

IS SPAIN FISCALLY PARTISAN? EVIDENCE FROM LOCAL ELECTIONS

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Abstract

The study of partisan politics has been a long-lasting topic in the economic literature. However, a naïve approach to the study of the effect of party control on economic outcomes can be highly misleading. In order to solve this endogeneity problem, regression-discontinuity (RD) designs have been extensively used in recent years. The purpose of this Master Thesis is to study if the ideology of the mayor in a city council affects fiscal outcomes using close local elections. There are positive and significant differences between left-and right-wing governments: having a left-wing government increases total revenues and expenditures by 9-11%.

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1 Introduction

The study of partisan politics has been a long-lasting topic in the economic literature. However, a naïve approach to the study of the effect of party control on economic outcomes can be highly misleading: party representation is likely to be correlated with the error term in various ways, since voter preferences may affect policy directly, there may be a direct effect of voting on policy outcomes, and policy outcomes themselves can influence voting behavior (Folke, 2014).

In order to solve these endogeneity problems, regression-discontinuity (RD) designs have been extensively used in recent years (see Imbens and Lemieux, 2008, Lee and Card, 2008 or Lee and Lemieux, 2010, for useful theoretical and practical references in this methodology). Therefore, the use of RD designs has produced a growing corpus of literature in political economy and political science that uses the results of close elections (those in which the party that won did so by a narrow margin) to estimate party effects (*i.e.*, the average difference in economic outcomes between left- and right-wing governments). The basic identifying assumption is that sufficiently close to the threshold, the seat allocation can be considered as if it was random. Therefore, comparing observations above and below the threshold, one can estimate the effect of party representation as if this quasi-experiment was a truly randomized one.

Previous studies have found conflicting results regarding the effect of political parties in economic outcomes: Pettersson-Lidbom (2008) finds a higher level of public spending, taxation and public employment, and lower unemployment, for left-wing governments in Sweden municipalities, whereas Ferreira and Gyourko (2009) does not find any effect of the mayor being a Democrat or a Republican on the size of the government, the allocation of public spending, or crime rates in the U.S. Both studies consider a majoritarian election system, therefore using the fact that the party control changes discontinuously at 50% of the vote share. Examples of the estimation of the party effects in proportional representation systems can be found in Folke (2014), which does not find differences in what he call *primary policies* (more general ones, such as tax policy) but does find them in *secondary policies* (more specific ones, often linked to a minor party, such as immigration and environmental policies), or in Fiva, Folke, and Sørensen (2015), which finds a higher property taxation, higher childcare spending and less elderly care spending in cases with a larger left-wing party in Norway. Considering a two-blocs scenario, Solé-Ollé and Viladecans-Marsal (2013) finds that cities controlled

by left-wing parties converted much less land to urban uses in Spain during the years of the real state bubble. Finally, the hypothesis of the *common pool* (*i.e.*, coalition governments leading to higher deficits due to several decision-makers with incentives to overspend) has been tested in Meriläinen (2013) for Finnish municipalities and in Artés and Jurado (2016) for Spanish municipalities, with positive results.

The purpose of this Master Thesis is to study if the ideology of the mayor in a city council affects fiscal policy. The remainder of the thesis is divided in 6 sections: Section 2 outlines the main institutional details of Spanish city councils (nature, organization, how seats are allocated, and the competencies they have); section 3 introduces the several dataset I have constructed and worked with, and presents some descriptive statistics; section 4 discusses some issues of the datasets and explains the model and its assumptions; section 5 presents the main results of the thesis; section 6 explores further mechanisms that can affect partisanship at the local level; section 7 concludes.

2 Institutional details

Spain has more than 8000 municipalities, which constitute the lowest level of the territorial organization of the State. Municipalities can be created, suppressed or merged according to the law, so the exact number can vary from year to year.

The local government consists of the mayor and the councilors. The mayor is elected by the councilors, who are elected by direct universal suffrage, and runs the government and the local administration. Each municipality constitutes a single district in which a number of councilors are elected based on population.¹ The number of councilors ranges from 3 in those municipalities with less than 100 inhabitants, to 57 in Madrid.

Seat allocation is made according to the *d'Hondt* method: after excluding those parties with less than 5% of the total valid votes, the remaining ones are ordered from highest to lowest amount of votes; then, the number of votes of each party is divided by the natural numbers (1, 2, 3, ...), and seats are distributed one by one to the parties with the highest quotients. Those municipalities with less than 250 inhabitants use a majoritarian system with open lists; therefore, they will be excluded from my analysis.

¹Article 179 of the *Ley Orgánica 5/1985, de 19 de junio, del Régimen Electoral General*.

Municipalities have competencies over several areas, depending on population.² All municipalities have to provide public streetlight, cemetery, garbage collection, street cleaning, water supply, sewage system, access to population centers, and paving services. Municipalities with more than 5.000 inhabitants also have to provide parks and recreations, public library, and waste management. Only those municipalities over 20.000 inhabitants have to provide civilian protection, evaluation and information of social need situations and immediate assistance to people in situation or risk of social exclusion (*i.e.*, some degree of social policy), fire prevention and extinguishing, and public sport facilities. Finally, the biggest municipalities (over 50.000 inhabitants) have to provide urban public transport and urban environment services.

3 Data

3.1 Electoral data

Local elections are held every four years in Spain. Quadrennial data on electoral results is available at the webpage *Infoelectoral*³ of the *Ministerio del Interior* (Home Office). My electoral dataset contains the results of the three elections held in years 1995, 1999, and 2003. The original file included data of votes to parties in all municipalities, but not the number of seats. After excluding municipalities with less than 250 inhabitants (for reasons mentioned in SECTION 2), I calculated the number of seats in each municipality using the *d'Hondt* rule. The final dataset consists of around 5600 municipalities.

