DiD results (in the last three columns). The results are similar to those of the RDD estimates. Party favoritism increases with the degree of electoral competition at the regional level. As in Table 1, the average effect (captured by the non-interacted coefficient) is smaller than the LATE. The coefficient of the interaction is also smaller, but still quite sizable (around 2.5). Panel (b) of Figure 5 shows the DiD marginal effects. The picture that emerges is very similar to the one discussed before.

5.4. Confounding factors

In order to check that the heterogeneous effects we report are in fact due to differences in the degree of electoral competition, we run similar regressions to those in Table 2. Here, however, in addition, we include interactions of the treatment dummy with confounding factors (measured at the regional level) that may be correlated with our measure of regional electoral competition (see Table 3)[35].

In Panel (a) of that table we explore the possible role of the situation of public finances, since it is reasonable to expect that fiscal stress might eventually affect the ability of the regional government to allocate transfers to municipalities. We include interactions with regional revenues per capita (which include revenues coming from revenue-sharing, taxes and intergovernmental grants) and with the debt burden (i.e., debt as a share of current revenues). We also include the average population density of the municipalities in the region, as smaller towns are much more reliant on grants of this kind than are big cities. Finally, another relevant factor is whether a municipality belongs to a single-province region. In such regions the amount of grants allocated by the regional government is higher (i.e., the regional government assumes the responsibilities and the resources of both the region and the province) and this may influence regional electoral competition as well as the incentives to discriminate between alignment and unaligned governments. Thus, we introduce in the regression a dummy variable equal to one if the municipality is in a region

[35] See Table A.2 for the definition of these variables, data sources and descriptive statistics.

with only one province. The results show that party favoritism is stronger in regions with more current revenues, lower debt burden and less densely populated municipalities. These effects are statistically significant. Importantly, the coefficient of the *Regional seat margin* is still positive and statistically significant at the 95% level in all cases. The coefficient is slightly smaller than that reported in Table 2, but the marginal effects offer the same qualitative picture (complete results are available upon request).

[Table 3]

In Panel (b), we report the results when including interactions with variables related to the incentives to discriminate faced by regional politicians. These alternative political mechanisms are not necessarily incompatible with the main story studied in this paper. The first factor is tenure in office (i.e., number of consecutive terms in office). It might be argued that the longer a party stays in office the more time the regional incumbent has to build alliances with local actors and the greater the likelihood of discrimination in the allocation of transfers. Another potential factor is the timing of regional and local elections: it might be that some regions choose (when designing their basic laws) to alternate these elections precisely to isolate local governments from the political interference of regional incumbents, and that this has some influence on the degree of electoral competition region-wide. Therefore, we include in the estimation an interaction between our treatment indicator and a dummy equal to one if regional and local elections are concurrent. Finally, informed voters might not be very tolerant of discrimination in transfers between places. To account for this, we include interactions between the alignment and the level of press circulation and, also, with the percentage of educated residents. We do not find any evidence that favoritism increases with tenure in office, but we do find evidence that favoritism is greater in places where elections are concurrent, and where press circulation is lower. In any case, however, the introduction of these additional interactions does not have any impact on the electoral competition results. The size of the coefficient and its statistical significance remains and the marginal effects are similar. Therefore, the finding that party favoritism is greater in regions with less political competition is resistant to the consideration of other plausible influences.

5.5. Robustness checks

The results are also robust to changes in key aspects of the methodology employed (see Tables A.10 and A.11 in the Appendix). First, we show that the results are robust to changes in the definition of alignment and in the way we compute the forcing variable. Both the LATE and the HLATE results are very similar when using other (more comprehensive) measures of alignment. We report the results for two of these measures (see Table A.10): *Partner alignment*, defined as a dummy equal to one when any of the main partners in the

coalition at both levels (i.e., not just the president or the mayor) belongs to the same party; and, *Bloc alignment* (i.e., the party of the president and that of the mayor belong to the same ideological bloc). The results remain unchanged. The results also remain unchanged when we exclude from the estimation municipalities in which local parties and regional parties that cannot easily be classified are represented on local councils, and when using an alternative forcing variable (i.e., that computed assuming that votes are transferred not only from abstention but also from the opposition bloc)[36]. Second, the results are also very similar when we use as a measure of regional electoral competition the seat shares of all the parties in the blocs of the president and the opposition (see Table A.11 in the Appendix). It appears not to matter whether we use actual or hypothetical coalitions. The measure of regional electoral competition that uses the seat shares of the two main parties does not work particularly well. The interacted term is smaller and not statistically significant and the marginal effects become statistically different from zero at much larger values of the variable. The problem with this measure is that it misclassifies some situations where although the first party has a clear advantage over the second, it is unlikely to win a majority in the parliament and so to get enough support to win the regional presidency.

5.5. Discussion

Thus, up to this juncture, we have shown that aligned local governments do indeed receive more transfers than those obtained by unaligned local councils and that the difference between the two is much greater the lower the level of regional electoral competition. These results are statistically significant, quantitatively meaningful, and highly robust. However, although the results are consistent with the predictions of our theoretical model, they might also be consistent with other theories regarding the motivations of politicians. First, the regional incumbent might allocate more transfers to local governments controlled by the same party as hers because she expects co-partisans to channel back some of the funds to her. For example, local governments may obtain kickbacks from firms undertaking public works that are then transferred to the regional or national party to help fund its electoral campaigns. Note, however, that it is not clear that such a scenario can be reconciled with our main prediction: lower electoral competition at the regional level reduces campaign finance needs and, hence, the need to use these unorthodox procedures.

Second, the regional incumbent might simply expect to share the rents generated by the public works. A lower level of regional electoral competition could foster incentives to

[36]The Appendix includes the plots of the alignment status and of capital transfers against the alternative forcing variable (Figure A.1). These figures show that the size of the discontinuity at the threshold is not sensitive to the assumptions made when computing the forcing variable. The Appendix also includes the histogram and the McCrary graph of the alternative forcing variable, again with no signs of manipulation (Figure A.2).

behave in this way (see, e.g., Svaleryd and Vlachos, 2004), so the main prediction in such a scenario and of our model is essentially the same. There are, however, several complementary pieces of evidence that suggest this is unlikely to be the case. First, we would expect extended periods in office to help in the building of the networks that politicians use to extract these rents, but we did not find any evidence that tenure in office had any effect on party favoritism. Second, this alternative theory would not necessarily predict that the LATE should be larger than the ATE, which is what the comparison of our RDD and DiD results tentatively suggests. Rather, this alternative theory suggests that the local mayors that are best able to extract bribes from public works firms and to share them with comrades at higher levels are precisely those that won the local election by the greatest margin (and so have no fear of losing the next election if they extract too many rents or if they are caught in a corruption scandal). It could be shown that in this type of model the ATE could in fact be greater than the LATE: transfers would jump at the threshold (a mayor places more trust in her co-partisans than in the opposition) but continue growing as aligned mayors become more and more popular.

6. Conclusion

In this paper, we have examined the way in which competition in regional elections can affect the incentives of regional-level incumbents to discriminate in favor of aligned municipalities. We first present a simple theoretical model in which regional incumbents face a trade-off when deciding how to allocate grants to lower-layer governments. On the one hand, they are concerned about winning the next regional election; on the other, they wish to maximize the number of aligned mayors, which in the long run should help the regional incumbent increase her political capital and win future elections. The main hypothesis derived from this model is that when the regional incumbent performed particularly strongly in the previous election, and so believes her re-election prospects to be high, she can concentrate her efforts on targeting more resources towards her party comrades.

To test the above hypothesis, we have used capital transfers from regional to local governments in Spain and applied a 'fuzzy' RDD that we adapt to a proportional representation electoral system. To begin with, we document whether (and, if so, to what extent) regional incumbents favor aligned municipalities with disproportionally larger intergovernmental grants. We find that aligned municipalities, on average, obtain 92% more transfers per capita than are obtained by unaligned municipalities. Such a difference would enable local governments to increase their investments by 19%. Moreover, the initial RDD design is modified, as in Becker *et al*. (2013), in order to obtain local average treatment effects that are heterogeneous across regions with different levels of electoral competition in regional elections. The results suggest that party favoritism is more

prevalent when the president's party won the previous election by a large share of seats. In regions with a low level of electoral competition (one standard deviation above the average), aligned mayors receive 143% more transfers than are obtained by unaligned mayors. This effect falls to 60% in regions with a higher level of competition. The differences are even larger in the most extreme cases. This result suggests that the degree of party favoritism is mediated by the level of competition in the elections: in places where the elections are largely uncontested, the degree of party favoritism is massive, whereas in places where the elections are strongly contested favoritism disappears.

Our results shed light on the mechanisms responsible for the extreme degree of party favoritism in the allocation of transfers. Some complementary sources of evidence suggest that regional incumbents pursue a long-term strategy, seeking to win additional mayoralties and to strengthening their power base in order to improve their performance in future elections. The evidence here, however, is merely suggestive and any conclusions should be drawn with extreme care. For the time being, we know that discretionary transfers are subject to extreme levels of party favoritism and that electoral competition matters, but more research is required to obtain a full understanding of the motives behind this behavior.

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Tables and figures

Table 1: *Average effect of partisan alignment on capital transfers.*

	(i) RD	(ii) RD	(iii) RD	(iv) RD	(v) RD	(vi) DiD
	(*a*) *First stage* (*Dep. variable*: *Alignment status*)					
d	0.741 (53.911)***	0.706 (36.403)***	0.706 (28.588)***	0.706 (36.436)***	0.715 (26.600)***	--.--
R^2	0.749	0.749	0.749	0.749	--.--	--.--
AIC	150.020	140.214	143.383	--.--	--.--	--.--
	(*b*) *Second stage* (*Dep. variable*: *Capital transfers per capita*)					
a	82.08 (8.39)***	91.56 (6.23)***	110.20 (5.93)***	89.84 (6.41)***	93.67 (4.887)***	51.70 (8.47)***
Polynomial order	1	2	3	2	--.--	--.--
Bandwidth	--.--	--.--	--.--	--.--	21%	--.--
Region × Time effects	YES	YES	YES	YES	YES	YES
Controls	NO	NO	NO	YES	YES	YES
Observations	6,056	6,056	6,056	6,056	2,860	6,056

Notes: (1) 1995-99, 2000-03 and 2004-07 terms. (2) Panel (a) of this table shows the first-stage estimates of a 2SLS regression where the dependent variable is Alignment (*a* = 1 if the mayor and the regional president belong to the same party). (3) Columns (i)-(v) in Panel (b) show the second-stage estimates of the 2SLS where *d* is used as an instrument for the alignment dummy *a*; column (vi) shows the difference-in-differences estimates. (4) *t*-statistic in parentheses, robust standard errors clustered at the municipality level; ***, ** & * = statistically significant at the 99%, 95% and 90% levels. (5) Control variables included: log(*Population*), *Population density*, *Property tax rate*, *Assessed Property Value* p.c., and *Local Debt* p.c. (7) RD estimates in column (v) are obtained by a local polynomial IV regression using an Epanechnikov kernel; the estimates and the optimal bandwidth are based on the procedure proposed by Calonico, Cattaneo, and Titiunik (2014).

