

**THE EFFECT OF POLITICAL ALIGNMENT ON TRANSFERS
TO PORTUGUESE MUNICIPALITIES¹**

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ABSTRACT

I use financial data of Portuguese municipalities (1992-2005) to investigate if political alignment between central and local governments brings financial benefit to local governments. I use regression discontinuity design, in order to distinguish between generally partisan transfers and the effect of political alignment per se. Municipalities aligned with the central government receive 19% more targetable transfers than unaligned municipalities. I test for electoral motivation of this transfer bias: extra transfers increase the vote share of incumbents in local elections for one of the two Portuguese major parties; however, municipal incumbency does not lead to better results in national elections.

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1 – INTRODUCTION

Two hypotheses have shaped the current thinking on distributive politics, the swing-voter hypothesis that constituencies where more voters are nearly indifferent between parties receive more funding from the central government (Linbeck and Weibull 1987) and the partisan hypothesis that central government transfers more funds to constituencies where the party in power enjoys significant and certain support, especially if politicians are risk-averse (Cox and McCubbins 1986). Empirical research in distributive politics has generally interpreted these ideas as concerning the relationship between vote share of governing parties and transfers to local governments. In this paper, I examine another hypothesis: the possibility that political alignment per se (between national and local governments) increases transfers to local governments. The difference between this hypothesis and the standard partisan hypothesis is that central government politicians are not simply trying to reward the constituents of areas where they receive significant support, but instead are focused on funding areas where they have political control, even if their party won the local election by just one vote. There are several reasons to think that politicians in control of central government will act in this way. One possible explanation is that central government leaders want to ensure that local leaders are loyal (loyalty of local party leaders is very important to ensure national party leaders are re-appointed) and motivated in reaching the party's goals (motivated local party leaders may be an important asset in the campaign effort for national elections). Transferring more funds to the aligned local governments may increase the gratitude of local leaders in two ways: having more funds might help local leaders get re-elected, as the extra money allows them to present more accomplishments to their constituents, and having more funds at their disposal can by itself

increase the happiness of politicians.² A related possibility is that success in local elections can contribute to success in national elections. Even if national party leaders do not care about local party leaders and their support, they might still want to increase their likelihood of reelection, if winning local elections provides momentum for the party in the national elections. I will explore these possible reasons for benefiting aligned local governments in the later sections of this paper.

Portugal is a good setting for this research for several reasons. First, Portugal has a level of local government – the municipality – that simultaneously manages a substantial share of the public resources (close to 10% of all public expenditures in Portugal) and is directly elected by local voters. Second, Portuguese elections are highly partisan both at the central and local level, and thus it is easy to ascertain the political alignment between local and central government leaders. Finally, to the best of my knowledge, an econometric study of distributive politics has never been done for the Portuguese case.

Methodologically, this paper is different from the previous empirical literature in distributive politics due to my use of regression discontinuity design. In the absence of an effect of political alignment per se, the relation between transfers and vote differential should be smooth, continuous and increasing, if partisan theories of distributive politics are to be believed, or inverse U-shaped, with a maximum at 0% vote margin, if swing vote theories are correct. But if political alignment between the local governments and the central government plays a crucial role in the transfer decision of central government, there should be a discontinuity in transfers between municipalities where the party in power narrowly loses the municipal election and municipalities where the party in power narrowly wins. Therefore, regression discontinuity design is crucial to distinguish between my hypothesis, that central government seeks to favor

² See Niskanen (1975) for a theoretical discussion of this idea.

local governments with which it is politically aligned, and the hypothesis that central government wants to favor constituencies where it has larger shares of support.

Larcinese, Snyder and Testa (2008) have questioned the use of election results as explanatory variables for transfers received by local governments, which is followed in most of the empirical literature on distributive politics. They argue that local election results are inherently endogenous to the transfers received by local governments, and therefore, their impact cannot be accurately measured directly. The regression discontinuity design helps address this issue of endogeneity. It is plausible to think that municipalities where the party in power just loses the election are otherwise similar to municipalities where the party in power just wins the election, and therefore, if there is a differential in transfers received between the former and the latter, this is evidence of a causal relation between the party in power nationally being aligned with a local government and the extra transfers received by an aligned municipality.

The results found in my analysis are striking. Municipalities politically aligned with the Portuguese government received on average 19% more targetable transfers than unaligned municipalities. As a control, the same methodology was used to infer if formula based transfers were also affected by political alignment, and in that case, no effect was present.

The paper is structured in the following way: section 2 discusses previous empirical literature on distributive politics; section 3 provides a political overview of Portugal, with particular emphasis on the political environment of Portuguese municipalities; section 4 describes the data and the empirical strategy used in detail; section 5 presents the empirical results; in section 6, possible reasons for the central government providing higher transfers to municipalities with which it is aligned are discussed and some of them are tested; finally, in section 7, I present my concluding remarks.

2 – PREVIOUS LITERATURE

Evidence for the impact of political variables on the transfers received by local governments is mixed. Most of the empirical literature on distributive politics has concentrated on testing two hypotheses: the hypothesis that areas where elections are close receive more funding from the central government (following Linbeck and Weibull 1987); and the hypothesis that central governments tend to privilege areas where they receive more support (following Cox and McCubbins 1986).

Berry, Curden and Howell (2010) found evidence in favor of both hypotheses. Using a panel of all US districts from 1984 to 2004, they find that districts represented by congressmen belonging to the same party as the President receive more federal funds than other districts, but do not find similar evidence of increased funding to districts represented by congressmen of the same party as the majority in congress, to districts represented by congressmen of the same party as committee chairmen, or to districts where the President enjoyed a larger vote margin in the elections. They also find evidence that districts with close races receive more federal transfers. Ansolabehere and Snyder (2006) examine the transfers from US states to counties between 1957 and 1997, finding little evidence that counties where elections are usually close or have high volatility of support for parties receive more state transfers. On the other hand, they find evidence in favor of the partisan hypothesis, as counties where the party in control of state legislature and governor has a larger vote share tend to receive more funds. Dahlberg and Johansson (2002) find exactly the opposite in their study of an ecological grant program from the Swedish central government to municipalities. They find that municipalities with more swing voters are more likely to receive the ecological grant, but do not find strong evidence that the

level of local support for the party in power nationally affects the probability of a municipality receiving a transfer. Milligan and Smart (2005) look at the allocation of regional development grants in Canada, in the period from 1988 to 2001. Some of their regression specifications show evidence that districts represented by congressmen belonging to the party in power nationally receive more development grants, but do not show evidence that districts with closer elections receive more grants, while one of their specifications shows the opposite result. The only constant in all their specifications is that being represented by a cabinet minister has a positive impact in the transfers a district receives.

Larcinese, Snyder and Testa (2008) criticize most of the empirical work done in distributive politics, due to the reliance on election results to explain the transfers received by local governments. Elections results can be a problematic explanatory variable, as they may be endogenously determined with transfers to local governments. They test the swing voter, battleground and partisan hypotheses on the allocation of transfers to US states between 1978 and 2002, using variables constructed from survey data as measures of the percentage of swing voters in each state, the difference between the support enjoyed by democrats and republicans in each state, and finally, the percentage of democrat and republican partisans in each state. They argue that these survey based variables are preferable to variables constructed from election results because they do not suffer from the same type of endogeneity. They find no support for the swing voter and battleground hypotheses, while finding evidence in favor of the partisan supporters' hypothesis, as states with more supporters of the incumbent president tend to receive more federal transfers.

The three following papers test hypotheses very similar to the hypothesis I test in this paper, as they look into how alignment between central and local governments affects transfers.

Larcinese, Rizzo and Testa (2006) look at federal transfers to states in the period from 1982-2000. They find that states that favored the incumbent president in past elections received more federal transfers than those that did not. Of particular interest to what I aim to investigate, they also find that states where the governor is aligned with the US president received more federal transfers than other states. Arulampalam et al. (2009), using a panel of the fourteen more populous Indian states between 1974 to 1997, find that districts that are aligned (i.e., districts where the majority voted for the party in power nationally) and whose elections were close received bigger central government transfers than districts where neither was true. Perhaps surprisingly, they find that the effect is stronger when voters of a district vote in alignment with the party in power nationally for state congress than when they do it for national congress, highlighting the importance attributed by parties in power nationally to control of local governments. Finally, Solé-Ollé and Sorribas-Navarro (2006), find that Spanish municipalities aligned with upper-levels of government received more transfers than municipalities which are unaligned. The results of these three papers are very similar to mine, but, unlike the analysis presented in this paper, they control only for alignment or not, not for the vote shares or winning margins of parties, and therefore it is not possible to distinguish if their results are due to the standard partisan hypothesis – more support translates to more transfers – or due to a genuine effect of political alignment.