Then, I added up seats from those parties that belong to one of the two ideological blocs (left and right): in the least conservative approach, in which I obtained a percentage of municipalities with undefined majorities (defined as those municipalities where neither the left- nor the right-wing bloc obtains more than half of the seats) similar to [Petterson-Lidbom \(2008\)](#), I include 9 parties in the left-wing bloc⁴ and 6 parties in the right-wing bloc.⁵ However, results are

²Article 25 of the *Ley 7/1985, de 2 de abril, reguladora de las Bases del Régimen Local*.

³www.infoelectoral.interior.es

⁴The two main center-left and left-wing national parties, *Partido Socialista Obrero Español* and *Izquierda Unida*, and several left-wing regional or nationalist parties: *Partido Andalucista*, *Bloque Nacionalista Galego*, *Esquerra Republicana de Catalunya*, *Bloc Nacionalista Valencià*, *Chunta Aragonesista*, *Eusko Alkartasuna*, and the diverse brands of the *abertzale* (*i.e.*, Basque nationalist) left.

⁵The main right-wing national party, *Partido Popular*, and several center-right and right-

robust to classifying some parties as undefined: for instance, as reported in Tables 16 and 17 in the Appendix, considering *Coalición Canaria*, labeled as right-wing but having supported both right- and left-wing governments at a national level, and *Eusko Alkartasuna*, labeled as left-wing but in a coalition with his right-wing Basque counterpart in two of the elections considered, as undefined parties does not change the sign and significance of the results.

Table 1 shows that the percentage of vote share to left-wing parties is around 49% in each election, the percentage to the right is around 43%, and there is a 8% of votes to *undefined* parties, mainly local ones. The proportion is similar for the percentage of seats, with the percentage of seats to *undefined* parties around but below 10%.

Table 1: Vote share. Final sample

	1995	1999	2003	TOTAL
Left	48,36%	49,37%	49,25%	48,99%
Right	43,67%	42,11%	42,45%	42,75%
Undefined	7,97%	8,53%	8,30%	8,26%

Table 2: Seats share. Final sample

	1995	1999	2003	TOTAL
Left	43,87%	45,19%	46,55%	45,20%
Right	45,38%	45,17%	43,93%	44,83%
Undefined	10,75%	9,64%	9,52%	9,97%

Given lack of availability of data about the ruling party in each municipality, I define the treatment T as 1 if the percentage of seats of all left-wing parties is above 50% and 0 otherwise. I further define the variable *Indep*, which takes value 1 if neither the left-wing bloc nor the right-wing bloc hold a majority, and 0 otherwise. One possible concern could be that even if one of the blocs is above 50% of the seats, some parties form a coalition with other parties outside their ideological bloc. However, as [Solé-Ollé and Viladecans-Marsal \(2013\)](#) point out, the fact of one ideological bloc of parties holding a majority is a very strong predictor of the major belonging to that ideological bloc.

wing regional parties: *Convergència i Unió*, *Partido Nacionalista Vasco*, *Coalición Canaria*, *Unión Valenciana* and *Partido Aragonés*.

Using this criterion, I consider that around 41% of the municipalities can be defined as governed by a left-wing mayor and 43% as governed by a right-wing one. Approximately 1 in 6 municipalities is defined as having neither a left- nor a right-wing government.

Table 3: Party control. Final sample

	1995	1999	2003	TOTAL
Left	39,33%	39,95%	42,80%	40,69%
Right	43,22%	44,45%	41,68%	43,12%
Undefined	17,45%	15,61%	15,52%	16,20%

It is common in the literature to estimate party effects using panel data (*e.g.*, [Pettersson-Lidbom, 2008](#)). However, using within-municipality variation to identify the effect of having a left- or a right-wing government, those municipalities with no government turnover (*i.e.*, a change of power between left-wing, right-wing or undefined governments) during the elections that I am considering will not be used to identify that effect. In Table 4, one can see that more than half of the municipalities had zero government turnovers during these years. Therefore, the panel data approach does not seem the most appropriate.

Table 4: Government turnover

Turnovers	Municipalities
0	3061
1	1710
2	517

3.2 Budgetary data

Annual data on local budgets from 1996 to 2007, for a number of municipalities ranging from 6358 to over 8000, depending on the year, is available at the *Secretaría de Estado de Administraciones Públicas* (Secretary of State for Public Administrations) webpage. Since after merging this dataset with the population data and excluding those municipalities below 250 inhabitants, the number of observations is reduced to around 5000 per year, it is reasonable to think that the unbalance among years is due to very small municipalities.

This data includes total revenues and expenses, and distinguishes among 9 groups of revenues (direct and indirect taxation, fees, current transfers, patrimonial revenues, real investments sales, capital transfers, and financial assets and liabilities) and 8 groups of expenses (personnel, goods and services, financial expenses, current transfers, real investments, capital transfers, and financial assets and liabilities).⁶

Average revenues and expenses per capita are around 900 euros, with direct taxation and fees being more important than indirect taxation, and transfers being a primary source of revenues; expenditures in personnel, goods and services and real investments are the most important expenses.

Table 5: Revenues (euros per capita). Final sample

	Mean	Standard Deviation
Direct taxation	157.08	253.63
Indirect taxation	36.66	107.01
Fees and other revenues	142.98	283.03
Current transfers	210.13	306.68
Patrimonial revenues	35.13	125.52
Real investment sales	41.44	129.40
Capital transfers	211.63	419.58
Financial assets	2.86	20.58
Financial liabilities	49.03	174.16
TOTAL	886.96	1351.64

Table 6: Expenses (euros per capita). Final sample

	Mean	Standard Deviation
Personnel	197.24	290.45
Goods and services	220.91	339.05
Financial expenses	11.09	18.76
Current transfers	45.51	75.72
Real investments	364.95	603.73
Capital transfers	16.10	128.79
Financial assets	1.51	12.51
Financial liabilities	23.84	40.22
TOTAL	881.16	1277.45

⁶According to the Annexes III and IV of the *ORDEN EHA/3565/2008 de 3 de diciembre, por la que se aprueba la estructura de los presupuestos de las entidades locales*. An exhaustive summary of these categories can be found in the Appendix.