Table 2: *Effect of regional electoral competition on party favoritism.*

	(i) RD	(i) RD	(iii) RD	(iv) DiD	(v) DiD	(v) DiD
a	102.88	99.33	94.69	57.68	58.04	56.26
	(5.23)***	(5.52)***	(6.71)***	(4.02)***	(4.04)***	(4.03)***
a × Regional seat margin	5.61	4.74	5.07	3.67	3.10	3.52
	(2.44)**	(2.22)**	(2.76)***	(2.40)**	(2.11)*	(2.52)**
Regional seat margin	0.23	0.40	--.--	-0.55	-0.49	--.--
	(0.16)	(0.28)		(-0.43)	(-0.59)	
R^2	0.05	0.11	0.27	0.19	0.20	0.24
Region × Term fixed effects	NO	NO	YES	NO	NO	YES
Controls	NO	YES	YES	NO	YES	YES
Observations	6,056	6,056	6,056	6,056	6,056	6,056

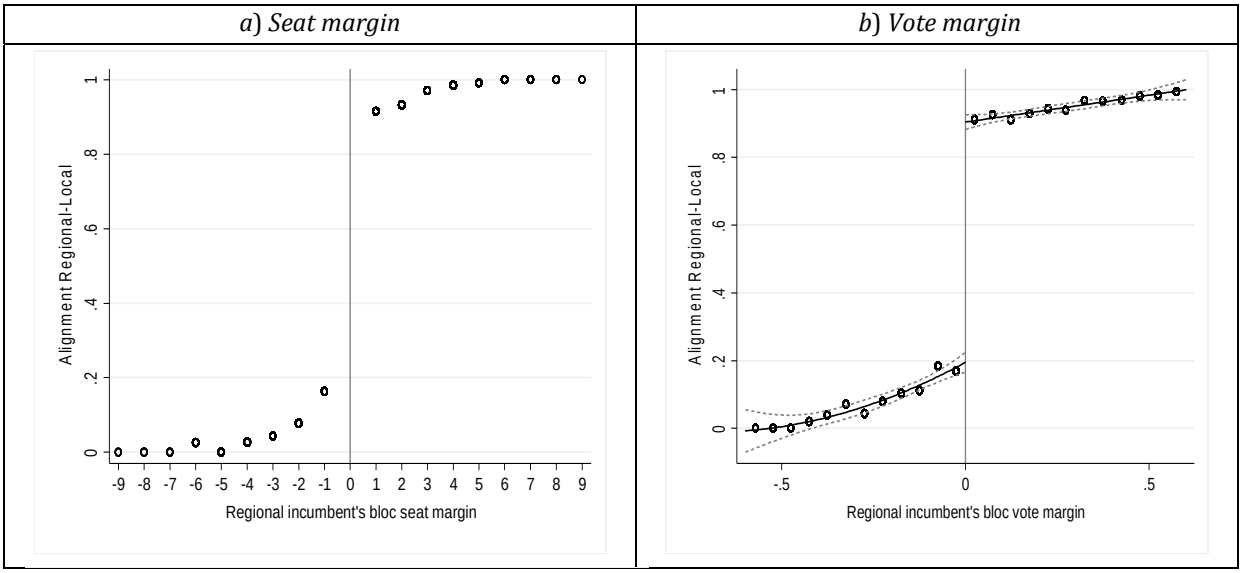
Notes: (1) Coefficients in columns (i)-(iii) correspond to RD estimates and those of columns (iv)-(vi) are difference-in-differences estimates. (2) Explanatory variable: Alignment dummy *a*; in columns (i)-(iii) *a* instrumented with *d* (see Table 1); columns (i)-(iii) include interactions between *a* and the *Regional Seat Margin* variable, and a second-order polynomial of the forcing variable fitted separately on either side of the zero threshold using the whole sample and also fully interacted with the *Regional Seat Margin*. (3) *Regional Seat Margin* is the difference between the seat shares of the parties in the regional government and those of the parties in the opposition in the previous regional election (this variable is demeaned). (4) The control variables are the same as in Table 1. (5) Time dummies are included in columns (iv) and (v). (6) *t*-statistic in parentheses, robust standard errors clustered at the regional level; ***, ** & * = statistically significant at the 99%, 95% and 90% levels.(7) See Table 1.

Table 3: *Alternative explanations.*

	(i) RD	(ii) RD	(iii) RD	(iv) RD	(v) DiD	(vi) DiD	(vii) DiD	(viii) DiD
	(*a*) *Financial situation*							
a	92.96	88.42	91.43	93.35	62.85	57.54	59.33	56.97
	(7.00)***	(8.35)***	(7.52)***	(6.59)***	(5.11)***	(6.95)***	(5.92)***	(4.73)***
a × Regional seat margin	3.59	4.76	4.21	5.06	2.55	2.29	2.28	2.96
	(2.74)***	(2.44)**	(2.27)**	(2.71)***	(2.41)**	(2.59)**	(2.42)**	(3.05)***
a × Revenues p.c.	0.05	--.--	--.--	--.--	0.03	--.--	--.--	--.--
	(6.88)***				(3.13)***			
a × Debt burden	--.--	-6.20	--.--	--.--	--.--	-7.11	--.--	--.--
		(-4.66)***				(-4.50)***		
a × Population density	--.--	--.--	-0.19	--.--	--.--	--.--	-0.16	--.--
			(-2.38)**				(-2.29)**	
a × Single province	--.--	--.--	--.--	10.99	--.--	--.--	--.--	24.58
				(0.29)				(0.92)
	(*b*) *Political influences*							
a	94.75	57.22	90.92	94.90	66.88	33.73	66.53	66.23
	(6.88)***	(4.16)***	(7.35)***	(6.60)***	(5.46)***	(2.29)**	(8.02)***	(5.75)***
a × Regional seat margin	4.54	4.97	4.54	5.05	3.40	3.63	3.12	3.88
	(2.65)***	(2.32)**	(2.55)**	(2.72)***	(2.79)***	(2.44)**	(2.89)***	(3.13)***
a × Tenure in office	6.50	--.--	--.--	--.--	6.38	--.--	--.--	--.--
	(1.39)				(1.57)			
a × Concurrent elections	--.--	50.91	--.--	--.--	--.--	49.01	--.--	--.--
		(2.68)***				(2.78)***		
a × Press circulation p.c.	--.--	--.--	-0.73	--.--	--.--	--.--	-0.78	--.--
			(-2.41)**				(-2.77)***	
a × % Educated	--.--	--.--	--.--	-0.34	--.--	--.--	--.--	-0.12
				(-0.01)				(-0.00)
Observations	6,056	6,056	6,056	6,056	6,056	6,056	6,056	6,056
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Region × Term effects	YES	YES	YES	YES	YES	YES	YES	YES

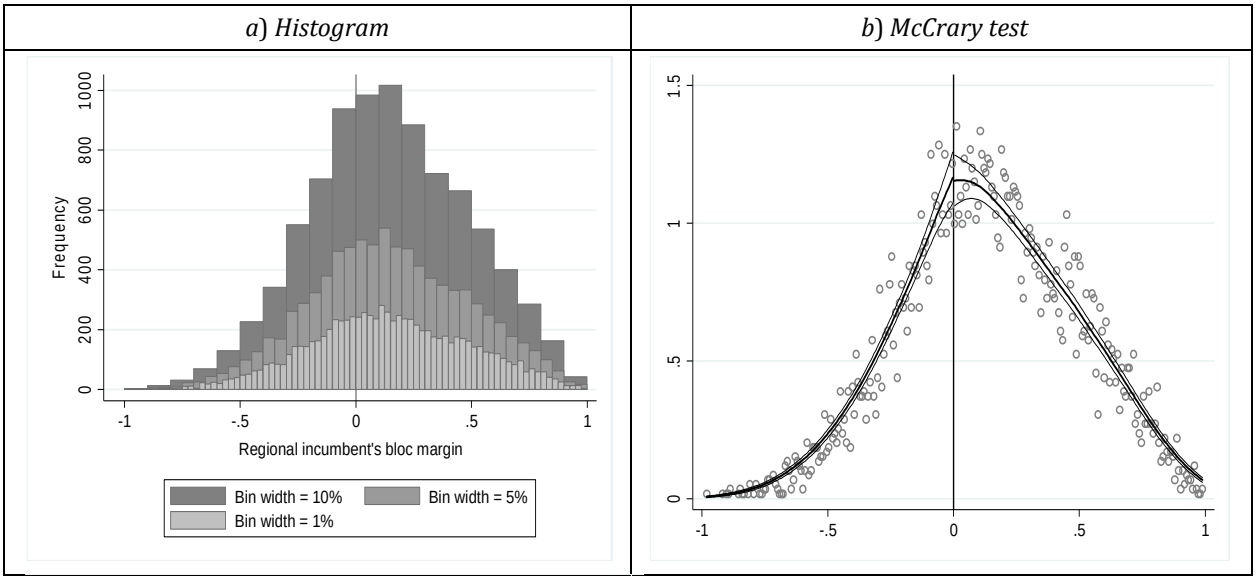
Notes: (1) Control variables as in Table 2. (2) Estimates columns (i)-(iv) correspond to RD regressions, while those in columns (v)-(viii) are difference-in-differences estimates. (3) The polynomial order of the forcing variable is two (the optimal one) and that of *Regional seat margin* and the potential confounders is one. (4) *Revenues p.c.* = current revenues of the regional government per capita (demeaned); *Debt burden* = regional debt burden (principal + interest) as share of current revenues (demeaned), *Population density* = average population density of municipalities in the region (demeaned), *Single province* = equal to one if there are no provincial governments; *Tenure in office* = number of consecutive terms in office of the party of the regional president (demeaned), *Press circulation* = newspaper copies per 1,000 inhabitants (in the province; demeaned); *Concurrent elections* = dummy equal to one if regional and municipal elections are held at the same time; *% Educated* = share of people with primary and secondary education; (5) *t*-statistic in parentheses, robust standard errors clustered at the regional level; ***, ** & * = statistically significant at the 99%, 95% and 90% levels. (6) See Table 1.

Figure 1: *Alignment v. Forcing variable*



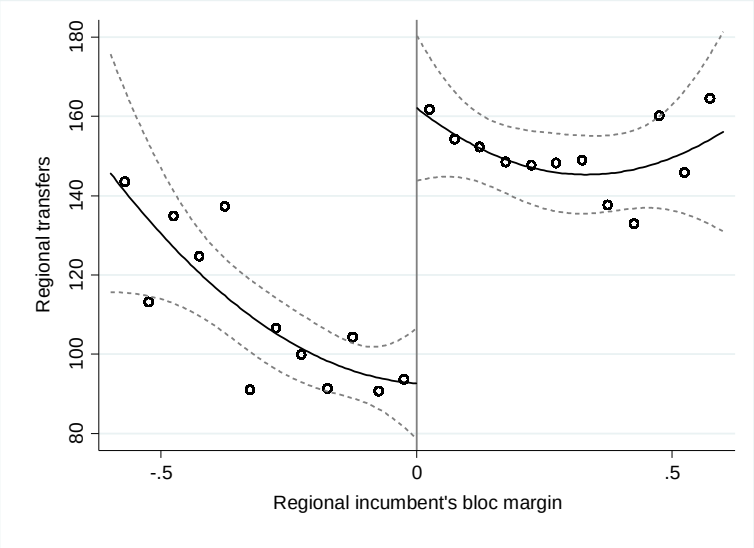
Notes: (1) 1995-99, 2000-03 and 2004-07 terms. (Obs= 6,056). (2) Alignment Regional-Local = 1 if the mayor and the regional president belong to the same party. (3) *Regional incumbent's bloc seat margin* = distance in local council seats to a change in the ideological bloc's seat majority(4) *Regional incumbent's bloc vote margin* = distance in percentage of local election votes to a change in the ideological bloc's seat majority; seats and votes as obtained at the 1995, 1999 and 2003 local elections (see Appendix). (5) Dots = Bin averages; Bin size = 0.05 (40 bins); optimal bin size selected using a standard F-test for nested models (Lee and Lemieux, 2010). (6) Black line = second-order polynomial, fitted separately on either side of the zero threshold, using the full bandwidth. (7) Dashed lines = 95% confidence interval. (8) See Table A.1 in the Appendix for definitions and sources.