3 – PORTUGUESE POLITICAL OVERVIEW

Portugal was governed by an authoritarian regime between 1926 and 1974, headed for most of its duration by António Oliveira Salazar. Discontent, fueled by an ongoing colonial war

and lack of democracy, led to a military coup in 1974, the “Carnation Revolution”, which restored democracy to Portugal. Regular elections have been held ever since, parliamentary and local elections every four years, presidential elections every five years. Portugal is a parliamentary republic, and therefore the party (or coalition) in control of the parliament holds both legislative and executive power. Since 1974, only two parties have won the parliamentary elections, the *Partido Social Democrata* (PSD), a center-right party, and the *Partido Socialista* (PS), a center-left party. Two other small parties have consistently been represented in the parliament, and also have won a significant share of municipal elections: the *Partido Comunista Português* (PCP), a communist party, and the *Partido Popular* (PP, formerly CDS – *Centro Democrático e Social*), a conservative right-wing party.³

Due to the lack of local financing data with sufficient disaggregation for previous years, the period I analyze ranges from 1992 to 2005. The timeline of parliamentary and local elections relevant for this period was:

- October 1991 – PSD wins the parliamentary elections.
- December 1993 – local elections.
- October 1995 – parliamentary elections take place, resulting in a victory of PS.
- December 1997 – local elections.
- October 1999 – parliamentary elections take place, PS wins again.
- December 2001 – local elections. Due to the very poor performance of PS in these local elections, António Guterres, Prime Minister of Portugal and PS leader, resigns from his position, leading to the dissolution of the parliament.
- March 2002 – parliamentary elections take place, won by PSD.

³ Both PS and PSD have formed coalitions with CDS. Nevertheless, every time this happened, the dominant party kept most of the high level executive branch positions.

As this timeline shows, there are three distinct periods of control of the Portuguese parliament and government (1992-1995 by PSD, 1996-2002 by PS, 2003-2005 by PSD) in this sample, and four different sets of local governments in place (1992-1993, 1994-1997, 1998-2001 and 2002-2005). Hence, there is substantial variation in the alignment between local governments and national government within this period of time. PS was considered the party in power nationally for the year of 2002, because PS was still in control for a few months after the national budget was approved.

Portuguese Municipalities

Portugal is subdivided for administrative purposes at three levels – districts, municipalities and civil parishes. Districts are subdivided into municipalities, and municipalities are subdivided into civil parishes. Districts are the relevant geographic constituency for the Portuguese parliament elections, and are headed by a district governor, directly appointed by the central government. The scope of action of this level of government is small, with a role mainly in coordinating the action of local police and civil protection forces. The governments of municipalities and civil parishes enjoy a broad scope of action, as their responsibilities include socio-economic development, spatial planning, and ensuring that local populations have access to education, health care and public services in general. Municipalities and civil parishes' governments are elected every four years in a party-lists proportional representation system (where the D'Hondt method is applied to calculate the number of seats for each party). Although they formally have similar roles, municipalities serve a much bigger role in practice than civil parishes, as they manage much more financial resources and, of particular interest to my

analysis, municipalities, as a whole, receive a much larger share of the funds devoted to local authorities by the central government than civil parishes (e.g., in 2005 civil parishes as a whole only received a little over 8% of what municipalities as a whole received in formula-based transfers from the central government). Also, municipalities are historically the most consistent subdivision of the Portuguese territory. Therefore, I chose the municipality as the relevant unit of study in this article.

Direct transfers from the Portuguese central government and the European Union accounted for approximately 44% of the total revenue of municipalities in 2005. These transfers can be divided into three main components:

- Formulaic transfers – The majority of the transfers received by Portuguese municipalities from the central government are given according to formulas, which take into account the population of the municipalities, the area of the municipality, the percentage of children in school age, the percentage of elderly, and the per capita purchasing power in the municipality, among other factors. Between 1992 and 1998, these transfers were grouped in one fund called “*Fundo de Equilíbrio Financeiro*”, but in 1999 this fund was extinguished, and two new funds were created to replace it: the “*Fundo Geral Municipal*” and the “*Fundo de Coesão Municipal*”. Finally, in 2001, a third fund was created, the “*Fundo Base Municipal*”. Formulaic transfers account for approximately 68% of total transfers received by municipalities during the period of my sample.
- Transfers from the EU – European Union funds are designated to promote the socio-economic development of regions below the EU average. Municipalities have to apply to these funds on a project basis, and the decision of what projects receive the EU transfers is made by cabinets under the tutelage of the central government (known as “*Comissões*”).

de Coordenação e Desenvolvimento Regional”). These funds account for 17% of the transfers received by municipalities in the period of analysis.

- “Other transfers” – In Portugal, transfers from the central government to municipalities should, in principle, be limited to the formula-based transfers described above. Nevertheless, when local projects of great importance or emergency situations so require, government ministries may provide direct funding to municipalities. While they are in principle exceptional, these transfers are in fact quantitatively important, as they accounted for approximately 15% of all money transferred to municipalities in the period of my analysis. Most of the empirical analysis and discussion in the pages ahead will center on the effect of political alignment on these “other transfers” (I will call this type of transfers targetable transfers in the remainder of this paper), as the discretionary nature of their allocation by the national government makes them a perfect method for political targeting.

Local elections are held every four years. At the municipal level, voters are called upon to choose their representatives in the municipal chamber and in the municipal assembly. The municipal assembly features all presidents of civil parishes in the municipality, in addition to candidates elected by voters. The total number of elected representatives in a municipal assembly varies from municipality to municipality, but is bound by two constraints: the number of elected representatives in the municipal assembly cannot be more than three times the number of municipal chamber aldermen, but also has to be more than the number of civil parishes in the municipality. The municipal assembly is the legislative body of the municipality, but unlike the national parliament, the municipal assembly only has five regular meetings per year, and its members usually have other occupations.

The municipal chamber is the executive body of Portuguese municipalities. It is composed of five to seventeen aldermen (depending on the population of the municipality), elected proportionally from the lists competing in the elections. The head of the most voted list is assigned the role of municipal chamber president. These aldermen are paid a salary, and very often this position is their full-time occupation. Presidency of the municipal chamber is generally perceived as the most prestigious and powerful position in a Portuguese municipality, so I will use the control of the presidency of a municipal chamber as the variable measuring control of a municipality in my analysis.

Lists for both the municipal chambers and the municipal assemblies are highly partisan,⁴ and therefore it is straightforward to establish their alignment with national parties. PSD and PS have also been the winners of most municipal elections, and their dominance has even increased through time; in 1989, the first municipal elections relevant for my sample, they accounted for 234 municipalities out of 305, while in 2001, they dominated even more, accounting for 269 of the municipalities.

4 – DATA AND EMPIRICAL STRATEGY

Portugal is currently divided in 308 municipalities, 278 in continental Portugal and 30 in the insular autonomous regions of Azores and Madeira. Three of the municipalities in continental Portugal have only existed since 1998, and therefore will be excluded from the analysis. Data referring to the Municipal Elections of 1989, 1993, 1997 and 2001 was found on the website of

⁴ Independent lists were not even allowed to run in municipal elections until 1997.

the department of the Portuguese Ministry of Internal Administration responsible for electoral management.⁵

Revenue data of the 305 Portuguese municipalities for the period in analysis was provided by the department of the Portuguese government in charge of publishing financial information of local governments - *Direcção Geral das Autarquias Locais*. The availability of revenue data disaggregated between formulaic transfers, targetable transfers and European transfers to the municipalities was the main driver of the time frame chosen in this article. Revenue information for the years after 2006 is not yet available, and therefore I could not include the more recent years in my analysis. The available revenue data for years prior to 1992 is not disaggregated into the three types of transfers described above, and therefore is not useful for my analysis.