3.3 Population data and final sample

Finally, population data for the year 1996 and from 1998 to 2007⁷ for 8122 municipalities, is available in the *Padrón Municipal de Habitantes* (register of inhabitants) at the *INE* (*Instituto Nacional de Estadística*, Spanish Statistical Office) webpage.

After merging the population and budgetary datasets, calculating mean electoral term variables, and merging the resulting data with the electoral dataset, my final panel consists of 16669 observations.

Table 7 shows means for left- and right-wing governments and their difference in means. Surprisingly (for ideological a priori), right-wing municipalities seem to raise much more revenues and spend more money than left-wing municipalities. This can suggest a strong selection bias and is at the heart of the methodology used in this article.

Table 7: Descriptive statistics for left- and right-wing governments

	Left-wing governments	Right-wing governments	Difference in means
TOTAL REVENUES	847.95	909.25	-61.29***
Direct taxation	147.11	158.36	-11.25***
Indirect taxation	32.30	37.46	-5.16***
Fees and other revenues	136.05	146.12	-10.07**
Current transfers	212.57	210.70	1.87
Patrimonial revenues	27.88	41.03	-13.15***
Real investment sales	36.79	41.18	-4.39***
Capital transfers	205.63	223.33	-17.69***
Financial assets	2.57	3.07	-0.51*
Financial liabilities	47.06	48.00	-0.94
TOTAL EXPENSES	843.30	902.40	-59.10***
Personnel	207.43	185.30	22.13***
Goods and services	201.94	236.17	-34.24***
Financial expenses	11.48	10.30	1.18***
Current transfers	45.35	43.68	1.67*
Real investments	337.58	385.16	-47.57***
Capital capital transfers	13.40	17.57	-4.17**
Financial assets	1.53	1.45	0.08
Financial liabilities	24.60	22.77	1.82***
% Votes Left	65.09	29.93	35.16***
Population	8355	7340	1015
Number of municipalities	6782	7187	

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

⁷In order to fill the gap and get the data for 1997, I simply take the average of year 1996 and 1998.

4 Regression model

If we assume that the Spanish political system can be characterized as a two-block majoritarian one, with some parties consistently labeled as *left-wing* and some others labeled as *right-wing* (as Solé-Ollé and Viladecans-Marsal, 2013 does), we can estimate regression discontinuity models including a dependent variable, a treatment indicator (in our case, having a left-wing government), a control function, *i.e.*, some low-order polynomial in the assignment variable, and an indicator variable for undefined majority governments (such as in Pettersson-Lidbom, 2008).

In order to interpret the coefficient of the treatment variable as a percentage change, it is required to take the logarithm of the dependent variables; however, given the high number of observations with some of their fiscal variables equal to zero, I will consider several methods. One possibility is to transform the dependent variable adding a small quantity in order to be able to take logarithms:

$$y'_i = y_i + \xi \quad (1)$$

where ξ is an arbitrarily small number, and then run a linear regression.

Furthermore, we can estimate a Tobit model such that:

$$y_i = \begin{cases} y_i^* & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases}, \quad y_i^* = \beta x_i + u_i, \quad u_i \sim N(0, \sigma^2) \quad (2)$$

Although it is common in the literature to use panel data, given the results in Table 3, *i.e.*, considering that almost 58% of the municipalities had no government turnover during the years in my dataset, and therefore, that these observations would not be used to identify effects if using within-municipality variation, I will estimate Tobit models considering the dependent variable in logarithms after a transformation, and giving up the time dimension:

$$y'_i = \alpha + \beta T_i + f(\text{Seat Margin}_i) + \gamma \text{Indep}_i + \phi Z_i + \text{Term}_{2i} + \text{Term}_{3i} + \epsilon_i \quad (3)$$

where y'_i is the logarithm of a per capita fiscal outcome of municipality i , T_i is a treatment indicator equal to 1 if the government is left-wing (*i.e.*, if it has a majority of seats from parties labeled as left-wing) and zero if is not, $f(\text{Seat Margin}_i)$ is a control function (*i.e.*, a low-order polynomial in the margin of the left- over the right-wing parties).

Following [Artés and Jurado \(2016\)](#), I considered the best operationalization of the forcing variable in this context to be the *Seat Margin*, *i.e.*, the number of seats by which the left is above the minimum needed to have a majority government. It is defined as:

$$Seat\ Margin_i = Left\ Seats_i - Int\left(\frac{Total\ Seats_i}{2}\right) \quad (4)$$

where the first element in the right hand side is number of seats obtained by the left-wing parties and the second element is the number of seats needed to have a majority.

I also include time (term) dummies and, in some specifications, additional covariates, such as the logarithm of the population and a Herfindahl concentration index:

$$Concentration_i = \sum_{j=1}^N s_{ji}^2, \quad s_{ji} = Seats_{ji}/Total\ Seats_i \quad (5)$$

where $Seats_{ji}$ is the number of seats of party j in municipality i .

The parameter of interest is β , which measures the *party effect*, *i.e.*, the average difference in economic outcomes between left- and right-wing governments.

5 Results

Results for a Tobit regression are presented in Tables 8 and 9. There are positive and significant differences between left- and right-wing governments in total expenditures and expenses. However, as [McDonald and Moffitt \(1980\)](#) point out, it is wrong to consider the Tobit beta coefficients as the correct regression coefficients for observations above the limit. Therefore, in order to provide interpretation, in Tables 14 and 15 in the Appendix, I present linear regressions. The coefficients are bigger in the latter case, but the sign and significance are similar, at least for the majority of sub-groups.