Figure 2: *Continuity of the forcing variable.*



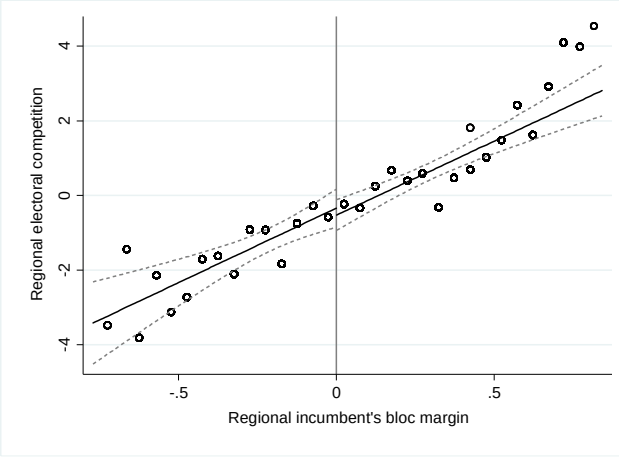
Notes: (1) Dots for the McCrary graph: Bin averages of the density of forcing variable (*Regional incumbent's bloc vote margin*). (2) Computed with McCrary's (2008) Stata program.

Figure 3: *Capital transfers v. Regional incumbent's vote margin.*



Notes: (1) Regional transfers = Capital transfers per capita from the Regional to the Local government during the last two years of the 1995-99, 2000-03, and 2004-07 municipal terms. (2) The dots are bin averages of 5% bin size. (3) The solid line represents a second-order polynomial regression. (4) The dashed lines are 95% confidence intervals.

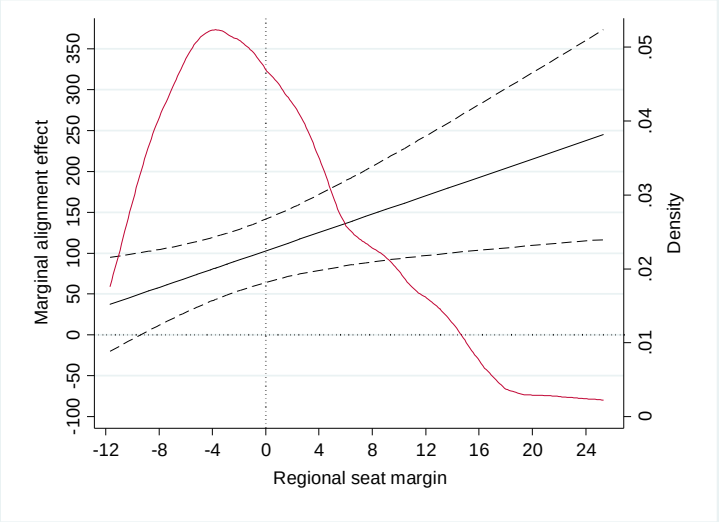
Figure 4: *Continuity of the Regional Seat Margin*



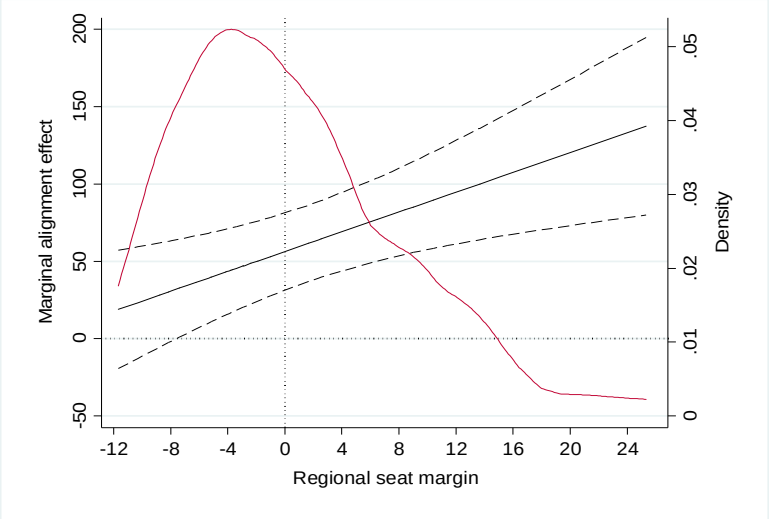
Notes: (1) The dots are bin averages of 5% bin size. (2) The solid line represents a first-order polynomial regression. (3) The dashed lines are 95% confidence intervals. (4) The y-axis plots the variable *Regional seat margin*, which is the difference between the seat shares of the parties in the regional government and those of the parties in the opposition in the last regional election (this variable is demeaned).

Figure 5: *Marginal alignment effect*

a) RDD



b) DiD



Notes: (1) Estimates in panel *a* correspond to column 1 in Table 2 and estimates in panel *b* correspond to column 4 in Table 2. (2) The dashed lines are 95% confidence intervals. (3) *Regional Seat Margin* is the difference between the regional president's party minus the seat share of the opposition parties in the previous state election (this variable is demeaned).

Appendix

A.I Proofs

Second-order condition:

In order to have a maximum and to rule out corner solutions, we need the second-order condition to be negative in all cases:

$$\Lambda_i = -\big(\mu(1-\theta)\big)^2 \chi \phi^r (u'(\tau_i))^2 - \eta\theta^3(2a_i-1)^3 \phi_i^\ell u(\tau_i)(u'(\tau_i))^2 + \big(\mu(1-\theta)\phi^r + \eta\theta(2a_i-1)\phi_i^\ell\big)\, u'' - c'' < 0 \qquad \forall i \qquad \text{(A.1)}$$

where $\chi = (\bar{v}^{r,0} + (1-\theta)\sum_i u(\tau_i))/\sqrt{N}$. To obtain this expression we relied on the property $\partial\phi(x)/\partial x = -x.\phi(x)$ and on the assumptions $u''' = 0$ and $c''' = 0$.

This SOC can be evaluated for aligned and unaligned municipalities:

$$\Lambda_a = -\big(\mu(1-\theta)\big)^2 \chi \phi^r (u'(\tau_a))^2 - \eta\theta^3 \phi_a^\ell u(\tau_a)(u'(\tau_a))^2 + \big(\mu(1-\theta)\phi^r + \eta\theta\phi_a^\ell\big)u'' - c'' < 0 \qquad \text{(A.2)}$$

$$\Lambda_u = -\big(\mu(1-\theta)\big)^2 \chi \phi^r (u'(\tau_u))^2 + \eta\theta^3 \phi_u^\ell u(\tau_u)(u'(\tau_u))^2 + \big(\mu(1-\theta)\phi^r - \eta\theta\phi_u^\ell\big)u'' - c'' < 0 \qquad \text{(A.3)}$$

Note that all the expressions in Λ_a are negative. However, this is not the case for Λ_u; in this case the expressions $\eta\theta^3\phi_u^\ell u(\tau_a)(u'(\tau_a))^2$ and $-\eta\theta\phi_u^\ell u''$ are positive. So, for the second-order condition to hold we have to assume that these expressions are smaller in absolute value to the others (i.e., to $-\big(\mu(1-\theta)\big)^2 \kappa\phi^r(u'(\tau_u))^2 + \mu(1-\theta)\phi^r u''$). This amounts to assuming that the incentives working through local elections are bounded relative to those working through the ones working through regional elections.

Proof of Proposition 1:

To see why there is party favoritism at close local elections, we have to compare the net marginal benefit for an aligned (a) and an unaligned (u) candidate at close local elections ($v_i^{\ell,0} = 0$). Operating from expression (3) in the main text we obtain:

$$\big(\mu(1-\theta)\phi^r + \eta\theta\phi_a^\ell\big)u'(\tau_a) - c'(\tau_a) = \big(\mu(1-\theta)\phi^r - \eta\theta\phi_u^\ell\big)u'(\tau_u) - c'(\tau_u) \qquad \text{(A.4)}$$

Then:

$$\mu(1-\theta)\phi^r - \frac{c'(\tau_a)}{u'(\tau_a)} = -\eta\theta\phi_a^\ell \quad \& \quad \mu(1-\theta)\phi^r(\cdot) - \frac{c'(\tau_u)}{u'(\tau_u)} = \eta\theta\phi_u^\ell \qquad \text{(A.5)}$$

Given that $\eta\theta\phi_u^\ell > -\eta\theta\phi_a^\ell$ and $\kappa = \mu(1-\theta)\phi^r > 0$, this implies that $(\kappa - (c'(\tau_u)/u'(\tau_u)) > (\kappa - (c'(\tau_a)/u'(\tau_a))$. Given that c'/u' is monotonically increasing in τ (since $u'' < 0$ and $c'' > 0$), this condition only holds if $\tau_u < \tau_a$, which is the case.