Figures I-III and Table II⁶ show the shape and summary statistics of the distribution of the three types of transfers. Clearly, formulaic transfers are the lion share of the resources transferred to municipalities; nevertheless, the weight of both European transfers and targetable transfers is substantial. All distributions are skewed to the left, showing that a few municipalities received considerably more transfers per capita than the average municipality.

To highlight the importance attached to the political control of a municipality, I use a regression discontinuity design⁷ to estimate the impact of the party in power nationally winning the presidency of the municipal chamber on the funds received by a municipality. The model to be estimated is the following:

$$LT_{i,t} = \theta_i + \tau_t + \beta A_{i,t} + F(M_{i,t}) + \Omega' Z_{i,t} + \varepsilon_{i,t}$$

⁵ See www.stape.pt.

⁶ All figures and tables are presented at the end of the paper.

⁷ See Lee and Lemieux (2009) for an overview of the regression discontinuity methodology.

$$\text{where } F(M_{i,t}) = \begin{cases} \delta_1 M_{i,t} + \delta_2 M_{i,t}^2 + \delta_3 M_{i,t}^3, & \text{if the municipality is aligned} \\ \delta_4 M_{i,t} + \delta_5 M_{i,t}^2 + \delta_6 M_{i,t}^3, & \text{otherwise} \end{cases}$$

$LT_{i,t}$ = Logarithm of per capita transfers to municipality i in year t ⁸

θ_i = Municipality fixed effect

τ_t = Year fixed effect

$A_{i,t}$ = Binary variable, assuming value 1 if the municipality is aligned with the party in power nationally, 0 otherwise

$M_{i,t}$ = Margin of victory/loss of the party in power in the municipal election – this variable will be defined in detail later

$Z_{i,t}$ = Other time changing characteristics of the municipality

$\varepsilon_{i,t}$ = Random error term

To ensure asymptotic consistency of the estimated standard errors, clustering was done at a municipal level, for each period in between elections (municipal or national). Therefore, there was a cluster for each municipality for each of the following periods: 1992-1993, 1994-1995, 1996-1997, 1998-2001, 2002, and 2003-2005.

To take into account the systematic differences between municipalities, municipal fixed effects are included in all specifications. Therefore, coefficients are identified through within variation (i.e., by the change through time of the margin of victory/loss of the party in power and the change of alignment of the municipality) instead of through cross-sectional variation, which

⁸ Logarithms of transfers were used, as this transformation will reduce the weight of possible outliers in the regression results. A very limited number of municipalities had to be dropped from the targetable transfers and European transfers regressions, due to having received zero transfers in some years.

could lead to inadequate inferences. For example, some municipalities, which tend to vote more for the party in power, might systematically receive more funds, not because of political alignment but rather due to something specific to the municipalities, like exceptional poverty. Still, a simple fixed effects specification would not be sufficient to distinguish between the pure effect of alignment and the effect of a higher vote share, since the two move in-sync, and also remains vulnerable to the endogeneity critique of Larcine, Snyder and Testa (2008). To overcome these challenges, I use a regression discontinuity design.

In my regression discontinuity design, I control for the margin of victory/loss of the party in power in the municipal chamber elections through a smooth function. The function is a third order polynomial, estimated separately on both sides of the discontinuity. When the party in power nationally has won the municipal chamber elections, the variable is simply the difference between the vote share of the party in power nationally and the vote share of the runner-up party; when the party in power nationally did not win the municipal chamber elections, the variable is defined as the difference between the vote share of the party in power nationally and the vote share of the party who won the municipal chamber elections. Sometimes this variable does not reflect the difference between the party who finished first in the elections and the party who finished second, because, sometimes, the party in power nationally finishes below second in the municipal chamber elections.

The use of regression discontinuity is motivated by my objective of distinguishing between central government leaders who want to reward their supporters, by transferring more money to constituencies where their party enjoys more support (regardless of politically controlling those areas or not), from central government leaders who want to privilege areas that are controlled by their party. In the first situation, transfers should increase with the vote share of

the party in power, but there should not be a jump in transfers if the party in power nationally gained control of a municipality; in the second case, we would expect that winning or losing the election, even if by only 1%, can have a great influence on the transfers received by a municipality. The regression discontinuity design used allows for distinction between these situations. By using a higher-order polynomial and allowing for a non-symmetrical relationship between the vote margin and transfers in regard to political alignment, my specification is flexible enough to warrant the inference that a discontinuity in the relation between margin of victory/loss and transfers, occurring when the party in power switches from losing to winning the municipal election (margin of victory/loss = 0%), must be the result of the party in power nationally controlling the municipality, and not just the spurious result of choosing a rigid functional form for the impact of the margin of victory/loss on transfers.

As a result of the regression discontinuity design used, it should also be emphasized that the relation between political alignment and transfers to municipalities is not ambiguous due to the type of endogeneity criticized in Larcinese, Snyder and Testa (2008). A possible discontinuity of the function relating transfers to margin victory/loss at 0% must be driven by a causal effect of political alignment between municipalities and central government on transfers received by municipalities, as, for values close to 0%, the outcome of elections should be seen as essentially random, given that the party in power nationally cannot precisely control the outcome of the elections.

In Table III, the regressions with per capita transfers as dependent variable are presented. In columns (1) – (3), targetable transfers are the dependant variable. The first specification only includes as explanatory variables the political alignment between local and central government and the margin of victory/loss of the party in power, while the second also includes controls for

the population of the municipality and the formulaic transfers per capita received by the municipality. Formulaic transfers react automatically to social changes in municipalities (e.g., change in the unemployment rate, the poverty rate, or in the proportion of elderly), and these types of changes are very likely to also influence the targetable transfers received by municipalities. Therefore, it is desirable to include formulaic transfers as a control for targetable transfers, as they are a useful proxy for the need of a municipality and will absorb a substantial part of the otherwise unexplained variation, reducing the standard errors of the estimators. Endogeneity between formulaic transfers and error term of targetable transfers is not problematic when estimating the coefficients associated with political variables because, as will be seen in the next section, formulaic transfers are orthogonal to political variables. The specification of column (3) is a robustness check to the importance of controlling for the winning/losing margin of the party in power in the local elections. The specification is very similar to the specification of column (2), except that, in this case, no control is included for the winning margin. In column (4), a regression of the formulaic transfers in the political variables considered in column (1) is presented as a robustness check for the identification strategy. Finally, in the regressions of columns (5) and (6), the dependant variable is the level of European transfers per capita. The specifications of columns (5) and (6) are identical to the specifications of columns (1) and (2), respectively.

5 – EMPIRICAL RESULTS

Figure V and Table III present the main results of this paper. As Figure V shows clearly, there is a substantial jump in targetable transfers when a municipality switches to the party in

power nationally. As can be seen in column (2) of Table III, targetable transfers per capita to municipalities are approximately 19% higher when the party in control of a municipality coincides with the party in control of the national parliament and government. This is a substantial advantage for these municipalities – municipalities received on average €72 on targetable transfers per capita in 2005, meaning that municipalities controlled by the party in power nationally received approximately €14 per capita more than other municipalities. In order to better illustrate what this imbalance means in practice, consider the following exercise: municipalities had on average 34,000 citizens in 2005; therefore, a medium sized municipality controlled by the party in power received on average €476,000 more in targetable transfers than municipalities who were not aligned. In a country where the annual minimum wage in 2005 was €5,600, this kind of disparity is substantial – this average-sized municipality could, for example, hire 85 extra minimum wage workers full-time. Figure V⁹ also shows that the margin of victory/loss of the party in power does not seem to play a big role in the attribution of targetable transfers to municipalities – the difference in amount of targetable transfers received is clearly motivated by the victory or loss of the party in power nationally within the municipality. Nevertheless, taking into account the winning/losing margin of the party in power is useful, as the regression presented in column (3) shows that, absent a control for the margin, the effect of political alignment would be overestimated.

Looking at the results of column (2), it is also clear that formulaic transfers, which provide a good measure of the need for transfers to a municipality, prove to be good predictors of the targetable transfers received by a municipality; an increase of 1% in the formulaic transfers

⁹ For the graphical representation of the regression results, the dependent variable was first stripped of its yearly and municipal averages; then, this transformed dependent variable was averaged within 20 intervals, ordered by the explanatory variable – the margin of victory/loss by the party in power. Each of the open dots seen in Figure IV is the average of one of these intervals. The solid line is the representation of the predicted value of the dependent variable using the regression results of column 1 in Table 2.

received by a municipality is accompanied by a 1.2% increase in the targetable transfers received by the municipality. On the other hand, it appears that population growth does not play a separate role in the attribution of targetable transfers.