Considering the results from the linear regression, having a left-wing government increases total revenues by 9-11% and expenditures by the same amount. This result is robust across specifications, considering different degrees of the control function, and adding some covariates, such as the logarithm of the population and a concentration index (see Tables 18 and 19 in the Appendix).

If we take disaggregate categories, higher revenues are a consequence of a higher level of direct taxation and indirect taxation (although there is much more

variability among specifications), and fees and other revenues, being 10.5-11.9% higher in left-wing municipalities. Besides, those municipalities receive more current transfers. Higher expenses are driven by spending more in personnel, goods and services and current transfers (again, there is high significance but high variability among specifications) and more real investments (9-13.7% higher in left-wing municipalities).

It is worth to notice that the party effects are found only in those expenses that are directly related to the direct or indirect provision of public goods: either in the form of personnel, goods and services, subsidies, and investment in future goods.

Table 8: Party Effects: Revenues

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL REVENUES	0.0851*** (0.0222)	0.0772*** (0.0223)	0.0923*** (0.0253)	0.0729*** (0.0260)
Direct taxation	0.0623*** (0.0197)	0.0456** (0.0197)	0.0877*** (0.0223)	0.0801*** (0.0230)
Indirect taxation	0.3138*** (0.0419)	0.2663*** (0.0418)	0.2668*** (0.0474)	0.2062*** (0.0488)
Fees and other revenues	0.1021*** (0.0240)	0.0982*** (0.0241)	0.0858*** (0.0273)	0.0842*** (0.0281)
Current transfers	0.1078*** (0.0183)	0.0999*** (0.0183)	0.0766*** (0.0207)	0.0636*** (0.0214)
Patrimonial revenues	-0.0694* (0.0410)	-0.0439 (0.0411)	0.0020 (0.0465)	0.0207 (0.0479)
Real investment sales	0.1941** (0.0974)	0.1236 (0.0972)	0.1262 (0.1106)	0.0034 (0.1139)
Capital transfers	0.0527 (0.0407)	0.0714* (0.0408)	0.1032** (0.0463)	0.0616 (0.0476)
Financial assets	0.5353*** (0.1082)	0.4598*** (0.1087)	0.4062*** (0.1243)	0.3401*** (0.1276)
Financial liabilities	0.3168*** (0.0819)	0.2341*** (0.0817)	0.2287** (0.0928)	0.1516 (0.0954)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Patrimonial revenues* and three for *Financial assets*. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Party Effects: Expenses

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL EXPENSES	0.0855*** (0.0222)	0.0776*** (0.0223)	0.0927*** (0.0252)	0.0732*** (0.0260)
Personnel	0.1610*** (0.0193)	0.1465*** (0.0193)	0.1045*** (0.0219)	0.0990*** (0.0225)
Goods and services	0.1610*** (0.0193)	0.1465*** (0.0193)	0.1045*** (0.0219)	0.0990*** (0.0225)
Financial expenses	0.1164*** (0.0372)	0.0647* (0.0370)	0.0194 (0.0419)	-0.0163 (0.0431)
Current transfers	0.1678*** (0.0278)	0.1417*** (0.0278)	0.1467*** (0.0315)	0.1208*** (0.0324)
Real investments	0.0709** (0.0288)	0.0733** (0.0289)	0.1141*** (0.0328)	0.0715** (0.0337)
Capital transfers	-0.0063 (0.0746)	-0.0330 (0.0748)	-0.1732** (0.0848)	-0.1049 (0.0874)
Financial assets	0.3487*** (0.0866)	0.2730*** (0.0866)	0.2130** (0.0992)	0.1303 (0.1020)
Financial liabilities	0.1515*** (0.0439)	0.0966** (0.0437)	0.0643 (0.0495)	0.0162 (0.0510)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Financial assets*.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

6 Extending the analysis: mechanisms

Economic and political science literature stress the presence of constraints at the local level that can limit the impact of partisanship (Gerber and Hopkins, 2011). For example, even though there is evidence of partisanship at the U.S. national level, Ferreira and Gyourko (2009) finds no effect of a mayor being a Democrat or a Republican. In this section, I will consider two mechanisms that can limit the effect of having a left-wing government *vis-a-vis* having a right-wing government.

First of all, as Gerber and Hopkins (2011) points out, the constraints faced by cities vary across policy areas: one type of constraints are those derived from the

division of authority within levels of government, and they find that the influence of the mayor’s ideology is limited in policy areas where the authority is shared among governments. Therefore, partisanship should be stronger in policy areas where there is less overlapping authority, and lower for greater overlapping authority. Considering the competencies of a city council, those areas corresponding to municipalities below 20.000 inhabitants look more exclusive of a lower level of government (aspects such as streetlight, garbage collection, water supply, etc.); on the other hand, those areas exclusive of big cities (such as some degree of social policy or urban environment) are shared with upper levels of governments, *e.g.*, with the autonomous communities. Therefore, we should expect a lower party effect in those municipalities with population above 20.000 inhabitants. However, the effect could be the opposite: since in small municipalities competencies can be considered of a more technical nature, following the old adage attributed to New York’s Mayor LaGuardia which states that there is no Republican or Democratic way to pick up the garbage, one could think that here is where partisanship should be lower.

Secondly, it is reasonable to think that a unified government may be more able to implement large policy changes and more extreme versions of its favorite policies. Fowler (2006) studied this for the upper-level of government in the United States but, *mutatis mutandis*, one can think on the same predictions in a parliamentary system, of which a city council is a scaled-down version: *i.e.*, the party effect being higher in highly concentrated councils.

We can therefore test whether the impact of political partisanship varies with any of these two mechanisms. Now, we are estimating regression models of this form:

$$y_i^* = \alpha + \beta_1 T_i + f(SM_i) + \beta_2 H_i + \beta_3 T_i * H_i + \gamma Indep_i + \phi Z_i + Term_{2i} + Term_{3i} + \epsilon_i \quad (6)$$

where H_i is a dummy variable equal to one if one of these conditions hold:

- The municipality is above 20.000 inhabitants,
- the concentration index (Equation 5) is above the median value,

and the rest of variables are defined as in Equation (3). The coefficient of interest is now β_3 , the party effect in those municipalities that fulfill one of the conditions above.

