

Far-Left Populists in Power: The Legacy of *Podemos* on Spanish Local Governments

MSc in Economics at UB: Master Thesis (June 2024)

Author: Roger Llurda Marí

Advisor: Albert Solé-Ollé

ABSTRACT

This paper investigates the impact of the far-left Spanish party *Podemos* on municipal governance, focusing on budgetary, economic, and social outcomes. Emerging from the 15-M Movement's protests against corruption and the economic crisis, *Podemos* disrupted Spain's traditional bipartisan system. Using a Regression Discontinuity Design based on the 5% electoral threshold for municipal representation, this study reveals that *Podemos* had limited effects on municipal budgets, and on socio-economic indicators. However, *Podemos'* presence was associated with increased political polarization, evidenced by higher vote shares for far-right parties in subsequent elections. This research enhances understanding of the consequences of political fragmentation on governance and social cohesion in Spain.

Keywords: Podemos, VOX, Municipalities, Regression Discontinuity Design (RDD), Socio-Economic outcomes, Polarization, Populism

1. Introduction

The Spanish political landscape has undergone significant transformations in recent decades. Historically characterized by a stable bipartisan system dominated by the *Partido Socialista Obrero Español* (PSOE) and the *Partido Popular* (PP), the political arena was disrupted by the financial crisis of 2008 (Orriols, L., and Cordero, G., 2016). This crisis, which had profound economic and social repercussions, led to widespread discontent among the Spanish population. This discontent reached a critical point in 2011 with the emergence of the 15-M Movement, also known as the Indignados Movement, where massive gatherings of disenchanting citizens occupied public spaces in protest against political corruption, economic austerity, and social inequality.

The 15-M Movement served as a catalyst for the birth of new political forces, most notably *Podemos*, a populist far-left party that sought to channel the popular discontent into a coherent political program (Sanz et al., 2022). *Podemos*, founded in 2014, presented itself as a fresh alternative to the established parties, advocating for social justice, transparency, and direct democracy. The party made its first entry into the Spanish political system in the municipal elections of 2015. Since then, *Podemos* has continued to be a formidable presence in Spanish politics, often playing a critical role in coalition governments at various levels.

The study leverages the electoral threshold for municipal representation, set at 5% of the vote, to implement a Regression Discontinuity Design (RDD) that allows for a causal inference of *Podemos'* entry effects. By examining municipal budgets, economic outcomes such as housing and unemployment, and social indicators including gender disparities or polarization, among others, this paper seeks to offer a comprehensive assessment of *Podemos'* influence. Findings suggest that *Podemos* has not had an impact either on municipal budgets or on socio-economic outcomes.

However, one notable exception is a significant increase in political polarization, evidenced by a rise in votes for the far-right party VOX in subsequent elections. The results highlight the complex and sometimes paradoxical effects of *Podemos'* entry into Spanish politics, suggesting that while it failed to make effective changes in its direction, it significantly contributed to the rise of Vox, a political force with opposing proposals.

The main contributions to the existing literature are twofold. First, while there has been extensive research on far-right political parties, studies on far-left parties are relatively scarce. The limited research that does exist primarily focuses on the causes behind the emergence of far-left parties, not the consequences of it—for example Sanz et al. (2022)–. Second, the research builds on and adds to existing studies, such as Acemoglu et al., (2022) which suggest that the rise of far-right parties can be seen as a backlash against the rise of far-left parties.