Proof of Proposition 2:

To prove this proposition we have to subtract the partial derivative of transfers (τ) with respect to the regional margin of victory ($\bar{v}^{r,0}$) for an unaligned mayor (a_i=0) from that of

an aligned mayor (a_i=1), both evaluated at a zero local margin of victory ($v_i^{\ell,0}=0$). Applying the implicit function theorem on the FOC we obtain:

$$\left.\frac{\partial \tau_a}{\partial \bar{v}^{r,0}}\right|_{v_i^{\ell,0}=0} - \left.\frac{\partial \tau_u}{\partial \bar{v}^{r,0}}\right|_{v_i^{\ell,0}=0} = -\left.\frac{(\partial \Gamma_a)/(\partial \bar{v}^{r,0})}{\Lambda^a}\right|_{v_i^0=0} + \left.\frac{(\partial \Gamma_u)/(\partial \bar{v}^{r,0})}{\Lambda^u}\right|_{v_i^0=0}$$

where Γ and Λ are the first and second order conditions, respectively, and the super-scripts a and u indicate that they are evaluated for an aligned and an unaligned mayor. If this difference is positive, less competition at the regional level increases the level of partisan favoritism at close elections (the difference between the transfers to an aligned vs. an unaligned mayor when $v_i^{\ell,0}=0$). To simplify, we omit below the reference to close elections. Operating, we obtain:

$$\frac{\partial \tau_a}{\partial \bar{v}^{r,0}} - \frac{\partial \tau_u}{\partial \bar{v}^{r,0}} = -\mu(1-\theta)\frac{\partial \phi^r(\cdot)}{\partial \bar{v}^{r,0}}\left(\frac{u'(\tau_a)}{\Lambda^a} - \frac{u'(\tau_u)}{\Lambda^u}\right)$$

where Λ^a and Λ^u denote the second-order condition evaluated at close local elections for the aligned and unaligned cases. Since $\partial\phi^r(\cdot)/\partial\bar{v}^0 < 0$, for this expressions to be positive, $u'(\tau_u)/\Lambda^u$ should be larger than $u'(\tau_a)/\Lambda^a$. Given that $u'(\tau_u) > u'(\tau_a)$, this means that the above condition will be positive if $\Lambda^u - \Lambda^a > 0$. Using (A.2) and (A.3) and by operating we obtain:

$$\begin{aligned}\Lambda^u - \Lambda^a = &-\left(\mu(1-\theta)\chi\kappa - \eta\phi_u^\ell\theta^3 u(\tau_u)\right)(u'(\tau_u))^2 \\ &+ \left(\mu(1-\theta)\chi\kappa + \eta\phi_a^\ell\theta^3 u(\tau_a)\right)(u'(\tau_a))^2 - (\eta\theta\phi_u^\ell + \eta\theta\phi_a^\ell)\,u'' \qquad \text{(A.6)}\end{aligned}$$

where $\chi = (\bar{v}^{r,0} + (1-\theta)\sum_i u(\tau_i))/\sqrt{N}$ and $\kappa = \mu(1-\theta)\phi^r$. If the second-order conditions for the unaligned municipalities (A.3) hold then it follows that:

$$-\left(\mu(1-\theta)\chi\kappa - \eta\phi_u^\ell\theta^3 u(\tau_u)\right)(u'(\tau_u))^2 = \left(\eta\theta\phi_u^\ell - \kappa\right)u'' + c'' + \delta \qquad \text{(A.7)}$$

where δ >0 is a constant. Substituting (A.7) into (A.6) we obtain

$$\Lambda^u - \Lambda^a = -\left(\kappa + \eta\theta\phi_a^\ell\right)u'' + c'' + \delta + \left(\mu(1-\theta)\chi\kappa + \eta\theta^3\phi_a^\ell u(\tau_a)\right)(u'(\tau_a))^2 > 0 \qquad \text{(A.8)}$$

This expression is positive because all terms are positive.

A.II Data and variables.

Table A.1: *Main variables: definition, descriptive statistics and data sources*

Variable	*Definition*	*Mean (SD)*	*Source*
Capital transfers	Capital transfers from the Regional government per capita (item 7.5, of the revenue budget)[1]	99.82 (142.84)	Spanish Ministry of Economics
Alignment (a)	Dummy equal to one if the party of the mayor is the same as that of the president of the AC (0 otherwise)	0.62 (0.48)	Local election statistics (votes and seats for all the parties) and partisan identity of the mayor, provided by the Spanish Ministry of Interior & Ministry of Public Administration (1995, 2003 and 2007 local elections) Vote margin computed with the same data using an algorithm developed for this purpose that replicates the workings of the d'Hondt rule (see Table A.2 in Appendix A)
Partner alignment	Dummy equal to one if the mayor and/or the main partner of a coalition belong to the same party as that of the president of the AC (o otherwise)	0.66 (0.47)	
Bloc alignment	Dummy equal to one if the mayor and the regional president belong to the same ideological bloc (0 otherwise)	0.66 (0.47)	
Regional incumbent's bloc vote margin (v)	% of votes cast at the local elections that have to be added (subtracted from) to the ideological bloc of the Regional incumbent to win (lose) a majority of seats in the local council	0.10 (0.32)	
Regional incumbent's bloc seat majority (d)	Dummy equal to one if the incumbent's bloc vote margin at the local elections (v) is greater than zero (0 otherwise)	0.61 (0.49)	
Debt burden	Debt burden (capital, item 9 of the spending budget, + interest, item 3), as a share of current revenues	0.06 (0.07)	Spanish Ministry of Economics (years 1996-2007)
Property tax rate	Nominal property tax rate (IBI), % on assessed property value	0.59 (0.16)	Centro de Gestión Catastral y Cooperación Triburaria, Spanish Ministry of Economics (years 1996-2007)
Property value	Assessed property value (thousands of EUR) per capita	20.46 (21.74)	
Population	Resident population	14291.55 (80809.51)	Population census (1991, 2001) National Institute of Statistics Censo de Habitantes 2001, National Institute of Statistics
% Old	% resident population older than 65 years	0.16 (0.05)	
% Young	% resident population younger than 14 years	0.21 (0.04)	
% Immigrant	% resident population non-EU immigrant	0.01 (0.03)	
% Unemployed	% resident population unemployed	0.06 (0.03)	
Income indicator	Residents' income level, as estimated from objective indicators (e.g., cars, bank deposits, etc.)	0.94 (0.14)	Anuario Económico de España, La Caixa (years 1996-2007)
Population density	Population per square kilometer	361.42 (1,306.37)	

Notes: 1. In order to facilitate the interpretation of the treatment effects presented in this paper, the descriptive statistics of "Capital transfers" refer to unaligned municipalities while those of the rest of variables refer to the whole sample.

Table A.2: *Interaction variables: definition, descriptive statistics and data sources*

Variable	*Definition*	*Mean (SD)*	*Source*
Local party	Dummy equal to one if the party of the mayor cannot be classified as left or right wing	0.017 (0.13)	Local election statistics (votes and seats for all the parties) and partisan identity of the mayor, provided by the Spanish Ministry of Interior & Ministry of Public Administration.
Concurrent elections	Dummy equal to one if regional and local elections are held on the same day	0.56 (0.49)	--.--
Single province	Dummy equal to one if the region has only one province	0.12 (0.32)	--.--
Regional revenues pc	Current revenues per capita in each region. This variable is demeaned.	0.00 (702.68)	Spanish Ministry of Economics (years 1996-2007)
Regional debt	Debt burden (capital, item 9 of the spending budget, + interest, item 3) as a share of current revenues. This variable is demeaned.	0.00 (3.61)	
Municipal density	Average population density (population per square kilometer) of the municipalities in each region. This variable is demeaned.	0.00 (138.60)	Population census (1991, 2001) National Institute of Statistics Censo de Habitantes 2001, National Institute of Statistics
% Educated	Percentage of people with primary and secondary education. This variable is demeaned.	0.00 (0.09)	
Press circulation	Newspaper copies (at the province level) per 1000 inhabitants. This variable is demeaned.	0.00 (25.90)	Oficina de Justificación de la Difusión (Circulation Audit Bureau) www.introl.com
Tenure in office	Number of consecutive terms (including the current one) that a party has been in office. This variable is demeaned.	0.00 (2.03)	Regional election statistics obtained from web source (http://www. datos elecciones.com/parlamentos-autonomicos
Regional seat margin	Difference between the seat share of the parties in the regional government and the seat share of the main opposition parties in the previous regional election. This variable is demeaned.	0.00 (7.44)	
	Difference between the seat share of the ideological bloc of the regional government and the seat share of opposition's ideological bloc in the previous regional election. This variable is demeaned.	0.00 (9.67)	
	Difference between the seat share of the main party in the regional government and the seat share of the main opposition party in the previous regional election. This variable is demeaned.	0.00 (11.37)	

Table A.3: *Calculation of the forcing variable*

Explanation:

The forcing variable for our RDD is the *Regional incumbent's bloc vote margin*, computed as the ratio between the minimum number of votes needed for the ideological bloc of the regional incumbent to gain/lose the majority of seats in the local council and the total votes cast at the local elections. The computation of this measure is not straightforward and requires a consideration of the specific allocation system used to assign votes to seats, in this case the d'Hondt rule. Under this rule the votes for each party are divided by 1, 2, 3, 4, …, *N*, where *N* is the number of seats to be assigned. The resulting quotas or comparison numbers are ranked and *N* seats are allocated using this ranking.

We have developed an algebraic procedure to compute the *Regional incumbent's bloc vote margin* for each municipality in the sample[1]. Our procedure works by subtracting votes from the regional president's ideological bloc if it holds a majority at the local level, or adding votes if it does not. We make some initial assumptions regarding the migration of these votes. First, we assume that these votes either i) go to (come from) the abstention or ii) go to (come from) both the abstention and the parties in the opposition bloc. The formulation we present here is for the first approach and the formula used in the second approach and the Stata code are available upon request. Second, we assume that the votes lost by (added to) the regional incumbent's bloc are allocated between the parties belonging to this bloc in proportion to their initial vote share. Below we present the formulation used for the close election cases –i.e., the seat margin is –1 or +1. Derivations for non-close elections are available upon request[2].

Notation and definitions:

v_I^i & v_O^k: votes for parties *i* and *k*, from the regional incumbent's (*I*) and opposition's (*O*) blocs.
α_I^i & α_O^k: votes for parties *i* and k as a proportion of the votes for the bloc they belong to.
s_I^i & s_O^k: seats for parties *i* and *k*.
$c_I^i(s_I^i) = v_I^i/s_I^i$: comparison number for the last seat won by party *i*.
$c_I^i(s_I^i + 1) = v_I^i/(s_I^i + 1)$: comparison number for the next seat to be won by party *i*.
$c_I^{min}(s_I) = min_i(c_I^i(s_I^i))$: smallest comparison number for the last seat won by a party in *I*.
$c_I^{max}(s_I + 1) = min_i(c_I^i(s_I^i + 1))$: largest comparison number for the next seat to be won by a party in *I*.
$c_O^k(s_O^k)$, $c_O^k(s_O^k + 1)$, $c_O^{min}(s_O)$ and $c_O^{max}(s_O + 1)$: comparison numbers for the opposition's bloc.

Formulation:

If the regional incumbents's bloc holds a majority in the council and, so, a party from the opposition bloc has to win a seat, its comparison number for the next seat to be gained, $c_O^{max}(s_O + 1)$, must be larger than the comparison number for the last seat distributed to a party in the regional incumbent's bloc, once υ votes are subtracted from that bloc. The condition for party *z* in the opposition gaining a seat is:

$$c_I^{min*}(s_I) < c_O^{max}(s_O + 1) \qquad \text{[A.i]}$$

where $c_I^{min*}(s_I)$ is the smallest comparison number for the last seat originally gained by a party, say party *x*, among the parties from the regional incumbent's bloc once υ votes have been subtracted. *z* is the party that has the highest comparison number for the next seat to be gained among all the parties of the opposition bloc. Expression [A.i] can be rewritten as $v_I^x - \upsilon^x/s_I^x < v_O^x/(s_O^x + 1)$, where υ^x are the votes subtracted from party *x*.[3] Under the assumption that all the parties from the regional incumbent's bloc lose votes according to the votes originally cast, expression [A.i] determines that the total amount of votes that the regional incumbent's bloc has to lose to lose one seat is equal to:

$$\upsilon = (\upsilon^x/\alpha_I^x) + 1 \quad \text{where} \quad \upsilon^x = (c_I^{min}(s_I) - c_O^{max}(s_O + 1))\, s_I^x \qquad \text{[A.ii]}$$

If the regional incumbent's ideological bloc is in a minority in the local council, the votes to be added to the opposition bloc for a party, say part *y,* in this bloc to gain a seat are such that:

$$c_O^{min}(s_O) < c_I^{max*}(s_I + 1) \qquad \text{[A.iii]}$$

where $c_I^{max*}(s_I + 1)$ is the largest comparison number for the next seat to be gained by party *y* from the regional incumbent's bloc, once δ votes are added to the opposition bloc. Party *y* is the one that has the highest comparison number for the next seat to be gained. Expression [A.iii] can be re-written as:

$$\delta = (\delta^y/\alpha_I^y) + 1 \quad \text{where} \quad \delta^y = \left(c_O^{min}(s_O) - c_I^{max}(s_I + 1)\right)\left(s_I^y + 1\right) \qquad \text{[A.iv]}$$

Notes: (1) When the seat margin is larger than one, the procedure is iterated until there is a switch in the bloc holding the majority. Then, the final measure is an aggregation of votes needed to lose (win) all these seats. (2) Party *x* is such

that equation [A.i] and $\min_M(v^i_M - v^i)/s^i_M$ holds. Party x will typically be the party that won the last seat. If there is another party with a larger vote share that won a seat (but not the last one) this party should be the one considered.