Column (4) of Table III shows that control of a municipality by the party in power nationally does not significantly affect the formulaic transfers received by a municipality. This result is not surprising, given that the formulas used to allocate these transfers are the same for every municipality, and usually remain unchanged for many years. Even if a party in power desired to target these types of transfers to its own constituencies, it would be difficult, given that both major parties enjoy substantial support across most of the country and different demographics. Figure IV shows that, not only is there no discontinuity associated with a win in the municipal chamber for the party in power, but also that the winning/losing margin of the party in power does not seem to influence the formulaic transfers received by municipalities, even when allowing for a two-sided cubic effect of the winning margin on these transfers. These results give credibility to the identification strategy I use in this paper, as significant effects of local political variables in these types of transfers would probably imply some sort of misspecification.

Finally, the regressions of columns (4) and (5) show that alignment of a municipality with the party in power, perhaps surprisingly, did not play a big role in the attribution of European transfers, as coefficients associated with the binary variable representing alignment are not significant. On the other hand, per capita European transfers seem to be biased in favor of municipalities with bigger populations and also toward municipalities who receive more formulaic transfers. While there is no significant impact of the victory or loss of a municipality by the party in power on the European transfers received by a municipality, Figure III shows that

there is a significant tendency for municipalities where the party in power wins by a broad margin to receive more European transfers than municipalities where this winning margin is smaller. The effect of the vote margin, when the party in power loses, is not as clear cut.

Comparison between PSD and PS

Do the two major Portuguese parties act differently in regard to funneling government monies? Table IV shows that a clear difference is present in the data. The period where the right-wing party, PSD, was in power nationally (1992-1995 and 2003-2005) is driving the result that political alignment benefits municipalities financially. While municipalities won by PSD, with PSD in power, received 32% more targetable transfers than other municipalities, municipalities won by PS, with PS in power, only received 2% more targetable transfers than other municipalities. One possible explanation for this significant difference between PSD and PS is that they have to cater in different ways to their constituencies. PS receives more support from unions, as well as low-income and unemployed voters, and therefore might prefer to concentrate available resources on national programs, like the increase of wages for public servants or the increase of unemployment benefits, while PSD, stronger among rural communities and small business owners, might see local programs, fostering commerce and agriculture, as a better tool to improve the lives of their loyal constituents. Another possibility is that internal party rules dictate that PSD local leaders have substantially more influence over PSD leadership than PS local leaders have over PS leadership. Both of these possibilities merit further research.

6 – REPERCUSSION OF TRANSFERS AND LOCAL ELECTIONS

The results in the previous section raise the question: why would the national leadership of majority parties want to financially privilege some municipalities? Possible explanations for this behavior are:

- National leaders of the party in power want to keep their local leaders happy and therefore target more funds to municipalities controlled by them. These extra funds might directly contribute to the happiness of local leaders by giving them control of a larger budget. Moreover, these extra funds allow local leaders to achieve more for their constituents, and that may increase their chances of re-election.

- National party leaders do not want to contribute to the image of local leaders of competing parties, and therefore concentrate funds in municipalities where all the “credit claiming” reverts to the party in power nationally.

- National leaders might not directly care for the satisfaction or support of local leaders, but they still might want to want to help their local leaders win local elections, as the local elections might provide momentum for the ensuing national elections.

- The party in power privileges aligned municipalities because aligned local leaders share the social and economic priorities of the national government, and therefore favor investment projects and current spending in line with the national party goals. This is a reasonable argument, but I do not believe that this kind of motivation is very likely in this case, because the transfers subject to political manipulation are targetable from the point of view of the national decision-makers, and therefore will necessarily be applied to programs in line with the goals of the party in control nationally.

I explore two of these hypotheses in this section.

To test the hypothesis that extra targetable transfers might increase the voting share of incumbents in municipal elections, the following model is used:¹⁰

$$M_{i,t}^{PSD} = \theta_i + \tau_t + \beta PSD_{i,t-4} + G(M_{i,t-4}^{PSD}, RTT_{i,t}, \dots, RTT_{i,t-3}) + \varepsilon_{i,t}$$

where $G(M_{i,t-4}^{PSD}, RTT_{i,t}, \dots, RTT_{i,t-3}) =$

$$\left\{ \begin{array}{l} \delta_1 M_{i,t}^{PSD} + \delta_2 (M_{i,t}^{PSD})^2 + \delta_3 (M_{i,t}^{PSD})^3 + \sum_{j=0}^3 (\gamma_j RTT_{i,t-j}), \\ \text{if the municipality is controlled by PSD} \\ \delta_4 M_{i,t}^{PSD} + \delta_5 (M_{i,t}^{PSD})^2 + \delta_6 (M_{i,t}^{PSD})^3 + \sum_{j=0}^3 (\phi_j RTT_{i,t-j}), \\ \text{otherwise} \end{array} \right.$$

$M_{i,t}^{PSD}$ = Margin of victory/loss of PSD in the municipal elections at year t

θ_i = Municipality fixed effect

τ_t = Year fixed effect

$PSD_{i,t}$ = Binary variable, assuming value 1 if PSD is in control of the municipality, 0

otherwise

$RTT_{i,t}$ = Logarithm of targetable transfers per capita at year t

$\varepsilon_{i,t}$ = Random error term

¹⁰ I base the model description on the PSD case, but the same approach was followed for the PS case.

This setup aims at measuring the effect of targetable transfers in the winning/losing margin enjoyed by incumbents and challengers in the municipal chamber elections and, simultaneously, finding the effect of incumbency itself in the winning/losing margin. Lagged targetable transfers are separately considered when PSD is in control of the municipality and when PSD is not, to allow for a differential impact of transfers received by a PSD incumbent or a non-PSD incumbent on the PSD vote share. Regression discontinuity design is used here for the same type of reasons as in the analysis of transfers – it allows the separation of the incumbency effect from the effect of the winning margin in previous elections. Also, year fixed effects are used to absorb the differences in support across the board for the parties in different years, and municipal fixed effects are included to account for differences in support between different municipalities. Table V¹¹ presents the results of the specification above described and also the results of a specification that did not include lagged transfers as explanatory variables.

The impact of targetable transfers in local election outcomes was disparate for PSD candidates and PS candidates. In all lags, targetable transfers had a positive effect on the margin of victory of PSD incumbents, and this effect was larger the closer to the election the transfers happened, achieving statistical significance for election-year transfers. In the case of PS, targetable transfers have inconsistent effects on election results, positive in two lags, negative in two lags, never statistically significant. Also, larger transfers to a municipality tended to hurt the prospects of PSD and PS challengers, especially when received in election years, but their effects on election results did not reach statistical significance in any lag.¹² Can this differential

¹¹ Municipal election results of 1989, 1993, 1997 and 2001 were used in these regressions.

¹² The coefficients associated with transfers to PSD as an incumbent are not symmetrical to the coefficients associated with transfers to PS as a challenger (and vice-versa), as in many cases neither PSD nor PS are the incumbent.

responsiveness of election results to transfers justify why PSD targets more funds to aligned municipalities than PS does? This is another possibility deserving further exploration.

When not controlling for targetable transfers, incumbency results in a 12.7% higher voting margin for PSD municipal candidates, while it increases the voting margin by 9.3% for PS municipal candidates. These results are in line with those obtained by Lee (2001) in his analysis of the US congress (Lee used a similar regression discontinuity design in his paper). Controlling for targetable transfers does not significantly change these coefficients. Thus, transfers help the incumbent, but are not a main driver of the incumbency advantage.