2. Institutional Context

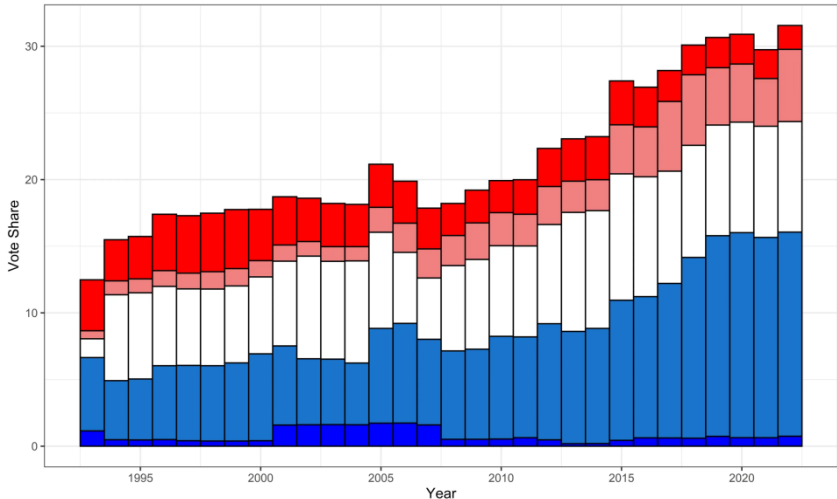
2.1. Populism in Europe

In recent decades, Europe has witnessed a significant rise in populist movements, both on the right and the left of the political spectrum (Rooduijn et al., 2023). Populism, broadly defined, is a political approach that seeks to represent the interests of ordinary people, often confronting them against a perceived corrupt elite. On the right, parties such as France's *Rassemblement National*, Italy's *Lega Nord*, Germany's *Alternative für Deutschland* (AfD), or VOX in Spain have gained substantial traction. In 2022, Marine Le Pen of *Rassemblement National* garnered 41% of the votes in the second round of the French presidential elections. In Germany, the AfD secured more than 10% of the votes in the 2021 federal elections. Similarly, VOX in Spain experienced a dramatic rise, increasing its share from ~0% in 2015 to 15% in the 2019 general elections.

These parties often emphasize nationalism, anti-immigration policies, and skepticism towards the European Union.

On the left, populist movements such as Greece's *Syriza* and Spain's *Podemos* have also emerged. *Syriza* reached up to 36% of the votes in the 2015 Greek parliamentary elections. In Spain, *Podemos* entered the government in 2020, securing the vice presidency and two ministries: Equality and Social Rights and the 2030 Agenda. Italy's *Movimento 5 Stelle*, although it is a slightly different case, could also be included in this category of left populists. These parties typically focus on economic redistribution, anti-austerity measures, social justice, and increasing democratic participation.

Figure 1: Vote Share of Populist, Far-Right and Far-Left Parties on Europe



Note: The figure has been elaborated by "The PopuList" team (Rooduijn, et al., 2023). The figure shows the evolution in vote share of different types of parties in Europe. In red the far-left, in light red the far-left populists, in white the populists, in light blue the far-right populists and in blue the far-right.

2.2. The Spanish Political Context

Spain's transition from dictatorship to democracy began with the death of Francisco Franco in 1975. The subsequent democratization process led to the establishment of a parliamentary monarchy, with the first democratic elections held in 1977. The Spanish political landscape quickly evolved into a bipartisan system dominated by two major parties: *Partido Socialista Obrero Español* (PSOE) and *Partido Popular* (PP).

The PSOE, a center-left party, and the PP, a center-right party, alternated in power, shaping Spanish politics for decades. Alongside these major parties, smaller parties like *Izquierda Unida* (IU) and regional parties such as *Convergència i Unió* (CIU) or *Euzko Alderdi Jeltzalea-Partido Nacionalista Vasco* (EAJ-PNV) to say a few, played a significant role, particularly in regional and local politics.

The early 2000s saw Spain experiencing significant economic growth, but this boom was rather unsustainable and largely driven by a real estate bubble (Fernández-Villaverde et al., 2013). When the 2008 global financial crisis hit, Spain was severely affected, leading to a prolonged economic recession, high unemployment rates, and widespread social discontent. The crisis also brought to light numerous corruption scandals involving both major parties, eroding public trust in the political establishment. High-profile cases such as the Gürtel case, implicating members of the PP, and the ERE case in Andalusia, involving the PSOE, further fueled public outrage. (Sanz et al., 2022; Costas et al., 2012; Solé-Ollé & Sorribas, 2018)

In response to the economic crisis and political corruption, the 15-M Movement, also known as the Indignados Movement, emerged in May 2011. This movement saw massive gatherings of citizens, particularly young people, who occupied public squares across Spain to protest against austerity measures, unemployment, and political corruption. The movement's slogan, "Real Democracy Now," encapsulated the demand for a more participatory and transparent political system.