The effects of the level of competencies are shown in Tables 10 and 11. In these tables, as well as in Tables 12 and 13, only the specification with the polynomial of optimal order is shown.

Table 10 shows that the effect of having a left-wing government in the total level of revenues persists when considering the size/level of competencies dummy. The party effects are also robust for the four categories of revenues mentioned above: direct taxation, indirect taxation, fees and other revenues, and current transfers. In these categories, it does not seem that there is a significant effect of the interaction of a left-wing government in a city with the upper level of competencies, except for direct taxation: having a left-wing mayor in a city above 20.000 inhabitant increases further the party effect. For the other categories of revenues not considered in the previous section, it is worth to point out that there is a strong and significant effect of having a right-wing government in a big city: revenues related to patrimony or sales (either of real investments or financial assets) are much higher in big municipalities with a right-wing mayor. This suggests rightist governments alienating property in those cities. Table 11 shows a similar picture: having a left-wing mayor still has an effect, but there are no further effects in bigger municipalities. However, left-wing governments in big cities seem to spend less in personnel, counteracting the pure party effect. The positive effect of population in expenses means nothing *per se*: according to [Egger and Koethenburger \(2010\)](#), may simply reflect a higher demand for public spending following a rise in population size, either for aggregate and per capita values.

Tables 12 and 13 point out to a great relevance of the degree of concentration of the city council in the existence of party effects. For the total revenues and for two of the four groups of revenues considered primarily, the effect of having a left-wing government turns insignificant; in any case, all coefficients are smaller in this specification. However, it turns out a sizeable effect of having a left-wing mayor in a highly concentrated council, for the total level of revenues and for fees (also for current transfers, but the role of concentration looks more unclear in that case). In the case of expenses, the party effect in municipalities with highly concentrated councils is positive and significant for the total, and for personnel, goods and services, and real investments.

Table 10: Party Effects: Level of Competencies (Revenues)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Direct tax.	Indirect tax.	Fees	Current transfers	Patrimonial rev.	Real inv. sales	Capital transfers	Financial assets	Financial liabilities
Left	0.0751*** (0.0262)	0.0803*** (0.0223)	0.2301*** (0.0470)	0.0872*** (0.0239)	0.0681*** (0.0215)	0.0121 (0.0391)	0.0781 (0.1108)	0.0572 (0.0459)	0.3927*** (0.1100)	0.1893** (0.0919)
Big (>20.000 inhab.)	0.0429 (0.0471)	0.0137 (0.0400)	-0.5084*** (0.0838)	-0.1189** (0.0498)	-0.0084 (0.0386)	1.3696*** (0.0815)	-0.5963*** (0.1864)	-0.1770** (0.0826)	-0.0939 (0.1858)	-0.9247*** (0.1588)
Left*Big	-0.0375 (0.0592)	0.1568*** (0.0504)	0.0149 (0.1053)	0.0344 (0.0618)	-0.0606 (0.0486)	-0.3439*** (0.1009)	-0.5308** (0.2322)	-0.2403** (0.1038)	-0.5223** (0.2246)	0.1910 (0.1986)
Undefined maj.	0.0465** (0.0195)	0.0650*** (0.0166)	0.3169*** (0.0349)	0.0571*** (0.0208)	-0.0089 (0.0160)	0.1760*** (0.0341)	0.1681** (0.0819)	-0.0788** (0.0341)	0.2962*** (0.0951)	0.1143* (0.0682)
Population	0.0100* (0.0061)	0.1433*** (0.0052)	0.3836*** (0.0109)	0.1093*** (0.0065)	0.0238*** (0.0050)	-0.4111*** (0.0104)	0.8205*** (0.0258)	-0.2980*** (0.0106)	0.7178*** (0.0311)	0.7611*** (0.0213)
Observations	16669	16669	16669	16669	16669	16668	16669	16669	16666	16669