Table A.4: *Numerical example*

	Opposition bloc		*Bloc in power*	
	Party 1	Party 2	Party 3	Party 4
Votes of party x	95	957	247	1333
Vote share of party x	0.04	0.36	0.09	0.51
Seats of party x	0	5	1	7
1	95.00	957.00	247.00	1333.00
2	47.50	478.50	123.50	666.50
3	31.67	319.00	82.33	444.33
4	23.75	239.25	61.75	333.25
5	19.00	191.40	49.40	266.60
6	15.83	159.50	41.17	222.17
7	13.57	136.71	35.29	190.43
8	11.88	119.63	30.88	166.63
9	10.56	106.33	27.44	148.11
10	9.50	95.70	24.70	133.30
11	8.64	87.00	22.45	121.18
12	7.92	79.75	20.58	111.08
13	7.31	73.62	19.00	102.54

Note: In this municipality there are 13 seats to be allocated amongst 4 parties. Figures in columns 3-5 are the so-called 'comparison numbers'. The value 47.50 in column 2 is obtained by dividing the total number of seats of party 1 (95) by the seat number (2). Cells highlighted in grey represent the number of seats held by each party.

Table A.5: *Example of how the Regional Incumbent's bloc vote margin is computed (votes lost by the bloc in power go to electoral abstention)*

	Stage 1: *Initial seat allocation*				Stage 2: *Seat allocation once δ_1 votes have been subtracted to the bloc in power*				Stage 3: *Seat allocation once $\delta_1 + \delta_2$ votes have been subtracted to the bloc in power*			
	Opposition bloc		*Bloc in power*		*Opposition bloc*		*Bloc in power*		*Opposition bloc*		*Bloc in power*	
	P1	P2	P3	P4	P1	P2	P3	P4	P1	P2	P3	P4
v^i	95	957	247	1333	95	957	207	1116	95	957	152	820
v^i/V	0.04	0.36	0.09	0.51	0.04	0.40	0.09	0.47	0.05	0.47	0.08	0.41
s^i	0	5	1	7	0	6	1	6	0	7	1	5
α_i			0.16	0.84			0.16	0.84				
1	95.00	957.00	247.00	1333.00	95.00	957.00	207.00	1116.00	95.00	957.00	152.00	820.00
2	47.50	478.50	123.50	666.50	47.50	478.50	103.50	558.00	47.50	478.50	76.00	410.00
3	31.67	319.00	82.33	444.33	31.67	319.00	69.00	372.00	31.67	319.00	50.67	273.33
4	23.75	239.25	61.75	333.25	23.75	239.25	51.75	279.00	23.75	239.25	38.00	205.00
5	19.00	191.40	49.40	266.60	19.00	191.40	41.40	223.20	19.00	191.40	30.40	164.00
6	15.83	159.50	41.17	222.17	15.83	159.50	34.50	186.00	15.83	159.50	25.33	136.67
7	13.57	136.71	35.29	190.43	13.57	136.71	29.57	159.43	13.57	136.71	21.71	117.14
8	11.88	119.63	30.88	166.63	11.88	119.63	25.88	139.50	11.88	119.63	19.00	102.50
9	10.56	106.33	27.44	148.11	10.56	106.33	23.00	124.00	10.56	106.33	16.89	91.11
10	9.50	95.70	24.70	133.30	9.50	95.70	20.70	111.60	9.50	95.70	15.20	82.00
11	8.64	87.00	22.45	121.18	8.64	87.00	18.82	101.45	8.64	87.00	13.82	74.55
12	7.92	79.75	20.58	111.08	7.92	79.75	17.25	93.00	7.92	79.75	12.67	68.33
13	7.31	73.62	19.00	102.54	7.31	73.62	15.92	85.85	7.31	73.62	11.69	63.08
distance			257.62				350.56					
δ_i			40	217			55	296				
Δ			δ_1=257				δ_2=351					

Note: For example, the distance to lose the last seat is computed as 257.62=[(190.43-159.5)·7/0.51]+1

Table A.6: *Example of how the Regional Incumbent's bloc vote margin is computed* (*votes lost go to abstention and to the opposition bloc*).

	Stage 1: *Initial seat allocation*				Stage 2: *Seat allocation once δ_1 votes have been subtracted to the bloc in power*				Stage 3: *Seat allocation once δ_1 + δ_2 votes have been subtracted to the bloc in power*			
	Opposition bloc		*Bloc in power*		*Opposition bloc*		*Opposition bloc*		*Bloc in power*		Bloc in power	
	P1	P2	P3	P4	P1	P2	P3	P4	P1	P2	P3	P4
v^i	95	957	247	1333	102	1028	222	1198	113	1144	181	979
v^i/V	0.04	0.36	0.09	0,51	0.04	0.39	0.09	0.49	0.04	0.42	0.08	0.45
s^i	0	5	1	7	0	6	1	6	0	7	1	5
α_i	0.09	0.91	0.16	0.84	0.09	0.91	0.16	0.84				
abstention	1096											
φ^O	0.49											
1	95.00	957.00	247.00	1333.00	102.00	1028.00	222.00	1198.00	113.00	1144.00	181.00	979.00
2	47.50	478.50	123.50	666.50	47.50	514.00	111.00	599.00	56.50	572.00	90.50	489.50
3	31.67	319.00	82.33	444.33	31.67	342.67	74.00	399.33	37.67	381.33	60.33	326.33
4	23.75	239.25	61.75	333.25	23.75	257.00	55.50	299.50	28.25	286.00	45.25	244.75
5	19.00	191.40	49.40	266.60	19.00	205.60	44.40	239.60	22.60	228.80	36.20	195.80
6	15.83	159.50	41.17	222.17	15.83	171.33	37.00	199.67	18.83	190.67	30.17	163.17
7	13.57	136.71	35.29	190.43	13.57	146.86	31.71	171.14	16.14	163.43	25.86	139.86
8	11.88	119.63	30.88	166.63	11.88	128.50	27.75	149.75	14.13	143.00	22.63	122.38
9	10.56	106.33	27.44	148.11	10.56	114.22	24.67	133.11	12.56	127.11	20.11	108.78
10	9.50	95.70	24.70	133.30	9.50	102.80	22.20	119.80	11.30	114.40	18.10	97.90
11	8.64	87.00	22.45	121.18	8.64	93.45	20.18	108.91	10.27	104.00	16.45	89.00
12	7.92	79.75	20.58	111.08	7.92	85.67	18.50	99.83	9.42	95.33	15.08	81.58
13	7.31	73.62	19.00	102.54	7.31	79.08	17.08	92.15	8.69	88.00	13.92	75.31
Distance			159.79				259.54					
δ_i			25	135			41	219				
δ			δ_1=160				δ_2=260					
μ_i	7	71			11	116						

Note: For example, the distance to lose the last seat is computed as 159.79=[(190.43-159.5)·7/0.84]·[1/(1+(7/(5+1))·(0.91/0.84)·0.49)]+1; μ_i are the votes transferred to the opposition block ($\mu_i = \alpha_i \times \delta_1 \times \varphi^O$).

Table A.7: *Calculation of Regional Electoral Competition proxies*

	Period	(i) *President's Coalition*	(ii) *Opposition's Coalition*	(iii) *Other parties in President's bloc*	(iv) *Other parties in Opposition's bloc*	(v) *Not Classified*	*Regional seat margin*		
							(vi) *President's v. Opposition's coalition*	(vii) *President's v. Opposition's bloc*	(viii) *Main two parties*
Andalucía	1998-99	PSOE (52), PA (4)	PP (40)	IU (13)			16/109=0.147	29/109=0.266	12/109=0.110
	2002-03	PSOE (52), PA (5)	PP (46)	IU (6)			11/109=0.101	17/109=0.156	6/109=0.055
	2006-07	PSOE (61)	PP (37)	IU (6), PA (5)			24/109=0.220	35/109=0.321	24/109=0.220
Aragon	1998-99	PP (27), PAR (14)	PSOE (19), IU (5), CHA (2)				15/67=0.223	15/67=0.223	8/67=0.119
	2002-03	PSOE (23), PAR (10), IU (1)	PP (28)	CHA (5)			6/67=0.089	11/67=0.164	-5/67=-0.074
	2006-07	PSOE (27), PAR (8)	PP (22)	IU (1), CHA (9)			13/67=0.194	23/67=0.343	5/67=0.074
Asturias	1998-99	PP (21)	PSOE (17)		IU (6), PAS (1)		4/45=0.089	-3/45=-0.067	4/45=0.089
	2002-03	PSOE (24), IU (3)	PP (15)			URAS (3)	12/45=0.267	12/45=0.267	9/45=0.200
	2006-07	PSOE (22), IU (4)	PP (19)				7/45=0.156	7/45=0.156	3/45=0.067
Baleares	1998-99	PP (30)	PSOE (16), PSM-IU-EV (10)	AIPF (1)		UM (2)	4/59=0.068	5/59=0.084	14/59=0.237
	2002-03	PSOE (13), PACTE-PSM -EUEV-COP (15), UM (3)	PP (28)				3/59=0.051	3/59=0.051	-13/59=-0.220
	2006-07	PP (29), UM (3)	PSOE (15), PACTE-PSM-EUEV (11)	AIPF (1)			6/59=0.102	7/59=0.119	14/59=0.237
Canarias	1998-99	CC (21), PP (18)	PSOE (16)	AHI (1)		PCN (4)	23/60=0.383	24/60=0.4	5/60=0.083
	2002-03	CC (24), PP (15)	PSOE (19)	AHI (2)			20/60=0.333	22/60=0.367	5/60=0.083
	2006-07	CC (23), PP (17)	PSOE (17)			FNC (3)	23/60=0.383	23/60=0.383	6/60=0.1
Cantabria	1998-99	PP (13), PRC (6), UPCA (7)	PSOE (10), IU (3)				13/39=0.333	13/39=0.333	3/39=0.077
	2002-03	PP (19), PRC (6)	PSOE (14)				11/39=0.282	11/39=0.282	5/39=0.128
	2006-07	PSOE (13), PRC (8)	PP (18)				3/39=0.077	3/39=0.077	-5/39=-0.128