Success in municipal elections can translate into success in the ensuing municipal elections, but do the municipal elections provide momentum for the next parliamentary elections? To test this hypothesis, I use a regression discontinuity design very similar to the one employed in the previous regression. The model tested is the following:

$$VS_{i,t}^{PSD} = \theta_i + \tau_t + \beta PSD_{i,t-4} + G(M_{i,t-4}^{PSD}) + \varepsilon_{i,t}$$

$$\text{where } G(M_{i,t}^{PSD}) = \begin{cases} \delta_1 M_{i,t}^{PSD} + \delta_2 (M_{i,t}^{PSD})^2 + \delta_3 (M_{i,t}^{PSD})^3, \\ \text{if the municipality is controlled by PSD} \\ \delta_4 M_{i,t}^{PSD} + \delta_5 (M_{i,t}^{PSD})^2 + \delta_6 (M_{i,t}^{PSD})^3, \text{ otherwise} \end{cases}$$

$VS_{i,t}^{PSD}$ = Vote share of PSD in the first parliamentary elections after t

θ_i = Municipality fixed effect

τ_t = Year fixed effect

$M_{i,t}^{PSD}$ = Margin of victory/loss of PSD in the municipal elections at year t

A fixed effects regression is performed here, as it allows interpreting the β coefficient as the effect of having an extraordinary good result in the municipal election on the deviation of the vote share in the national legislative elections from the inter-temporal municipal average. This is more useful than simply looking at the relation between winning margin in the municipal election and the vote share in the national election, with no regard for the municipal average results in both elections, as a correlation of this type can be caused by some municipalities always favoring the same party in both types of elections, even if the municipal elections results do not sway more voters in favor of well performing parties in the next national elections. Results for both the regression with a simple linear effect of the winning margin and the regression discontinuity design are presented in Table VI.¹³

The regression discontinuity design did not prove to fit the data significantly better than a simple linear relation between the margin of victory¹⁴ of a party in municipal elections and the vote share of that party in legislative elections. Therefore, surprisingly, municipal incumbency does not play a significant role in increasing the vote share of a party in legislative elections. This suggests that vote buying is not what is motivating national politicians to financially favor aligned municipalities. Instead, this result indirectly suggests that national leaders transfer more to their aligned municipal leaders in order to guarantee their loyalty and motivation, and therefore, these extra funds are pure patronage. Nevertheless, when simply looking at the linear impact of the winning/losing margin of parties in legislative election results, a small, but statistically significant, effect is found. A 20% higher vote margin favoring PSD in municipal elections leads to, approximately, a 1% increase on the vote share of PSD in the ensuing national legislative elections. In the case of PS, a 15% increase in the winning margin in municipal

¹³ Municipal election results of 1989, 1993, 1997 and 2001, together with parliamentary election results of 1991, 1995, 1999 and 2002, were used in these regressions.

¹⁴ Look at Figure VII for comparison in the PSD case, and Figure VIII for comparison in the PS case.

elections is enough to raise the vote share of PS in the next national elections by 1%. This is an interesting result on its own, as it shows that municipal elections do have an impact on national elections, although not the kind of impact that would be expected given the way national leaders target funds.

7 – CONCLUSION

The regression discontinuity design employed in this paper allows the conclusion that political alignment between local governments and the national government financially benefits Portuguese municipalities. Aligned municipalities received approximately 19% more targetable transfers than non-aligned municipalities. An increase of the winning margin for the party in power does not significantly affect transfers beyond the effect of alignment, challenging the common empirical interpretation of the partisan hypothesis of distributive politics, which has been that the larger the vote share of the party in power within a constituency, the larger the transfers received by this constituency. On the other hand, alignment did not influence formulaic transfers, as these transfers are calculated by identical formulas for all municipalities, and therefore cannot be easily targeted to aligned municipalities by the party in power.

Two possible reasons for the national party leaders to privilege aligned municipalities were tested in this paper. The hypothesis that transfers help local leaders win future elections proved sensible in the PSD case, but not in the PS case. The hypothesis that municipal incumbency improves performance in national elections is not supported by the data, although the vote share attained in municipal elections itself proves to be important in predicting national election outcomes.

I am interested in applying the same methodology used in this paper to other countries. One possible future project is to use regression discontinuity design to investigate if transfers from the US Federal Government to states are influenced by political alignment between the state governors and the US President or alignment between state governors and the US Congress.

On an ending note, do public officials believe that the government skews transfers in favor of municipalities with which it is aligned? As expected, the answer is partisan. In my private discussions with municipal officials of municipalities not affiliated with any of the two major Portuguese parties, they vouched in favor of my hypothesis, providing many anecdotal examples of the national executive benefiting municipalities politically aligned with the party in control of national government. On the other hand, officials of municipalities controlled by the party of the current government guaranteed me that no such practice happens, some of them even claiming that their municipal chamber had a better relationship with the national executive when the other major party was in power. It would be interesting to ask them again in a few years, when the party in power changes again, to see if they have changed their minds.

REFERENCES

- Ansolabehere, Stephen, and James M. Snyder Jr., "Party Control of State Government the Distribution of Public Expenditures," *Scandinavian Journal of Economics*, 108 (2006), 547-569.
- Arulampalam, Wiji, Sugato Dasgupta, Amrita Dhillon, and Bhaskar Dutta, "Electoral Goals and Center-State Transfers: A Theoretical Model and Empirical Evidence from India," *Journal of Development Economics*, 88 (2009), 103-119.
- Berry, Christopher R., Barry C. Curden, and William G. Howell, "The President and the Distribution of Federal Spending," *American Political Science Review*, 104 (2010), 783-799.
- Cox, Gary W., and Mathew D. McCubbins, "Electoral Politics as a Redistributive Game," *The Journal of Politics*, 48 (1986), 370-389.
- Dahlberg, Matz, and Eva Johansson, "On the Vote-Purchasing Behavior of Incumbent Governments," *The American Political Science Review*, 96 (2002), 27-40.
- Larcinese, Valentino, James M. Snyder Jr., and Cecilia Testa, "Testing Models of Distributive Politics Using Exit Polls to Measure Voter Preferences and Partisanship," STICERD – Political Economy and Public Policy Paper Series 19, 2008.
- Larcinese, Valentino, Leonzio Rizzo, and Cecilia Testa, "Allocating the U.S. Federal Budget to the States: The Impact of the President," *The Journal of Politics*, 68 (2006), 447-456.

Lee, David, “The Electoral Advantage to Incumbency and Voters' Valuation of Politicians' Experience: A Regression Discontinuity Analysis of Elections to the U.S. House,” NBER Working Paper No. 8441, 2001.

Lee, David, and Thomas Lemieux, “Regression Discontinuity Designs in Economics,” *Journal of Economic Literature*, 48 (2010), 281-355.

Levitt, Steven D., and James M. Snyder Jr., “Political Parties and the Distribution of Federal Outlays,” *American Journal of Political Science*, 39 (1995), 958-980.

Lindbeck, Assar, and Jörgen W. Weibull, “Balanced-Budget Redistribution as the Outcome of Political Competition,” *Public Choice*, 52 (1987), 273-297.

Milligan, Kevin, and Michael Smart, “Regional Grants as Pork Barrel Politics,” CESifo Working Paper No. 1453, 2005.

Niskanen, William, “Bureaucrats and Politicians,” *Journal of Law and Economics*, 18 (1975), 617-643.

Solé-Ollé, Albert, and Pilar Sorribas-Navarro, “The effects of partisan alignment on the allocation of intergovernmental transfers. Differences-in-differences estimates for Spain,” IFIR Working Paper No. 2006-09, 2006.

Table I
PSD and PS success in municipal elections

	PSD		PS	
	municipalities won	average vote share	municipalities won	average vote share
1989	114	36.6%	120	34.5%
1993	116	37.3%	127	36.4%
1997	127	36.8%	128	39.3%
2001	158	40.2%	111	36.4%

Table II
Descriptive statistics

	mean	standard deviation
Formulaic Transfers (2005 Euros)	5,005,486	4,407,943
European Transfers (2005 Euros)	1,219,155	1,460,033
Targetable Transfers (2005 Euros)	1,065,316	2,354,222
Formulaic Transfers Per Capita (2005 Euros)	359.41	287.85
European Transfers Per Capita (2005 Euros)	91.61	153.27
Targetable Transfers Per Capita (2005 Euros)	54.81	110.49
Municipalities Population	32,974	55,048

Table III
Effect of political alignment between party in power nationally
and municipal government in transfers to municipalities

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	Log Targetable Transfers Per Capita, t	Log Targetable Transfers Per Capita, t	Log Targetable Transfers Per Capita, t	Log Formulaic Transfers Per Capita, t	Log European Transfers Per Capita, t	Log European Transfers Per Capita, t
Municipality won by party in power, before t	.184 (.113)	.189* (.112)	.222*** (.037)	-.004 (.012)	.020 (.110)	.020 (.106)
Log Municipality population, t	--	.099 (.589)	.122 (.588)	--	--	1.399* (.726)
Log Formulaic Transfers, t	--	1.203*** (.384)	1.214*** (.384)	--	--	1.677*** (.470)

Note: N = 4144 for columns (1) – (3), N = 4270 for column (4), and N = 3206 for columns (5) and (6). All regressions, except the one presented in column (3), include a cubic transformation of the margin of victory/loss of the party in power nationally (at year t) for the municipal elections prior to year t. All regressions include municipality fixed effects and year dummies. Estimated standard errors (in parenthesis) are consistent, with municipality-municipality government period-national government period clustered sampling. *** = p-value < 0.01; * = p-value < 0.1.