Standard errors in parentheses. Each entry is a separate regression. The optimal polynomial order has been chosen according to the Akaike Information Criterion. All regressions include term dummies and an indicator for undefined majority governments. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Party Effects: Level of Competencies (Expenses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total	Personnel	Goods/Services	Financial expenses	Current transfers	Real investments	Capital transfers	Financial assets	Financial liabilities
Left	0.0754*** (0.0261)	0.1273*** (0.0185)	0.0610*** (0.0189)	0.0026 (0.0397)	0.1261*** (0.0321)	0.0728** (0.0336)	-0.0917 (0.0879)	0.1813* (0.1026)	0.0338 (0.0485)
Big (>20.000 inhab.)	0.0444 (0.0470)	-0.1433*** (0.0387)	0.1118*** (0.0396)	-0.1940*** (0.0704)	0.2829*** (0.0578)	-0.0557 (0.0605)	0.7919*** (0.1517)	-0.3619** (0.1420)	-0.4860*** (0.0862)
Left*Big	-0.0378 (0.0591)	-0.1244*** (0.0480)	0.0313 (0.0491)	0.1218 (0.0884)	-0.0141 (0.0726)	-0.1336* (0.0761)	-0.2192 (0.1886)	-0.2187 (0.1719)	0.2121** (0.1081)
Undefined maj.	0.0463** (0.0194)	0.0995*** (0.0162)	0.0001 (0.0166)	0.0258 (0.0296)	0.1001*** (0.0239)	0.0182 (0.0250)	0.2573*** (0.0653)	0.1294* (0.0740)	-0.0475 (0.0361)
Population	0.0080 (0.0061)	0.1677*** (0.0049)	-0.0127** (0.0050)	0.4271*** (0.0092)	0.1050*** (0.0074)	-0.0986*** (0.0078)	0.1159*** (0.0204)	0.7180*** (0.0252)	0.4419*** (0.0112)
Observations	16669	16669	16669	16669	16669	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. The optimal polynomial order has been chosen according to the Akaike Information Criterion. All regressions include term dummies and an indicator for undefined majority governments. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Party Effects: Level of Concentration (Revenues)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Direct tax.	Indirect tax.	Fees	Current transfers	Patrimonial rev.	Real inv. sales	Capital transfers	Financial assets	Financial liabilities
Left	0.0411 (0.0297)	0.0322 (0.0228)	0.1982*** (0.0533)	0.0371 (0.0288)	0.0412* (0.0244)	-0.0640 (0.0479)	0.0298 (0.1239)	-0.0361 (0.0521)	0.3754*** (0.1409)	0.2492** (0.1032)
Concentration	-0.0316 (0.0207)	-0.0391** (0.0172)	-0.0234 (0.0373)	-0.0599*** (0.0220)	0.0053 (0.0170)	0.0385 (0.0366)	-0.0155 (0.0879)	-0.0643* (0.0363)	-0.1102 (0.1050)	-0.0942 (0.0728)
Left*Concentration	0.0635** (0.0281)	0.0009 (0.0237)	0.0538 (0.0505)	0.0973*** (0.0299)	0.0464** (0.0231)	0.0843* (0.0497)	0.0171 (0.1183)	0.1542*** (0.0493)	0.0225 (0.1386)	-0.1248 (0.0985)
Undefined maj.	0.0327 (0.0210)	0.0512*** (0.0177)	0.3200*** (0.0377)	0.0359 (0.0224)	-0.0073 (0.0172)	0.1512*** (0.0372)	0.1869** (0.0882)	-0.0984*** (0.0368)	0.2622*** (0.1011)	0.1075 (0.0734)
Population	0.0118** (0.0059)	0.1423*** (0.0047)	0.3354*** (0.0106)	0.0961*** (0.0063)	0.0254*** (0.0049)	-0.2826*** (0.0105)	0.7330*** (0.0248)	-0.3244*** (0.0104)	0.6601*** (0.0286)	0.6490*** (0.0207)
Observations	16669	16669	16669	16669	16669	16668	16669	16669	16666	16669

Standard errors in parentheses. Each entry is a separate regression. The optimal polynomial order has been chosen according to the Akaike Information Criterion. All regressions include term dummies and an indicator for undefined majority governments. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Party Effects: Level of Concentration (Expenses)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Total	Personnel	Goods/Services	Financial expenses	Current transfers	Real investments	Capital transfers	Financial assets	Financial liabilities
Left	0.0416 (0.0297)	0.0840*** (0.0241)	0.0161 (0.0228)	-0.0067 (0.0449)	0.1166*** (0.0365)	0.0082 (0.0382)	-0.0917 (0.0996)	0.0651 (0.1090)	0.0352 (0.0549)
Concentration	-0.0313 (0.0207)	-0.0384** (0.0172)	-0.0238 (0.0172)	-0.0404 (0.0315)	0.0280 (0.0255)	-0.0628** (0.0266)	0.1138 (0.0702)	-0.4552*** (0.0819)	-0.0582 (0.0384)
Left*Concentration	0.0631** (0.0281)	0.0568** (0.0234)	0.0796*** (0.0237)	0.0275 (0.0426)	0.0235 (0.0346)	0.1114*** (0.0361)	-0.0034 (0.0946)	0.2282** (0.1095)	0.0092 (0.0521)
Undefined maj.	0.0326 (0.0210)	0.0914*** (0.0175)	-0.0140 (0.0177)	0.0139 (0.0319)	0.1023*** (0.0258)	-0.0042 (0.0270)	0.2793*** (0.0706)	-0.0009 (0.0782)	-0.0588 (0.0389)
Population	0.0100* (0.0059)	0.1471*** (0.0049)	0.0024 (0.0047)	0.4082*** (0.0090)	0.1388*** (0.0073)	-0.1122*** (0.0076)	0.2081*** (0.0197)	0.5970*** (0.0222)	0.3937*** (0.0110)
Observations	16669	16669	16669	16669	16669	16669	16669	16668	16669

Standard errors in parentheses. Each entry is a separate regression. The optimal polynomial order has been chosen according to the Akaike Information Criterion. All regressions include term dummies and an indicator for undefined majority governments. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

7 Conclusion

The purpose of this Master Thesis was to study if the ideology of the mayor in a city council affects economic outcomes using closed local elections and a regression discontinuity design. I found positive and significant differences between left- and right-wing governments in total expenditures and expenses: having a left-wing government increases total revenues by 9-11% and expenditures by the same amount. I also found that the effect of the degree of competencies is small, but my results point out to right-wing governments raising a higher amount of revenues in bigger cities (those above 20.000 inhabitants) mainly by alienating property. Results also point out to a great relevance of the degree of concentration of the city council in the existence of party effects.

However, further research is needed. The dataset I have used is extense but incomplete: intersections are difficult to obtain (for years where is data for some aspects, there is no data for others), and I had to make many assumptions about the party control and the internal structure of blocs and coalitions.

Furthermore, technical issues, such as the existence of observations with groups of expenses and revenues equal to zero, have meant that, if I wanted to get results for all categories, some estimations would be too twisted. In any case, results are robust to many checks.

Finally, the *economic classification* of public expenses and revenues is not probably the best one to assess partisanship. However, the classification *by programs* is available just for the most recent years.

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APPENDIX

Expenses and revenues: Economic classification

REVENUES (Annex IV of the *ORDEN EHA/3565/2008, de 3 de diciembre, por la que se aprueba la estructura de los presupuestos de las entidades locales*)

- **Non-financial operations.**

Current operations.