Notes: (1) Party acronyms in capital letters (see Table A.8 for an explanation). (2) In red: Left-wing parties; In blue: right-wing parties; In green: Parties not classified (either because their ideology is ambiguous or because they have also been supporting, or are expected to support, both right- or left-wing presidents; Underlined: regionally based parties. (3) In parentheses: number of seats held by the party. (4) (i) President's coalition: parties supporting the regional president in the parliament; (ii) Opposition's coalition: parties belonging to a different ideological bloc to that of the regional president and that support, with a high degree of likelihood, the second party's candidate; (iii) Other parties in the President's bloc: rest of the parties belonging to the same ideological bloc as that of the president; (iv) Other parties in the Opposition's bloc: rest of the parties belonging to a different ideological bloc to that of the president; (v) Not classified: regional parties not belonging to the president's coalition but that cannot be classified in one of the two ideological blocs, either because their ideology is ambiguous, or because they entered coalitions with parties in both blocs in different elections, or because of specific issues that impede them entering into coalition agreements with some or all of the parties (e.g., conflictive scissions from other parties, parties with extreme positions on other issues as e.g., secessionism). (5) (vi) *President's v. Opposition's coalition:* seats of the President's coalition (sum of the seats of the parties in column (i)) less seats of the Opposition's coalition (sum of the seats of the parties in column (ii)) divided by the total number of seats in the regional parliament (vii) *President's v. Opposition's bloc:* seats of the presidents' coalition (i) + seats of other parties in her bloc (iii) less seats in the oppositions' coalition (ii) + seats of other parties in that bloc (iv), divided by the total number of seats; (viii) Two main parties: difference between the seats of the most voted party in (i) and the most voted party in (ii), divided by the total number of seats.

Table A.7 (continued)

	Period	(i) *President's Coalition*	(ii) *Opposition's Coalition*	(iii) *Other parties in President's bloc*	(iv) *Other parties in Opposition's bloc*	(v) *Not Classified*	*Regional seat margin*		
							(vi) *President's v. Opposition's coalition*	(vii) *President's v. Opposition's bloc*	(viii) *Main two parties*
Castilla-La Mancha	1998-99	PSOE (24)	PP (22)	IU (1)			2/47=0.042	3/47=0.063	2/47=0.042
	2002-03	PSOE (26)	PP (21)				5/47=0.106	5/47=0.106	5/47=0.106
	2006-07	PSOE (29)	PP (18)				11/47=0.234	11/47=0.234	11/47=0.234
Castilla-León	1998-99	PP (50)	PSOE (27), IU (5)			UPL (2)	18/84=0.214	18/84=0.214	23/84=0.274
	2002-03	PP (48)	PSOE (30), IU (1)		TC (1)	UPL (3)	17/83=0.205	16/83=0.193	18/83=0.217
	2006-07	PP (48)	PSOE (32)			UPL (2)	16/82=0.195	16/82=0.195	16/82=0.195
Catalunya	1998-99	CiU (60)	PSOE (34), IU (11)	PP (17)	ERC (13)		15/135=0.111	19/135=0.141	26/135=0.192
	2002-03	CiU (56), PP (12)	PSOE (52), IU (3)		ERC (12)		13/135=0.096	1/135=0.007	4/135=0.029
	2006-07	PSOE (42), IU (9), ERC (23)	CiU (46), PP (15)				13/135=0.096	13/135=0.096	-4/135=-0.030
Extremadura	1998-99	PSOE (31)	PP (27)	IU (6)		CE (1)	4/65=0.061	10/65=0.153	4/65=0.061
	2002-03	PSOE (34)	PP (28)	IU (3)			6/65=0.092	9/65=0.138	6/65=0.092
	2006-07	PSOE (36)	PP (26)	IU (3)			10/65=0.154	13/65=0.200	10/65=0.154
Galicia	1998-99	PP (42)	PSOE (18), BNG (15)				9/75=0.12	9/75=0.12	24/75=0.320
	2002-03	PP (41)	PSOE (17), BNG (17)				7/75=0.093	7/75=0.093	24/75=0.320
	2006-07	PSOE (25), BNG (13)	PP (37)				1/75=0.013	1/75=0.013	-12/75=-0.16
Madrid	1998-99	PP (54)	PSOE (32), IU (17)				5/103=0.048	5/103=0.048	22/103=0.213
	2002-03	PP (55)	PSOE (39), IU (8)				8/102=0.078	8/102=0.078	16/102=0.157
	2006-07	PP (57)	PSOE (45), IU (9)				3/111=0.027	3/111=0.027	12/111=0.108
Murcia	1998-99	PP (26)	PSOE (15), IU (4)				7/45=0.155	7/45=0.155	11/45=0.244
	2002-03	PP (26)	PSOE (18), IU (1)				7/45=0.155	7/45=0.155	8/45=0.178
	2006-07	PP (28)	PSOE (16), IU (1)				11/45=0.244	11/45=0.244	12/45=0.267
Rioja (La)	1998-99	PP (17)	PSOE (12), IU (2)	PR (2)			3/33=0.091	5/33=0.151	5/33=0.151
	2002-03	PP (18)	PSOE (13)	PR (2)			5/33=0.151	7/33=0.212	5/33=0.151
	2006-07	PP (17)	PSOE (14)	PR (2)			3/33=0.091	5/33=0.151	3/33=0.091
Valencia	1998-99	PP (42), UV (5)	PSOE (32), IU (10)				5/89=0.056	5/89=0.056	10/89=0.112
	2002-03	PP (49)	PSOE (35), IU (5)				9/89=0.101	9/89=0.101	14/89=0.157
	2006-07	PP (48)	PSOE (35), IU (6)				7/89=0.079	7/89=0.079	13/89=0.146

Table A.8: *Political parties*

Acronym	*Party Name*	*Ideology*	*Representation in the sample*	
			% *Regional presidents*	% *Regional seats*
PSOE	Partido Socialista Obrero Español	Socialism	17/45=38%	1193/3169=37.66%
PA	Partido Andalucista	Nationalism, progressiveness	0%	14/3169=0.44%
PP	Partido Popular (People's Party)	Conservative liberalism	23/45=51%	1331/3169=42.32%
IU	Izquierda Unida	Former Communist Party	0%	153/3169=4.83%
PAR	Partido Aragonés Regionalista	Nationalism, center	0%	32/3169=1.01%
CHA	Chunta Aragonesista	Republicanism, nationalism socialdemocracy	0%	16/3169=0.50%
URAS	Unión Renovadora Asturiana	Regionalism, conservatism	0%	3/3169=0.09%
PAS	Partíu Asturianista	Nationalism, social democracy	0%	1/3169=0.03%
PSM-IU-EV	Partit Socialista de Mallorca /Menorca – Esquerra Unida	Coalition between the socialist party in Mallorca and Menorca and the former communist party	0%	10/3169=0.32%
PACTE-PSM -EUEV-COP	Pacte Progressista – Partit Socialista de Mallorca/Menorca – Esquerra Unida	Coalition between the socialist party in Mallorca and Menorca and several left-wing parties	0%	26/3169=0.82%
UM	Unió Mallorquina	Liberalism, regionalism, center-right	0%	8/3169=0.25%
AIPF	Agrupació Independent Popular de Formentera	Conservatism, center-right	0%	2/3169=0.06%
CC	Coalición Canaria	Nationalism, conservatism	3/45= 7%	68/3169=2.15%
AHI	Agrupación Herreña Independiente	Nationalism, close to Coalición Canaria with whom they ran jointly in some elections	0%	3/3169=0.09%
PNC	Partido Nacionalista Canario	Nationalism	0%	4/3169=0.13%
FNC	Federación Nacionalista Canaria	Nationalism	0%	3/3169=0.09%
PRC	Partido Regionalista de Cantabria	Regionalism, social democracy	0%	20/3169=0.63%
UPCA	Unión para el Progreso de Cantabria	Regionalism. Founded by former People's Party's deputies	0%	7/3169=0.22%
TC	Tierra Comunera	Nationalism, environmentalism, progressiveness	0%	1/3169=0.03%
UPL	Unión del Pueblo Leonés	Regionalism	0%	7/3169=0.22%
CiU	Convergència i Unió	Nationalism, liberalism, Christian Democrats	2/45 = 4%	162/3169=5.11%
ERC	Esquerra Republicana de Catalunya	Republicanism, secessionism	0%	48/3169=1.51%
CE	Coalición Extremeña	Regionalism, social democracy	0%	1/3169=0.03%
BNG	Bloque Nacionalista Galego	Nationalism, socialism	0%	45/3169=1.42%
PR	Partido Riojano	Progressiveness, regionalism	0%	6/3169=0.19%
UV	Unión Valenciana	Regionalism, conservatism	0%	5/3169=0.16%

A.III Additional Tables and Figures

Table A.9: DiD *placebo test.*

	(i) DiD	(ii) DiD	(iii) DiD	(iv) DiD
a	69.84	70.08	53.17	58.71
	(6.67)***	(6.64)***	(5.77)***	(6.22)***
a_{t+1}	-4.77	-4.85	--.--	--.--
	(-0.96)	(-0.95)		
a_{t-1}	--.--	--.--	-4.05	-7.50
			(-0.28)	(-0.51)
R^2	0.23	0.23	0.08	0.10
Terms	1st & 2nd	1st & 2nd	2nd & 3rd	2nd & 3rd
Controls	NO	YES	NO	YES
Observations	3,462	3,462	3,462	3,462

Notes: (1) 1st term refers to years 1995-99, 2nd to 2000-03, and 3rd to 2004-07. (2) The dependent variable is capital transfers per capita granted to municipality *i* over the two years prior to local elections. (3) All coefficients are difference-in-differences estimates. (4) Explanatory variable: a= alignment dummy, a_{t+1}= lead alignment dummy, and a_{t-1}= lag alignment dummy. (5) Control variables are the same as in Table 1. (8) Municipality and time effects included in all columns. (8) *t*-statistic in parentheses, robust standard errors clustered at the municipality level; ***, ** & * = statistically significant at the 99%, 95% and 90% levels.