The 15-M Movement was characterized by its grassroots nature, with participants organizing in decentralized, horizontal assemblies. These assemblies facilitated open discussions and decision-making processes, emphasizing direct democracy and collective action. Although initially seen as a spontaneous and disorganized protest, the movement gradually evolved into a more structured entity, giving rise to new political initiatives and parties. (Orriols & Cordero, 2016)

One of the most significant outcomes of the 15-M Movement was the formation of *Podemos* in 2014. *Podemos* was founded by a group of academics and activists, including Pablo Iglesias, a university professor, activist, and presenter of the political talk show "*La Tuerka*". Iglesias, with his charismatic presence and adept use of media, quickly became the face of the party.

Podemos aimed to harness the widespread discontent articulated by the 15-M Movement and translate it into a viable political force. The party's platform focused on social justice, transparency, anti-corruption measures, and democratic reforms. From its inception, *Podemos* had ambitious plans. The party's goal was not merely to win local elections but to secure a majority in the Spanish Congress of Deputies. To avoid diluting its brand and to strategically maximize its impact, *Podemos* initially participated in the 2015 municipal elections under various "white label" brands—coalitions with other leftist groups that did not carry the *Podemos* name. This approach allowed the party to gain a foothold in local politics without risking its nascent national identity.

The municipal policy agenda experienced a shift with the rise of this new movement. Previously, the focus was primarily on urban development, real estate projects, and business activities. However, since 2015, the political agenda has been redirected towards social policies, affordable housing, feminism, environmental sustainability and mobility¹.

In 2015, *Podemos* along with other similar forces, won the governorship in Madrid, Barcelona, Zaragoza, La Coruña, Ferrol, Santiago de Compostela, and Cádiz. Of these, only Barcelona and Cádiz held out until 2019, with Barcelona barely surviving thanks to the unexpected support of Ciudadanos, a right-wing party determined to prevent an independentist mayor. Finally, after eight years in power, 2023 marked the end of the last two bastions of what was the 15M movement at the townhall level².

¹ https://www.eldiario.es/opinion/tribuna-abierta/legado-declive-vigencia-ayuntamientos-cambio_129_1516030.html

² <https://www.historiaelectoral.com/muni4.html>

In the elections at the other levels electoral results were similar. In the Autonomous Communities they went from 168 seats in 2018 to 77 in 2020 and 33 by 2023³. For the general ones, in 2015 *Podemos* received over 20% of the votes, while in 2019, this figure dropped to approximately 13%. In 2023, the left-wing parties to the left of the PSOE-*Podemos* included–united under a new brand called *Sumar*, which aimed to refresh the image of the left. However, this united candidacy did not achieve more than 13% of the vote⁴.

2.3. The Spanish Electoral System

Spain operates under a parliamentary monarchy, where both the government and the monarchy coexist. The electoral system in Spain is a complex framework that facilitates the democratic selection of representatives at multiple levels: national, regional, and local. This system is characterized by proportional representation, which aims to ensure that the distribution of seats in the legislative bodies closely matches the distribution of votes among the parties.