1. Direct taxation: income tax, corporation tax, capital gains tax (council tax, vehicle tax, tax on the increase in value of urban land...), Business Activity Tax, etc.
2. Indirect taxation: Value Added Tax, excise tax (alcohol, beer, wine, tobacco, hydrocarbons, energy, petrol...), *ICIO* (tax on buildings, installations and works), etc.
3. Fees and other revenues: revenues from non-voluntary basic public services not provided by the private sector (water supply, sewerage, garbage collection...), revenues from non-voluntary social and preferential public services not provided by the private sector (hospital, care, education, sports...), fees for execution of activities with local competency (hunting and fishing fees, urban fees...), fees for privative use of public domain, *precios púbilicos* (museums or urban public transport fees...), fines, etc.
4. Current transfers: non-fiscal revenues without direct compensation, used for funding current operations.
5. Patrimonial revenues: non-fiscal revenues from property income or from activities subject to private law (bonds and shares, loans, deposits, dividends, rents...).

Capital operations.

6. Real investments sales: land, industrial property, valuable objects, etc.
7. Capital transfers: non-fiscal revenues without direct compensation, used for funding capital operations.

- **Financial operations.**

8. Financial assets: alienation of financial assets .
9. Financial liabilities: issuance of financial liabilities (public debt, loans, deposits...).

EXPENSES (Annex III of the *ORDEN EHA/3565/2008, de 3 de diciembre, por la que se aprueba la estructura de los presupuestos de las entidades locales*)

- **Non-financial operations.**

Current operations.

1. Personnel: fixed and variable salaries, contributions, social benefits and other expenses of local administration and directors, contract workers, public servants, ordinary employees, etc.
2. Current expenses in goods and services: acquisition of fungible non-inventoriable reiterative goods with an expected duration of less than one tax year; non-amortizable reiterative intangible expenses not directly related with investments (rentals, repairs and maintenance, materials and supplies, transportation...). Includes works carried out by other firms and professionals: expenses for which the municipalities are responsible but are carried out by external firms or independent professionals.
3. Financial expenses: interests (from public debt, loans, deposits...).
4. Current transfers: credits without direct compensation by the recipients, used for funding current operations (subsidies).
5. Contingency fund and other eventualities.

Capital operations.

6. Real investments: acquisition of non-fungible inventoriable non-reiterative goods with an expected duration of more than one tax year (infrastructure or inventoriable goods which are needed for amortizable services).
7. Capital transfers: credits without direct compensation by the recipients, used for funding capital operations.