Table A.10: *Robustness checks. Alternative alignment measures.*

	(i) RD	(ii) RD	(iii) RD	(iv) RD	(v) RD	(vi) DiD	(vii) DiD	(viii) DiD	(ix) DiD
	Partner Alignment	*Bloc Alignment*	*No local Parties*	*No regional Parties*	*Alternative Forcing var.*	*Partner Alignment*	*Bloc Alignment*	*No local Parties*	*No regional Parties*
a	78.60 (5.84)***	85.11 (6.30)***	105.24 (7.79)***	86.39 (6.21)***	85.73 (6.33)***	52.72 (12.94)***	55.00 (13.26)***	58.45 (11.89)***	51.22 (12.38)***
R^2	0.26	0.28	0.27	0.29	0.27	0.26	0.26	0.27	0.28
a	82.67 (5.63)***	91.16 (6.37)***	107.21 (8.20)***	92.97 (5.95)***	92.22 (7.01)***	53.76 (4.02)***	54.07 (4.03)***	59.58 (4.33)***	54.89 (3.86)***
a × Regional competition	3.74 (2.00)**	23.28 (2.19)**	4.62 (2.37)**	6.25 (3.33)***	4.89 (2.94)***	1.41 (1.79)*	1.26 (1.72)*	1.55 (1.64)*	2.03 (2.06)**
R^2	0.26	0.27	0.28	0.29	0.27	0.26	0.26	0.19	0.20
Observations	6,731	6,796	4,564	5,651	6,056	6,731	6,796	4,564	5,651
Region × Term fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: (1) The estimates correspond to the second stage of 2SLS regressions. (2) All equations have been estimated using a second-order polynomial of the forcing variable and a linear polynomial of the *Regional Seat Share*, and the regressions include the same controls as in previous tables. (3) Partner alignment = the regional and the local government are considered to be aligned if the mayor and/or the main partner of a coalition belong to the same party; No local parties = municipalities where local parties (who only run in local elections and have no clear ideological position) obtaining representation are excluded from the analysis; No regional parties = municipalities where regional parties not classified in Table A.5 in any of the ideological blocs obtaining representation are excluded from the analysis; Alternative distance = distance to change in seat majority computed allowing migration of votes between parties.

Table A.11: *Robustness checks. Alternative measures of the Regional seat margin*

	(i)	(i)	(iii)	(iv)	(v)	(vi)
	RD	RD	RD	DiD	DiD	DiD
	(a) *President's v. Opposition's blocs*					
a	104.23	99.87	95.83	57.40	58.02	56.12
	(4.79)***	(5.02)***	(6.12)***	(3.97)***	(4.03)***	(3.81)***
a × *Regional seat margin*	4.83	3.97	3.04	2.06	1.71	1.94
	(3.15)***	(2.97)***	(2.53)**	(2.11)**	(1.82)*	(2.14)**
Regional seat margin	0.09	0.33	--.--	-0.88	-0.55	--.--
	(0.07)	(0.30)		(-0.49)	(-0.50)	
R^2	0.04	0.11	0.27	0.19	0.20	0.24
	(b) *Main two parties*					
a	104.74	100.49	95.01	55.86	55.80	54.20
	(5.96)***	(6.31)***	(6.71)***	(3.61)***	(3.72)***	(3.61)***
a × *Regional seat margin*	0.59	1.28	1.49	1.53	1.18	1.19
	(0.32)	(0.75)	(0.95)	(1.66)	(1.33)	(1.46)
Regional seat margin	0.38	0.84	--.--	-0.29	-0.04	--.--
	(0.34)	(0.76)		(-0.48)	(-0.06)	
R^2	0.05	0.12	0.27	0.19	0.20	0.24
Region × Term fixed effects	NO	NO	YES	NO	NO	YES
Controls	NO	YES	YES	NO	YES	YES
Observations	6,056	6,056	6,056	6,056	6,056	6,056

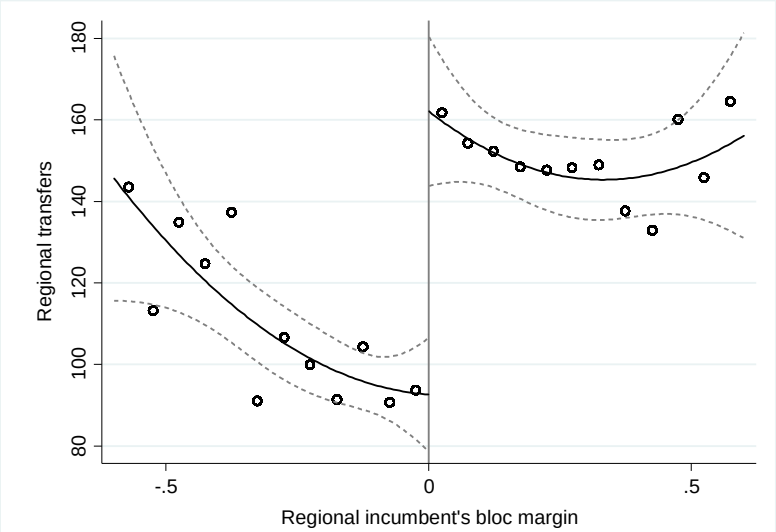
Notes: (1) 1995-99, 2000-03 and 2004-07 terms. (2) The dependent variable is capital transfers per capita granted to municipality *i* over the two years prior to local elections. (3) Coefficients in columns (i)-(iii) correspond to RD estimates and those of columns (iv)-(vi) are difference-in-differences estimates. (4) Explanatory variable: Alignment dummy *a*; in columns (i)-(iii) *a* instrumented with *d* (see Table 1); columns (i)-(iii) include interactions between *a* and the *Regional competition* variable, and a second-order polynomial of the forcing variable fitted separately on either side of the zero threshold using the whole sample and also fully interacted with the *Regional competition* variable. (5) In Panel (a) the Regional seat margin is computed as the difference between the seat share of the president's party minus the seat share of the main opposition party in the last regional election (this variable is demeaned); in Panel (b) the Regional seat share is computed as the difference between the seats hold by the ideological bloc of the president's party minus those of the other ideological bloc; see Tables A.4 and A.5 for details on the calculation of these variables. (6) The control variables are the same as in Table 1. (7) Time dummies are included in columns (iv) and (v). (8) *t*-statistic in parentheses, robust standard errors clustered at the regional level; ***, ** & * = statistically significant at the 99%, 95% and 90% levels.

Table A.12: *Covariates' discontinuity tests*

	Polynomial order								
	1			2			3		
	Coef.	*t-stat.*	AIC	*Coef.*	*t-stat.*	AIC	*Coef.*	*t-stat.*	AIC
Debt burden	-0.00	(-0.60)	-14574	-0.00	(-0.66)	-14570	-0.00	(0.44)	-14567
Property tax rate	-0.01	(-1.16)	-6507	-0.01	(-1.15)	-6503	-0.01	(-1.12)	-6502
Property value	-0.95	(-1.18)	53243	-1.60	(-1.56)	53245	-1.42	(-0.97)	53249
Population	6,234.97	(1.04)	153991	9,008.06	(1.00)	153994	7,887.25	(0.74)	153998
% Old	0.00	(1.64)	-19766	0.00	(0.96)	-19762	0.01	(2.36)**	-19765
% Young	-0.00	(-1.60)	-24514	-0.00	(-0.26)	-24513	-0.00	(-1.59)	-24516
% Immigrant	0.00	(1.03)	-25023	0.00	(0.04)	-25023	-0.00	(-0.17)	-25020
% Unemployed	0.00	(0.08)	-19467	0.00	(0.63)	-19464	0.00	(0.37)	-19460
Income indicator	-0.00	(-0.90)	-13018	-0.01	(-1.11)	-13030	0.00	(0.25)	-13029
Population density	-19.19	(-0.35)	103721	25.39	(0.40)	103721	11.94	(0.17)	6,056
Local party	-0.01	(-0.88)	-7784	-0.02	(-2.93)***	-7802	-0.00	(-0.21)	-7829
Concurrent elections	0.06	(0.16)	8338	0.06	(0.12)	8342	0.09	(2.13)*	8339
Single province	0.01	(0.40)	3741	0.00	(0.15)	3743	-0.00	(-0.20)	3742
Regional revenues p.c	9.18	(0.21)	96567	28.25	(0.60)	96569	-46.28	(-0.72)	96568
Regional debt	-0.06	(-0.23)	32653	0.08	(0.17)	32653	-0.14	(-0.36)	32653
Municipal density (regional)	-36.35	(-3.24)***	76823	-16.20	(-1.07)	76812	-19.85	(-1.30)	76813
Education	0.004	(0.80)	-8775	0.002	(0.42)	-8772	0.01	(1.81)*	-8777
Press circulation p.c.	0.14	(0.08)	56535	-0.39	(-0.22)	56533	-1.71	(-0.89)	56536
Tenure in office	-0.06	(-0.26)	25423	0.05	(0.21)	25421	-0.06	(-0.37)	25424

Notes: (1) Full sample used in the estimation. (2) Reduced form estimation: OLS with spline polynomial of order 1, 2 or 3 fitted separately to both sides of the threshold. (3) AIC= Akaike Information Criterion. (4) See Table A.1. for description of variables.

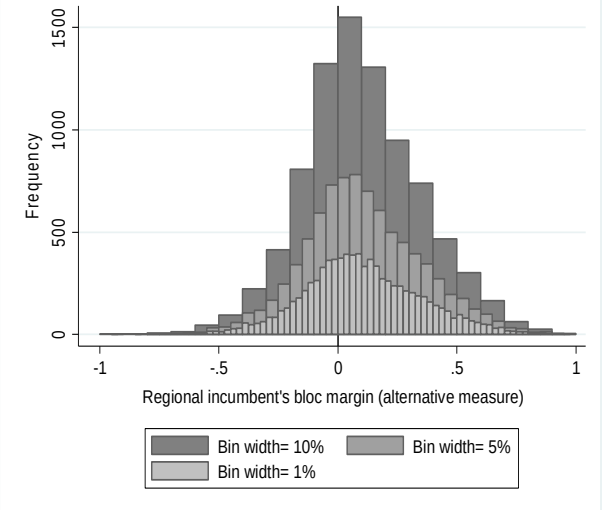
Figure A.1: RD *with the alternative forcing variable.*



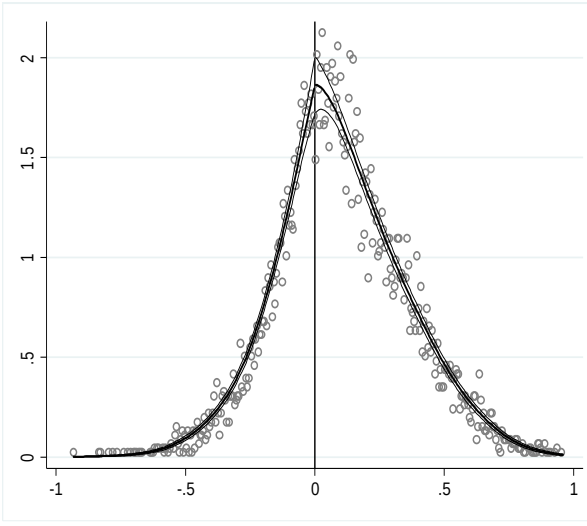
Notes: (1) Regional transfers = Capital transfers per capita from the Regional to the Local government during the last two years of the 1995-99, 2000-03, and 2004-07 municipal terms. (2) The dots are bin averages of 5% bin size. (3) The solid line represents a second-order polynomial regression. (4) The dashed lines are 95% confidence intervals. (5) Vote margin computed assuming vote migration towards both abstention and opposition's ideological bloc.