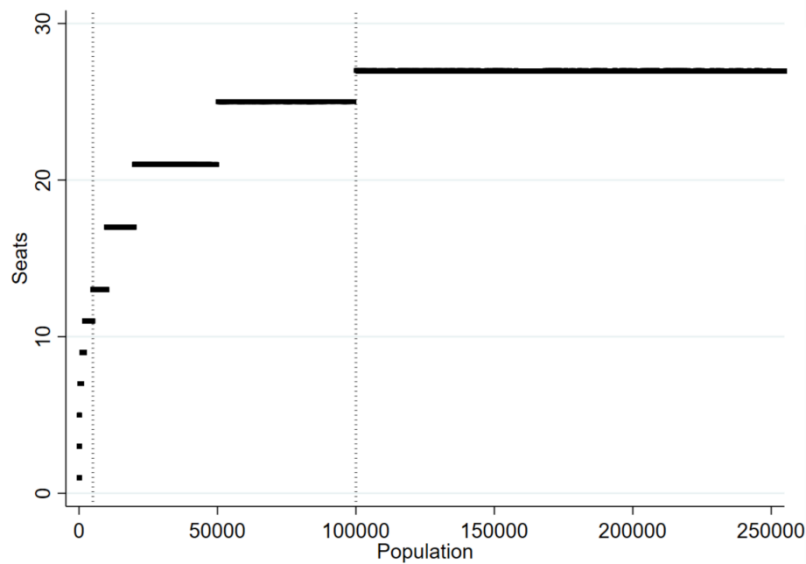
Spain's electoral process follows the D'Hondt method, a highest averages method for allocating seats in party-list proportional representation systems. The seats are allocated in the following way: 1) Each party presents a list of candidates in each constituency; 2) Votes are counted, if a party does not cross a minimum threshold of vote share (5% for local elections) its eliminated from the process; 3) The total number of votes for each party is divided by a series of divisors–1, 2, 3, 4, etc.– and the resulting values are used to allocate seats, from highest to lowest, until all seats are filled.

Spain's political structure, asides for the central government, is divided into several regions and subregions, each one with some type of self government: 1) Autonomous Communities; 2) Provinces; and finally 3) Municipalities: Spain is divided by 8132 municipalities which is the measure relevant for this paper. The governing bodies at this level are the townhalls.

³ <https://www.rtve.es/noticias/20230529/mapa-podemos-del-asalto-cielo-batacazo-electoral-menos-decada/2447908.shtml>

⁴ https://es.wikipedia.org/wiki/Podemos#Resultados_electorales

Figure 2: Relationship Between Total Seats and Population.



Note: The figure shows the relation between the total seats of the local government and population of the municipality. Discontinuous lines show the scope relevant for this paper analysis.

These local authorities have councilors who are elected through the proportional representation system and closed lists. The number of councilors varies depending on the population size of the municipality, being relatively high for low populated municipalities compared to those with high population (Figure 2). In a municipality with 250 inhabitants, there is 1 seat for every 50 people, while for a municipality with a population of 100.000 there is only 1 seat for every 4.000 inhabitants.

The mayor, head of the municipality, is elected by the council members, if there is no party with more than half the seats, the mayor will be decided through negotiation. In the case that no successful negotiation is achieved, the most voted candidate wins.

Local authorities have significant powers and are responsible for a large list of duties such as: public safety; traffic management; civil protection; urban planning; environmental protection; markets and consumer protection; primary healthcare participation; cemetery and funeral services; social services and reintegration; water supply, street lighting; waste management and

sanitation; public transportation; cultural, sports, and leisure activities; tourism; and cooperation with educational authorities in school planning.

Municipal funding is sustained by three primary sources; 1) Transfers from higher levels of government—mainly from the State, but also from regional authorities and provincial councils, which are based on factors like population—; 2) Taxes collected by the municipalities, and; 3) Service fees, such as those for waste collection and the use of public spaces (e.g., terrace permits). Transfers are substantial, making up slightly more than 35% of total revenue according to the Ministry of Finance. However local taxes such as the Property Tax (IBI), the Vehicle Tax (IVTM), and the Business Tax (IAE) are the main revenue source, accounting for 40% of it.

3. Theoretical Framework

3.1. Two-Party and Multi-Party Systems

The theoretical framework of this paper delves into the differences between the effects of two-party systems and multiparty systems on policy implementation. In two-party systems, such as the traditional bipartisan landscape in Spain prior to the emergence of *Podemos*, the median voter theorem suggests that policy outcomes tend to be more stable and predictable. This stability stems from the necessity of each party to appeal to the majority of voters, and the unique equilibrium of this strategy, under certain assumptions, results in policies that aim to attract the median voter (Downs, 1957). The consequences of this is that parties do not differ in the policy they implement. This framework is equivalent to the one described in the Hotelling Law (Hotelling, 1929), in which firms—given a one dimensional line—settle in the middle of the line in order to attract the largest possible number of customers. In a multi party system however, there is no static equilibrium.