- **Financial operations.**

8. Financial assets: purchase of financial assets.

9. Financial liabilities: repayment of public debt and loans.

Table 14: Party Effects: Revenues (Linear Regression)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL REVENUES	0.1008*** (0.0326)	0.0896*** (0.0327)	0.1100*** (0.0370)	0.0887** (0.0381)
Direct taxation	0.0779*** (0.0290)	0.0581** (0.0290)	0.1053*** (0.0329)	0.0959*** (0.0339)
Indirect taxation	0.4708*** (0.0650)	0.4018*** (0.0649)	0.3922*** (0.0735)	0.3067*** (0.0757)
Fees and other revenues	0.1188*** (0.0320)	0.1115*** (0.0321)	0.1051*** (0.0363)	0.1016*** (0.0374)
Current transfers	0.1235*** (0.0285)	0.1124*** (0.0286)	0.0943*** (0.0324)	0.0794** (0.0333)
Patrimonial revenues	-0.0580 (0.0447)	-0.0362 (0.0448)	0.0118 (0.0508)	0.0279 (0.0523)
Real investment sales	0.2047* (0.1044)	0.1016 (0.1043)	0.1169 (0.1182)	-0.0153 (0.1217)
Capital transfers	0.0806 (0.0572)	0.0925 (0.0573)	0.1246* (0.0650)	0.0745 (0.0669)
Financial assets	0.3074*** (0.0646)	0.2061*** (0.0641)	0.1135 (0.0726)	0.0748 (0.0748)
Financial liabilities	0.3968*** (0.1055)	0.2757*** (0.1052)	0.2631** (0.1192)	0.1703 (0.1228)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Patrimonial revenues* and three for *Financial assets*. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 15: Party Effects: Expenses (Linear Regression)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL EXPENSES	0.1012*** (0.0325)	0.0901*** (0.0326)	0.1103*** (0.0370)	0.0890** (0.0381)
Personnel	0.1774*** (0.0292)	0.1596*** (0.0292)	0.1229*** (0.0331)	0.1156*** (0.0341)
Goods and services	0.1774*** (0.0292)	0.1596*** (0.0292)	0.1229*** (0.0331)	0.1156*** (0.0341)
Financial expenses	0.2181*** (0.0574)	0.1485*** (0.0572)	0.0705 (0.0648)	0.0211 (0.0668)
Current transfers	0.2091*** (0.0384)	0.1765*** (0.0384)	0.1839*** (0.0435)	0.1503*** (0.0448)
Real investments	0.0918** (0.0373)	0.0908** (0.0375)	0.1372*** (0.0424)	0.0929** (0.0437)
Capital transfers	0.0641 (0.0934)	0.0184 (0.0936)	-0.1824* (0.1060)	-0.0970 (0.1092)
Financial assets	0.2604*** (0.0607)	0.1470** (0.0599)	0.0446 (0.0678)	-0.0065 (0.0699)
Financial liabilities	0.2567*** (0.0722)	0.1714** (0.0720)	0.0900 (0.0815)	0.0058 (0.0840)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Financial assets*.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 16: Party Effects: Revenues (Excluding CC and EA)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL REVENUES	0.0899*** (0.0222)	0.0802*** (0.0223)	0.0999*** (0.0253)	0.0796*** (0.0261)
Direct taxation	0.0603*** (0.0197)	0.0411** (0.0197)	0.0857*** (0.0224)	0.0783*** (0.0231)
Indirect taxation	0.3271*** (0.0418)	0.2706*** (0.0418)	0.2933*** (0.0475)	0.2282*** (0.0489)
Fees and other revenues	0.1047*** (0.0240)	0.1004*** (0.0241)	0.0895*** (0.0274)	0.0878*** (0.0283)
Current transfers	0.1246*** (0.0183)	0.1145*** (0.0183)	0.0974*** (0.0208)	0.0832*** (0.0215)
Patrimonial revenues	-0.0728* (0.0410)	-0.0430 (0.0411)	0.0121 (0.0466)	0.0304 (0.0481)
Real investment sales	0.2049** (0.0974)	0.1108 (0.0974)	0.1207 (0.1110)	-0.0183 (0.1146)
Capital transfers	0.0545 (0.0407)	0.0757* (0.0409)	0.1067** (0.0464)	0.0645 (0.0479)
Financial assets	0.5789*** (0.1085)	0.4728*** (0.1090)	0.4456*** (0.1251)	0.3745*** (0.1286)
Financial liabilities	0.3179*** (0.0819)	0.2194*** (0.0818)	0.2211** (0.0931)	0.1459 (0.0959)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Patrimonial revenues* and three for *Financial assets*. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 17: Party Effects: Expenses (Excluding CC and EA)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL EXPENSES	0.0901*** (0.0222)	0.0805*** (0.0223)	0.1001*** (0.0253)	0.0799*** (0.0261)
Personnel	0.1740*** (0.0193)	0.1565*** (0.0193)	0.1193*** (0.0219)	0.1113*** (0.0226)
Goods and services	0.1740*** (0.0193)	0.1565*** (0.0193)	0.1193*** (0.0219)	0.1113*** (0.0226)
Financial expenses	0.1320*** (0.0372)	0.0719* (0.0370)	0.0357 (0.0421)	0.0009 (0.0434)
Current transfers	0.1830*** (0.0278)	0.1514*** (0.0278)	0.1705*** (0.0315)	0.1435*** (0.0325)
Real investments	0.0699** (0.0288)	0.0723** (0.0290)	0.1161*** (0.0329)	0.0730** (0.0339)
Capital transfers	-0.0094 (0.0746)	-0.0390 (0.0749)	-0.1775** (0.0852)	-0.1059 (0.0878)
Financial assets	0.4014*** (0.0868)	0.2872*** (0.0869)	0.2501** (0.0998)	0.1583 (0.1028)
Financial liabilities	0.1652*** (0.0438)	0.1007** (0.0437)	0.0804 (0.0497)	0.0331 (0.0512)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies and an indicator for undefined majority governments. The sample has one missing observation for *Financial assets*.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 18: Party Effects: Revenues (Controls Added)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL REVENUES	0.0794*** (0.0223)	0.0756*** (0.0223)	0.0901*** (0.0253)	0.0732*** (0.0260)
Direct taxation	0.0330* (0.0190)	0.0329* (0.0190)	0.0993*** (0.0215)	0.0898*** (0.0221)
Indirect taxation	0.2365*** (0.0400)	0.2343*** (0.0401)	0.2709*** (0.0456)	0.2235*** (0.0468)
Fees and other revenues	0.0854*** (0.0238)	0.0899*** (0.0239)	0.0942*** (0.0271)	0.0907*** (0.0279)
Current transfers	0.1008*** (0.0183)	0.0977*** (0.0183)	0.0747*** (0.0208)	0.0643*** (0.0213)
Patrimonial revenues	-0.0128 (0.0395)	-0.0184 (0.0396)	-0.0171 (0.0450)	0.0023 (0.0462)
Real investment sales	0.0346 (0.0939)	0.0429 (0.0940)	0.1253 (0.1072)	0.0341 (0.1102)
Capital transfers	0.1075*** (0.0390)	0.0976** (0.0391)	0.0728 (0.0444)	0.0402 (0.0456)
Financial assets	0.4107*** (0.1096)	0.3921*** (0.1097)	0.4364*** (0.1260)	0.3858*** (0.1292)
Financial liabilities	0.1690** (0.0781)	0.1677** (0.0782)	0.2454*** (0.0890)	0.1875** (0.0914)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies, an indicator for undefined majority governments, the logarithm of the population, and a concentration index. The sample has one missing observation for *Patrimonial revenues* and three for *Financial assets*. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 19: Party Effects: Expenses (Controls Added)

	(1)	(2)	(3)	(4)
	Linear	Quadratic	Cubic	Fourth
TOTAL EXPENSES	0.0801*** (0.0222)	0.0763*** (0.0223)	0.0903*** (0.0253)	0.0734*** (0.0260)
Personnel	0.1332*** (0.0186)	0.1340*** (0.0186)	0.1166*** (0.0211)	0.1087*** (0.0217)
Goods and services	0.1332*** (0.0186)	0.1340*** (0.0186)	0.1166*** (0.0211)	0.1087*** (0.0217)
Financial expenses	0.0262 (0.0338)	0.0254 (0.0338)	0.0337 (0.0384)	0.0065 (0.0395)
Current transfers	0.1360*** (0.0274)	0.1296*** (0.0274)	0.1495*** (0.0311)	0.1279*** (0.0320)
Real investments	0.0863*** (0.0286)	0.0815*** (0.0287)	0.0994*** (0.0325)	0.0638* (0.0334)
Capital transfers	-0.0423 (0.0747)	-0.0502 (0.0749)	-0.1512* (0.0851)	-0.0925 (0.0874)
Financial assets	0.1932** (0.0853)	0.1699** (0.0854)	0.2300** (0.0982)	0.1472 (0.1009)
Financial liabilities	0.0621 (0.0412)	0.0593 (0.0413)	0.0752 (0.0469)	0.0387 (0.0482)
Observations	16669	16669	16669	16669

Standard errors in parentheses. Each entry is a separate regression. All regressions include term dummies, an indicator for undefined majority governments, the logarithm of the population, and a concentration index. The sample has one missing observation for *Financial assets*.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

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