Figure A.2: *Histogram and McCrary of the Alternative forcing variable*

a) *Histogram*



b) *McCrary test*



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García-Quevedo, J. (IEB), **Pellegrino, G.** (IEB), **Vivarelli, M.**
"The determinants of YICs' R&D activity"
(Desembre 2011)

XREAP2011-21
González-Val, R. (IEB), **Olmo, J.**
"Growth in a Cross-Section of Cities: Location, Increasing Returns or Random Growth?"
(Desembre 2011)

XREAP2011-22
Gombau, V. (GRIT), **Segarra, A.** (GRIT)
"The Innovation and Imitation Dichotomy in Spanish firms: do absorptive capacity and the technological frontier matter?"
(Desembre 2011)

2012

XREAP2012-01
Borrell, J. R. (GiM-IREA), **Jiménez, J. L.**, **García, C.**
"Evaluating Antitrust Leniency Programs"
(Gener 2012)

XREAP2012-02
Ferri, A. (RFA-IREA), **Guillén, M.** (RFA-IREA), **Bermúdez, Ll.** (RFA-IREA)
"Solvency capital estimation and risk measures"
(Gener 2012)

XREAP2012-03
Ferri, A. (RFA-IREA), **Bermúdez, Ll.** (RFA-IREA), **Guillén, M.** (RFA-IREA)
"How to use the standard model with own data"
(Febrer 2012)

XREAP2012-04
Perdiguero, J. (GiM-IREA), **Borrell, J.R.** (GiM-IREA)
"Driving competition in local gasoline markets"
(Març 2012)

XREAP2012-05
D'Amico, G., **Guillen, M.** (RFA-IREA), Manca, R.
"Discrete time Non-homogeneous Semi-Markov Processes applied to Models for Disability Insurance"
(Març 2012)

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Bové-Sans, M. A. (GRIT), Laguado-Ramírez, R.
"Quantitative analysis of image factors in a cultural heritage tourist destination"
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Tello, C. (AQR-IREA), **Ramos, R.** (AQR-IREA), **Artís, M.** (AQR-IREA)
"Changes in wage structure in Mexico going beyond the mean: An analysis of differences in distribution, 1987-2008"
(Maig 2012)

XREAP2012-08
Jofre-Monseny, J. (IEB), **Marín-López, R.** (IEB), **Viladecans-Marsal, E.** (IEB)
"What underlies localization and urbanization economies? Evidence from the location of new firms"
(Maig 2012)

XREAP2012-09
Muñiz, I. (GEAP), **Calatayud, D.**, **Dobaño, R.**
"Los límites de la compacidad urbana como instrumento a favor de la sostenibilidad. La hipótesis de la compensación en Barcelona medida a través de la huella ecológica de la movilidad y la vivienda"
(Maig 2012)

XREAP2012-10
Arqué-Castells, P. (GEAP), **Mohnen, P.**
"Sunk costs, extensive R&D subsidies and permanent inducement effects"
(Maig 2012)

XREAP2012-11
Boj, E. (CREB), **Delicado, P.**, **Fortiana, J**., **Esteve, A.**, **Caballé, A.**
"Local Distance-Based Generalized Linear Models using the dbstats package for R"
(Maig 2012)

XREAP2012-12
Royuela, V. (AQR-IREA)
"What about people in European Regional Science?"
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Osorio A. M. (RFA-IREA)**, Bolancé, C.** (RFA-IREA), **Madise, N.**
"Intermediary and structural determinants of early childhood health in Colombia: exploring the role of communities"
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Miguelez. E. (AQR-IREA)**, Moreno, R.** (AQR-IREA)
"Do labour mobility and networks foster geographical knowledge diffusion? The case of European regions"
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Teixidó-Figueras, J. (GRIT)**, Duró, J. A.** (GRIT)
"Ecological Footprint Inequality: A methodological review and some results"
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Varela-Irimia, X-L. (GRIT)
"Profitability, uncertainty and multi-product firm product proliferation: The Spanish car industry"
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Duró, J. A. (GRIT), **Teixidó-Figueras, J.** (GRIT)
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Manresa, A. (CREB), **Sancho, F.**
"Leontief versus Ghosh: two faces of the same coin"
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Alemany, R. (RFA-IREA), **Bolancé, C.** (RFA-IREA), **Guillén, M.** (RFA-IREA)
"Nonparametric estimation of Value-at-Risk"
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Herrera-Idárraga, P. (AQR-IREA), **López-Bazo, E.** (AQR-IREA), **Motellón, E.** (AQR-IREA)
"Informality and overeducation in the labor market of a developing country"
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Di Paolo, A. (AQR-IREA)
"(Endogenous) occupational choices and job satisfaction among recent PhD recipients: evidence from Catalonia"
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2013

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Segarra, A. (GRIT), **García-Quevedo, J.** (IEB), **Teruel, M.** (GRIT)
"Financial constraints and the failure of innovation projects"
(Març 2013)

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Osorio, A. M. (RFA-IREA), **Bolancé, C.** (RFA-IREA), Madise, N., Rathmann, K.
"Social Determinants of Child Health in Colombia: Can Community Education Moderate the Effect of Family Characteristics?"
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Teixidó-Figueras, J. (GRIT), **Duró, J. A.** (GRIT)
"The building blocks of international ecological footprint inequality: a regression-based decomposition"
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Salcedo-Sanz, S., **Carro-Calvo, L.**, **Claramunt, M.** (CREB), **Castañer, A.** (CREB), **Marmol, M.** (CREB)
"An Analysis of Black-box Optimization Problems in Reinsurance: Evolutionary-based Approaches"
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Alcañiz, M. (RFA), **Guillén, M.** (RFA), **Sánchez-Moscona, D.** (RFA), **Santolino, M.** (RFA), **Llatje, O., Ramon, Ll.**
"Prevalence of alcohol-impaired drivers based on random breath tests in a roadside survey"
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Matas, A. (GEAP & IEB), **Raymond, J. Ll.** (GEAP & IEB), **Roig, J. L.** (GEAP)
"How market access shapes human capital investment in a peripheral country"
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Di Paolo, A. (AQR-IREA), **Tansel, A.**
"Returns to Foreign Language Skills in a Developing Country: The Case of Turkey"
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Fernández Gual, V. (GRIT), **Segarra, A.** (GRIT)
"The Impact of Cooperation on R&D, Innovation andProductivity: an Analysis of Spanish Manufacturing and Services Firms"
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Bahraoui, Z. (RFA); **Bolancé, C.** (RFA); **Pérez-Marín. A. M.** (RFA)
"Testing extreme value copulas to estimate the quantile"
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2014

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Solé-Auró, A. (RFA), **Alcañiz, M.** (RFA)
"Are we living longer but less healthy? Trends in mortality and morbidity in Catalonia (Spain), 1994-2011"
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Teixidó-Figueres, J. (GRIT), **Duro, J. A.** (GRIT)
"Spatial Polarization of the Ecological Footprint distribution"
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Cristobal-Cebolla, A.; Gil Lafuente, A. M. (RFA), **Merigó Lindhal, J. M.** (RFA)
"La importancia del control de los costes de la no-calidad en la empresa"
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Castañer, A. (CREB); **Claramunt, M.M.** (CREB)
"Optimal stop-loss reinsurance: a dependence analysis"
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Di Paolo, A. (AQR-IREA); **Matas, A.** (GEAP); **Raymond, J. Ll.** (GEAP)
"Job accessibility, employment and job-education mismatch in the metropolitan area of Barcelona"
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Di Paolo, A. (AQR-IREA); **Mañé, F.**
"Are we wasting our talent? Overqualification and overskilling among PhD graduates"
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Segarra, A. (GRIT); **Teruel, M.** (GRIT); **Bové, M. A.** (GRIT)
"A territorial approach to R&D subsidies: Empirical evidence for Catalonian firms"
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Ramos, R. (AQR-IREA); **Sanromá, E.** (IEB); **Simón, H.**
"Public-private sector wage differentials by type of contract: evidence from Spain"
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Bel, G. (GiM-IREA); **Bolancé, C.** (Riskcenter-IREA); **Guillén, M.** (Riskcenter-IREA)**; Rosell, J.** (GiM-IREA)
"The environmental effects of changing speed limits: a quantile regression approach"
(Desembre 2014)

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XREAP2015-01
Bolance, C. (Riskcenter-IREA); **Bahraoui, Z.** (Riskcenter-IREA), **Alemany, R.** (Risckcenter-IREA)
"Estimating extreme value cumulative distribution functions using bias-corrected kernel approaches"
(Gener 2015)

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Ramos, R. (AQR-IREA); **Sanromá, E.** (IEB), **Simón, H.**
"An analysis of wage differentials between full- and part-time workers in Spain"
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Cappellari, L.; **Di Paolo, A.** (AQR-IREA)
"Bilingual Schooling and Earnings: Evidence from a Language-in-Education Reform"
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Álvarez-Albelo, C. D., Manresa, A. (CREB)**, Pigem-Vigo, M.** (CREB)
"Growing through trade: The role of foreign growth and domestic tariffs"
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Caminal, R., Di Paolo, A. (AQR-IREA)
Your language or mine?
(Novembre 2015)

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Choi, H. (AQR-IREA)**, Choi, A.** (IEB)
When one door closes: the impact of the hagwon curfew on the consumption of private tutoring in the Republic of Korea

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XREAP2016-01
Castañer, A. (CREB, XREAP); **Claramunt, M M.** (CREB, XREAP), **Tadeo, A.**, **Varea, J.** (CREB, XREAP)
Modelización de la dependencia del número de siniestros. Aplicación a Solvencia II
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What is the role of innovation strategies? Evidence from Spanish firms
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Jofre-Monseny, J. (IEB, XREAP), **Silva, J. I.**, **Vázquez-Grenno, J.** (IEB, XREAP)
Local labor market effects of public employment
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Garcia-López, M. A. (IEB, XREAP), **Hemet, C.**, **Viladecans-Marsal, E.** (IEB, XREAP)
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Vayá, E. (AQR-IREA, XREAP)**, García, J. R.** (AQR-IREA, XREAP)**, Murillo, J.** (AQR-IREA, XREAP)**, Romaní, J.** (AQR-IREA, XREAP)**, Suriñach, J.** (AQR-IREA, XREAP)**,**
Economic impact of cruise activity: the port of Barcelona
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Ayuso, M. (Riskcenter, XREAP)**, Guillen, M.** (Riskcenter, XREAP)**, Nielsen, J. P.**
Improving automobile insurance ratemaking using telematics: incorporating mileage and driver behaviour data
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Ruíz, A. (GEAP, XREAP), **Matas, A.** (GEAP, XREAP), **Raymond, J. Ll.**
How do road infrastructure investments affect the regional economy? Evidence from Spain
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Bernardo, V. (GiM-IREA, XREAP); **Fageda, X.** (GiM-IREA, XREAP)
Globalization, long-haul flights and inter-city connections
(Octubre 2017)

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Di Paolo, A. (AQR-IREA, XREAP); **Tansel, A.**
Analyzing Wage Differentials by Fields of Study: Evidence from Turkey
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XREAP2017-03
Melguizo, C. (AQR-IREA, XREAP); **Royuela, V.** (AQR-IREA, XREAP)
What drives migration moves across urban areas in Spain? Evidence from the great recession
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Boonen, T.J., Guillén, M. (RISKCENTER, XREAP); **Santolino, M.** (RISKCENTER, XREAP)
Forecasting compositional risk allocations
(Octubre 2017)

XREAP2017-05
Curto-Grau, M. (IEB, XREAP)**, Solé-Ollé, A.** (IEB, XREAP)**, Sorribas-Navarro, P.** (IEB, XREAP)
Does electoral competition curb party favoritism?
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