One thing to be considered is that the assumptions of this framework may be too rigid. If we also consider abstention, information asymmetries, parties having ideological motives or if we consider that the voters are not allocated into a one dimensional ideological spectrum, the equilibrium diverges from the one preferred by the median voter. Empirical evidence, fails to prove that the median voter is decisive in policy making, suggesting that some other factors, like the ones mentioned above also play a role (Casey et al., 1979; Scervini, 2012). Nevertheless, changes in the strategic behavior of old parties can still be expected when a third player enters the game. Even if the new party is not going to win the elections, merely being part of the system can influence the policy outcomes.

3.2. Definition of Populist, Far-right and Far-left Parties

In this paper, the definition and classification of populist, far right and far left parties will be based on the one proposed by "The PopuList" team⁵, a group of 8 experts that categorize the different European parties with the label of far-right, far-left, euro skeptic and populist party (Rooduijn et al., 2023). This classification has been widely used in literature.

Populist parties are the ones that endorse the idea that society is ultimately separated into two homogeneous and antagonistic groups: "the pure people" versus "the corrupt elite." They argue that politics should be an expression of the general will of the people (Mudde, 2004).

Far-left parties are the ones that reject the underlying socio-economic structure of contemporary capitalism and advocate for alternative economic and power structures. They see economic inequality as the basis of existing political and social arrangements and call for a major redistribution of resources from existing political elites (March, 2012).

Finally, far-right parties are nativist, an ideology that holds that states should be inhabited exclusively by members of the native group and that non-native elements are fundamentally

⁵ <https://popu-list.org/about/>

threatening to the homogeneous nation-state. They are also authoritarian, believing in a strictly ordered society where infringements of authority are to be punished severely (Mudde, 2007).

According to “The PopuList” *Podemos* was a populist far-left party until 2019, after which it was classified as just a far-left party. On the other hand, *VOX* has been considered a populist far-right party in every election.

3.3. Causes and Consequences of Radicalism and Populism

Support for radical parties on both the left and right is on the rise. Both sides of this phenomenon share common key political desires and discontents (Lubbers & Scheepers, 2007; Visser et al., 2014) also share common characteristics like populism (Rooduijn & Akkerman, 2017). However, far-left and far-right can be also studied as different phenomena since supporters of both groups have diverging ideological profiles (Muis & Immerzeel, 2017).

The rise of radical parties has been the subject of extensive research. Several factors contribute to this phenomenon, including media coverage (Boomgaarden & Vliegenthart, 2007; Walgrave & De Swert, 2004), growing importance of topics like immigration, Islam, and security for the radical right and economic inequality and the financial crisis for the radical left (March, 2012; Mudde, 2007). Unemployment is also a significant factor in the European case (Algan et al., 2017).

In modern day Italy, consequences have been found to be population outflows (Bellodi et al., 2024) and a decrease in bureaucracy quality (Bellodi, Morelli & Vannoni, 2024). Polarization seems to be simultaneously a cause and a consequence of populism. Luisa Doerr, Niklas Potrafke, and Felix Roesel (2021) find that populist governments increase polarization, measured by a segregated distribution of players on local football teams. Acemoglu, De Feo, De Luca, and Russo (2022) on the dynamics of fascism and polarization demonstrate that war casualties after WWI and WWII, unrelated to various pre-war political, economic, and social variables, significantly boosted socialist support, as Socialists were the main anti-war political

movement. This exogenous boost to socialist support subsequently led to increased local fascist activity. Similarly, Anduiza and Rico (2024) identify that support for VOX is partially explained as a reaction against feminist movements.