Table IV
Effect of political alignment between party in power nationally and municipal government in transfers to municipalities – separated by party

Dependent Variable	(1)	(2)	(3)	(4)
Log Targetable Transfers Per Capita, t – Years of PSD control	Log Targetable Transfers Per Capita, t – Years of PSD control	Log Targetable Transfers Per Capita, t – Years of PSD control	Log Targetable Transfers Per Capita, t – Years of PSD control	Log Targetable Transfers Per Capita, t – Years of PSD control
Municipality won by party in power, before t	.320 (.195)	.320* (.188)	.008 (.135)	.019 (.139)
Log Municipality population, t	--	1.079 (.763)	--	-1.027 (.986)
Log Formulaic Transfers, t	--	1.891*** (.481)	--	.309 (.673)

Note: N = 2094 for columns (1) and (2), and N = 2072 for columns (3) and (4). Regressions include a cubic transformation of the margin of victory/loss of the party in power nationally at t, in the municipal elections prior to t, as well as municipality fixed effects and year dummies. Estimated standard errors (in parenthesis) are consistent, with municipality-municipality government period-national government period clustered sampling. *** = p-value < 0.01; * = p-value < 0.1.

Table V
Incumbency and targetable transfers effects in municipal elections outcomes

Dependent Variable	(1)	(2)	(3)	(4)
Municipality won by PSD, t	PSD winning/losing margin in municipality, t + 4 .127*** (.035)	PSD winning/losing margin in municipality, t + 4 .125*** (.035)	PS winning/losing margin in municipality, t + 4 --	PS winning/losing margin in municipality, t + 4 --
Municipality won by PS, t	--	--	.093** (.039)	.094** (.039)
Logarithm targetable transfers (if incumbent), t	--	--	.018* (.010)	.010 (.010)
Logarithm targetable transfers (if incumbent), t-1	--	--	.015 (.011)	-.014 (.010)
Logarithm targetable transfers (if incumbent), t-2	--	--	.011 (.011)	.022 (.014)
Logarithm targetable transfers (if incumbent), t-3	--	--	.001 (.012)	-.007 (.012)
Logarithm targetable transfers (if not incumbent), t	--	--	-.010 (.007)	-.014 (.008)
Logarithm targetable transfers (if not incumbent), t-1	--	--	.007 (.007)	.002 (.009)
Logarithm targetable transfers (if not incumbent), t-2	--	--	-.016 (.010)	.000 (.010)
Logarithm targetable transfers (if not incumbent), t-3	--	--	.009 (.009)	-.002 (.010)

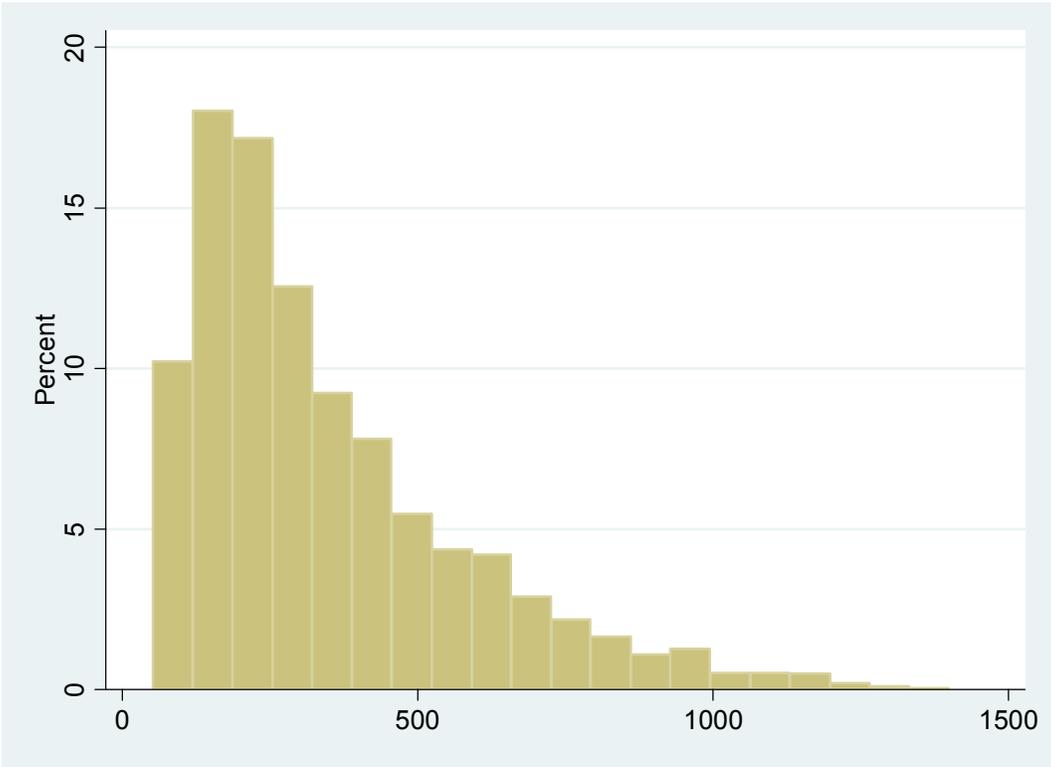
Note: N = 888 in all columns. Rows All regressions include a cubic transformation of PSD or PS margin of victory/loss in the municipal elections at t. All regressions include municipality fixed effects and year dummies. Estimated standard errors in parenthesis. *** = p-value < 0.01; ** = p-value < 0.05; * = p-value < 0.1.

Table VI
Effect of municipal elections in ensuing legislative elections

	(1)	(2)	(3)	(4)
Dependent Variable	Vote Share of PSD Parliamentary Election, after t	Vote Share of PSD Parliamentary Election, after t	Vote Share of PSD Parliamentary Election, after t	Vote Share of PSD Parliamentary Election, after t
Municipality won by PSD, t		-.002 (.006)	--	--
PSD winning/losing margin in municipality, t		--	.052*** (.006)	--
Municipality won by PS, t		--	--	.006 (.006)
PS winning/losing margin in municipality, t		--	--	.068*** (.006)