In Spain, part of the rise of the radical-left is explained because of the economic crisis and corruption. Sanz, Solé-Ollé, and Sorribas-Navarro (2022) investigated how corruption magnifies the political effects of recessions. Using municipal-level data and a difference-in-difference strategy, they found that local unemployment shocks during the Great Recession (2008–2015) significantly increased political fragmentation. This effect was four times larger in municipalities with a history of political corruption compared to those without it. Their study shows that the interaction of unemployment and corruption not only harms the two traditional main parties but also benefits new parties on the left, particularly *Podemos*. Costas et al. (2012) and Solé-Ollé & Sorribas (2018) also find that corruption undermines trust on local and that votes react to such information punishing such politicians on next elections.

It seems, therefore, that the crisis and corruption have shaped Spanish policy outcomes through the following mechanism. Unemployment and corruption induced a shift from a two-party system to a multi-party system by making people vote more for populist parties. This shift could have changed the optimal political strategy of the established parties and increased the probability of the new parties gaining enough power to enact significant changes on their own.

3.4. Limited Action Capacity of Local Governments

The strength of party representation on public policies depends on the configuration of the party system (bipartisan, multipartisan) and its stability (fragmentation, new parties) but also on the action capacity of local. First, their powers, although relatively substantial, are restricted to specific services (section 2.3). Second, due to the financial crisis in 2008 the Budgetary Stability Law (Organic Law 2/2012) was enacted to strengthen control over local administrations. This legislation enabled the government to sanction those that failed to adhere to fiscal regulations

imposed by the central authority and, if necessary, intervene in their financial processes. Additionally, with the creation of the Fiscal and Financial Policy Committee (CPFF), the entire budgetary process of the administrations was monitored more closely. Third, even if they had the capacity to act, the high mobility of citizens in small municipal territories complicates redistribution measures (Tiebout, 1956). Finally, business powers can pressure to block measures against their interests through negative news coverage or legal challenges⁶.

In conclusion, before moving on to the methodology and the results of this paper, one must keep in mind that the actual capacity to implement change in municipal politics is limited by various factors. Significant ideological shifts in the country's policies might need to be pursued at the national level. Maybe at the local level, the changes can only be materialized as mere symbolic acts, such as having women play the role of the "The Three Wise Men"⁷ or displaying LGBTQ+ flags on city halls⁸.

4. Data and Methodology

This study uses municipal-level data spanning the years 2011 to 2023 from various sources to analyze the impact of *Podemos* in Spanish municipal governance. Unlike more established parties with a strong local tradition, *Podemos* has never focused its electoral strategy on the local level, instead concentrating the effort primarily on national elections. For this reason, added to the fact that their message tends to resonate more in urban areas, the municipalities in which they stand for election have a population average of 30.125, much higher than the actual mean of 5.779 for the total of municipalities or ~6.350 for the ones in which consolidated parties (PP and

⁶ An example can be Barcelona, which experienced 1) Retail unions against pedestrianization, 2) Automobile clubs (racc) against LEZs; and 3) Utilities against municipalization. 1) https://www.larazon.es/cataluna/barcelona/tercera-sentencia-superilles-colau-barcelona_2024050466360326c18d400001b599e7.html; 2) <https://www.elperiodico.com/es/barcelona/20230920/encuesta-racc-gestion-zona-bajas-emisiones-barcelona-area-metropolitana-92321011>; 3) <https://www.ccma.cat/324/querelles-i-recursos-aixi-es-lestrategia-dagbar-contra-la-remunicipalitzacio-de-laigua/noticia/3149833/>

⁷ https://www.eldiario.es/andalucia/cadiz/chipiona-historia-majestades-tres-mujeres-representaran-reyes-magos_1_10691943.html

⁸ <https://www.lavanguardia.com/local/barcelona/20230715/9110905/ayuntamiento-suma-pride-cuelga-bandera-lgtbi.html>

PSOE) run for elections. Nevertheless, I have identified a total of 2,774 *Podemos* or similar candidacies in the municipal elections of 2015, 2019, and 2023. Data (Table 1) shows a decline in the party support since its foundation. For disaggregated data by population, please refer to the Appendix (Table A.4).