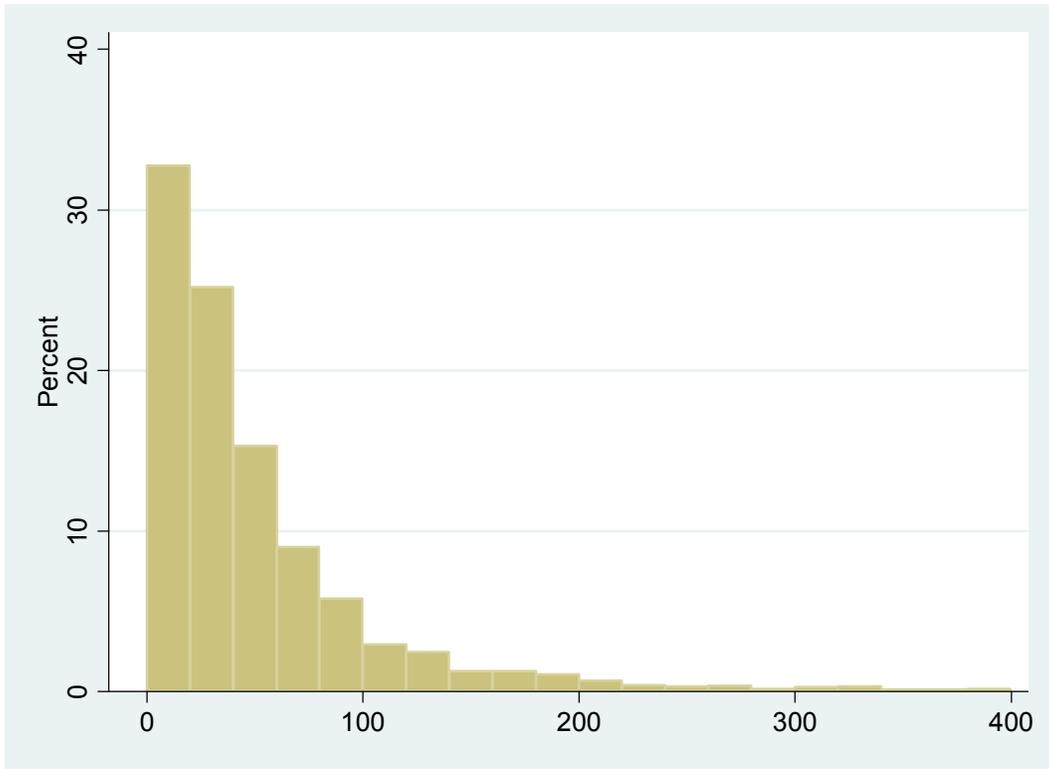
Note: N = 1220 in all columns. Regressions in columns (1) and (3) include a cubic transformation of PSD or PS margin of victory/loss in the municipal elections at t. All regressions include municipality fixed effects and year dummies. Estimated standard errors in parenthesis. *** = p-value < 0.01.

Figure I
Formulaic Transfers Histogram



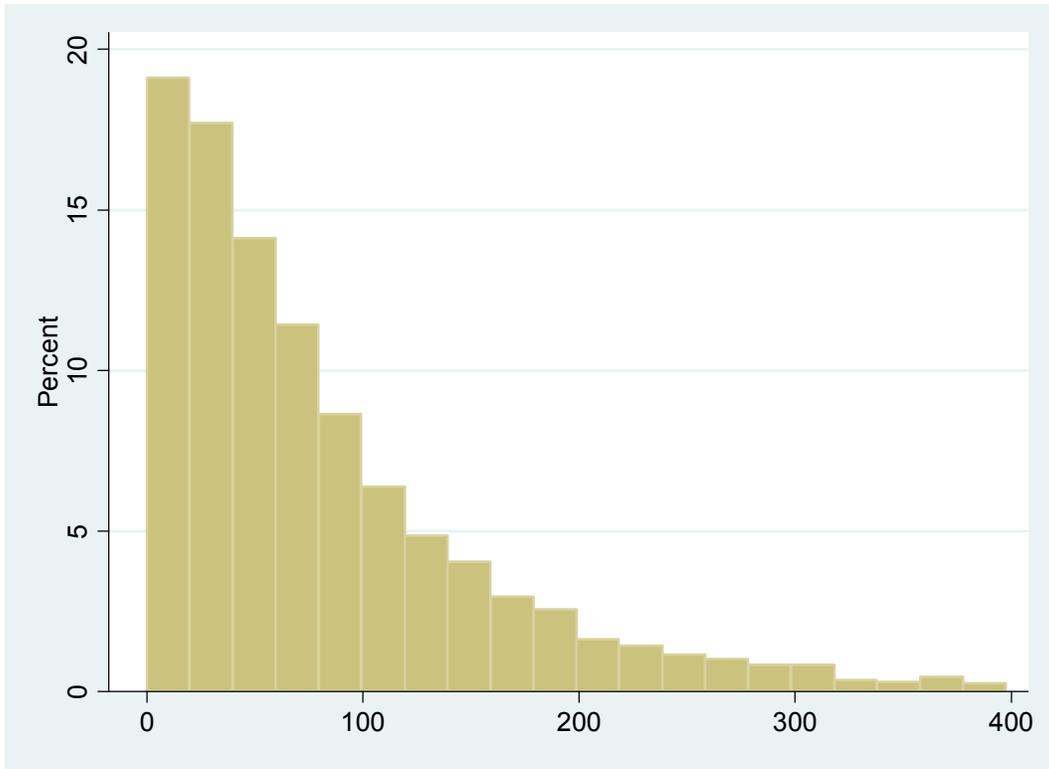
Formulaic Transfers Per Capita (in 2005 Euros)

Figure II
Targetable Transfers Histogram



Targetable Transfers Per Capita (in 2005 Euros)

Figure III
European Transfers Histogram



European Transfers Per Capita (in 2005 Euros)

Figure IV

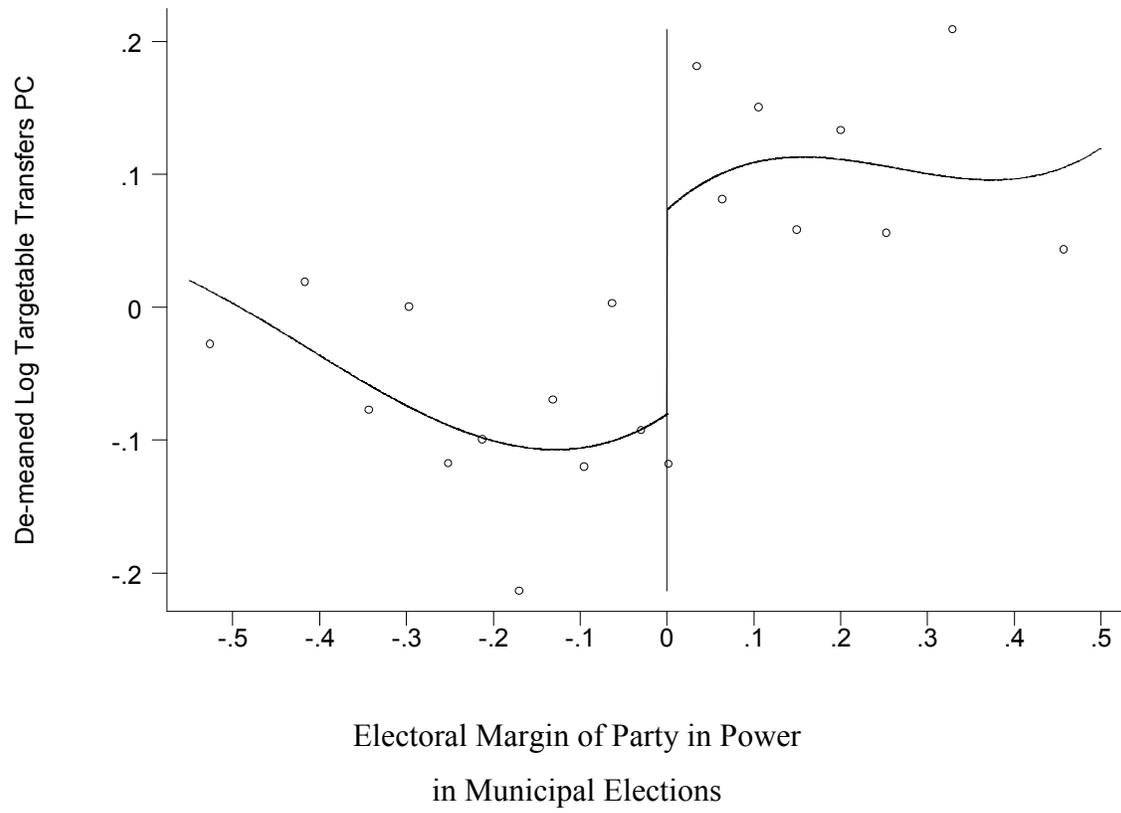


Figure V

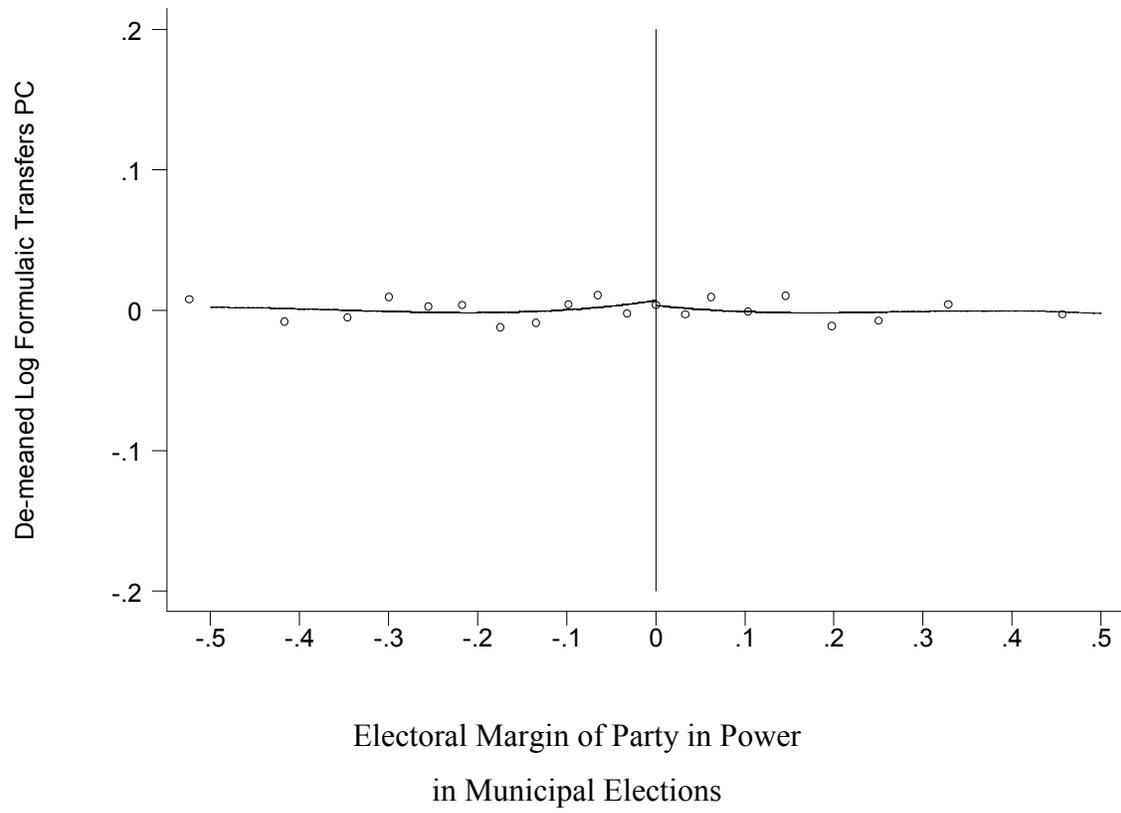


Figure VI

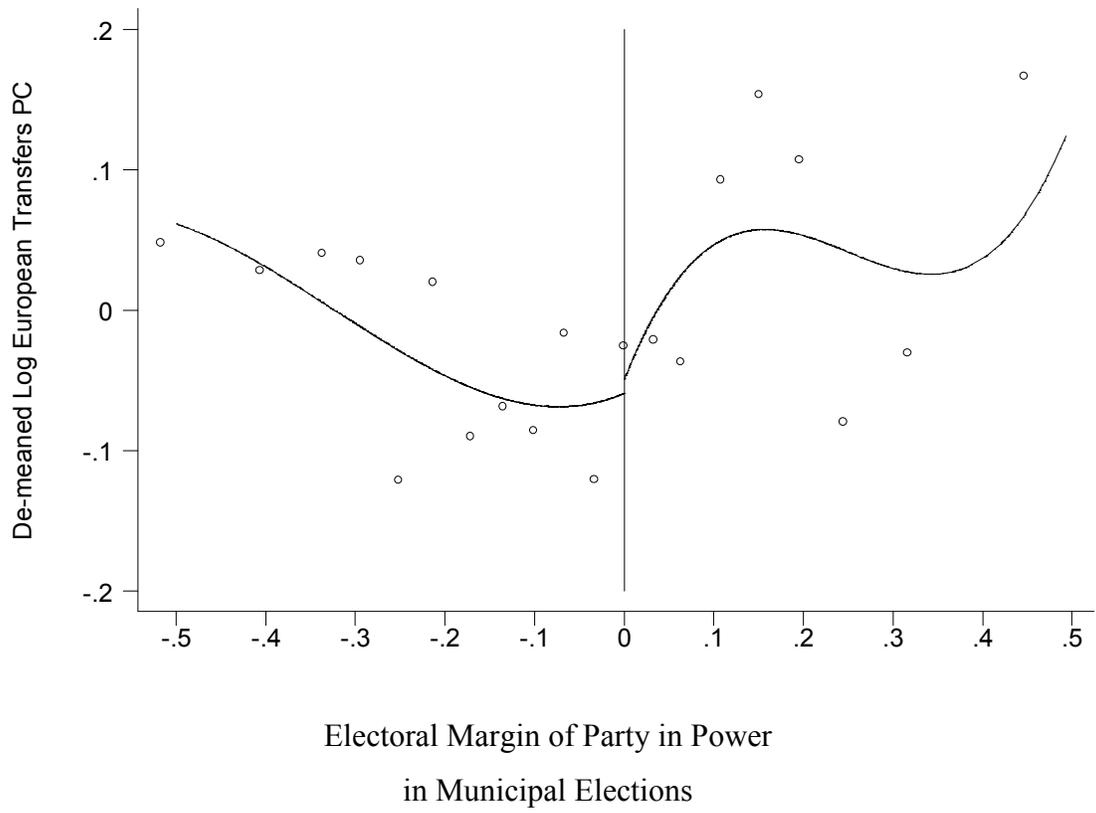


Figure VII

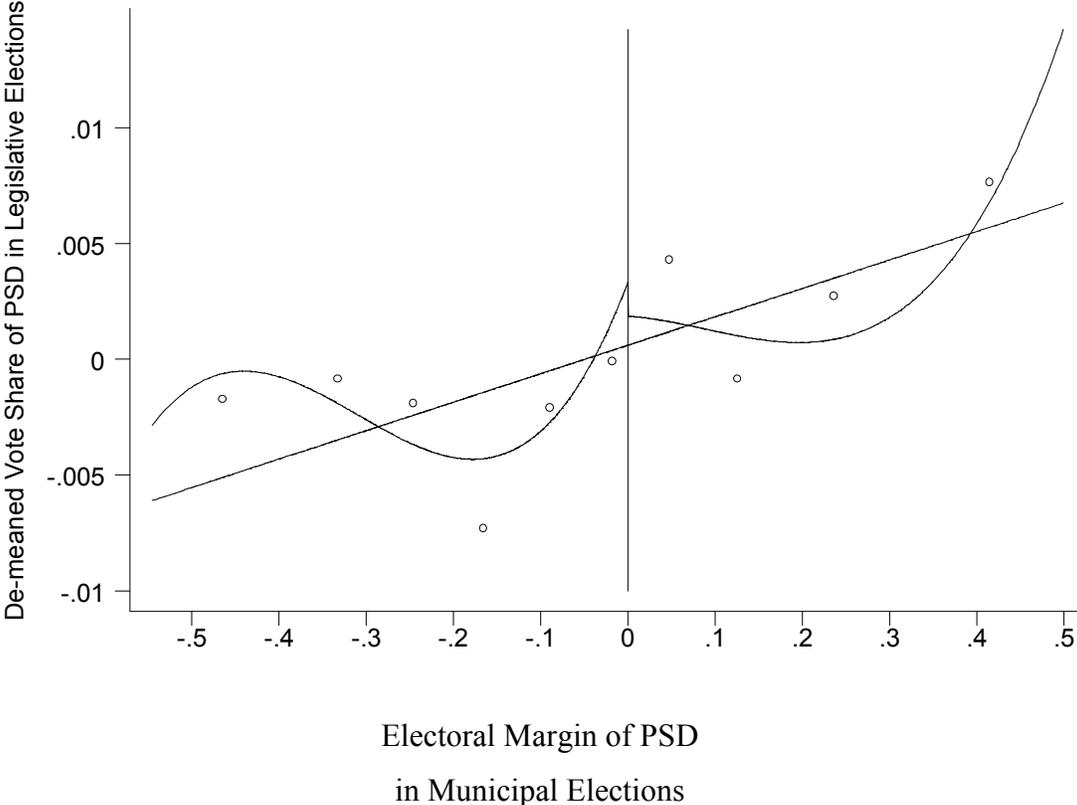


Figure VIII