Table 1: *Podemos* Electoral Data

| Year | Candidatures | Seats obtained |
|------|--------------|----------------|
| 2015 | 825 | 1303 (9.09%) |
| 2019 | 1116 | 1150 (6.26%) |
| 2023 | 833 | 682 (4.67%) |

Note: Table shows the evolution of the number of candidatures, number of total seats and % of seats of *Podemos*. % of seats is calculated with respect total seats of municipalities in which they ran for elections that year.

The electoral data was obtained from official public administration sources. These sources provide information on the party denominations of each candidate, the number of votes received, the number of seats won, blank votes, abstention rates and information about population. In the context of this study, “*Podemos*” is understood not only as the political party founded in 2014 but also as a broader movement encompassing various similar parties and coalitions with shared goals that emerged from the 15-M Movement. They often ran under different names but were ideologically aligned and frequently collaborated in municipal elections. In order to identify not only the “white labels” brands of *Podemos* in 2015 but also all these similar movements I searched in regional newspapers the different acronyms and names.

Some common words used to identify these parties are: *Puede, Más, Ahora, Marea, Común, Ganemos* and *Somos*. Additionally, there are alterations in the words on one hand and translations into different languages on the other. However, not every candidacy with these words is necessarily a candidacy of a far-left populist party from the 15M movement; individual checking has been done. One problem of identifying all these parties with this common origin

and goals as *Podemos*, is that sometimes, more than one candidacy has been presented in the same municipality. In those cases, only the one with the higher number of votes has been considered.

As detailed in the Institutional Context (Section 2.3.), in the Spanish electoral system, a candidate must obtain at least 5% of the votes to gain representation. This rule creates a discrete jump at the threshold, enabling the use of a Regression Discontinuity Design (Carozzi, F, et al., 2022) to measure the effect of an increase in the number of seats for a party on various variables of interest. The 5% vote share threshold mechanism can explain political changes through four mechanisms: 1) gaining more seats in the council, which can be relevant by itself by an agenda setting effect or by changing the political strategy of the other parties (Section 3.1.); 2) Increasing the likelihood of switching from a right-wing majority to a left-wing majority; 3) Increasing the likelihood of entering the executive branch; and 4) Increasing the likelihood of obtaining the mayor position (Folke, 2014).

This study measures mechanisms 1) and 2) in the first stage (Section 5.1.) The other two mechanisms have been omitted due to data limitations. However, the results still account for the four of them. There is a tradeoff between mechanisms 1) and 2) and the number of population in the municipality. In larger municipalities, achieving the 5% vote share translates to a higher number of seats. However, municipalities with larger populations require more seats to secure a majority. These dynamics mean that in very small municipalities, the Regression Discontinuity Design (RDD) may not function effectively because crossing the 5% threshold does not ensure a jump in the number of seats. On the other hand, in very large municipalities, the RDD may also be ineffective, as gaining one additional seat is unlikely to secure a majority.

Therefore, this analysis is limited to municipalities with populations between 5,000 and 100,000 inhabitants. This population range ensures a balanced application of the RDD, where the 5% vote share threshold meaningfully impacts political outcomes without being diluted by the

extremes of very small or very large populations. This reduces the number of observations to 1570 but increases the quality of them.

The electoral data serve for conducting the first stage of the analysis and identifying the treatment effect, as they provide the running variable with the cutoff. The dataset includes budgetary outcomes that cover revenues and expenditures that can be disaggregated into expenditure programs. Some correspond to *Podemos'* electoral campaign promises such as Social Services, Mobility, Environment and Housing. The other expenditure programs are Local Development, Basic Services and Administration. The data also includes various socio-economic outcomes such as unemployment rates, housing market indicators, the number of businesses, tourism levels, total and immigrant population, eviction numbers, the difference in unemployment between genders, and the growth of urbanized land area. For more detailed information, please refer to the Appendix (Table A.1-2).

5. Results

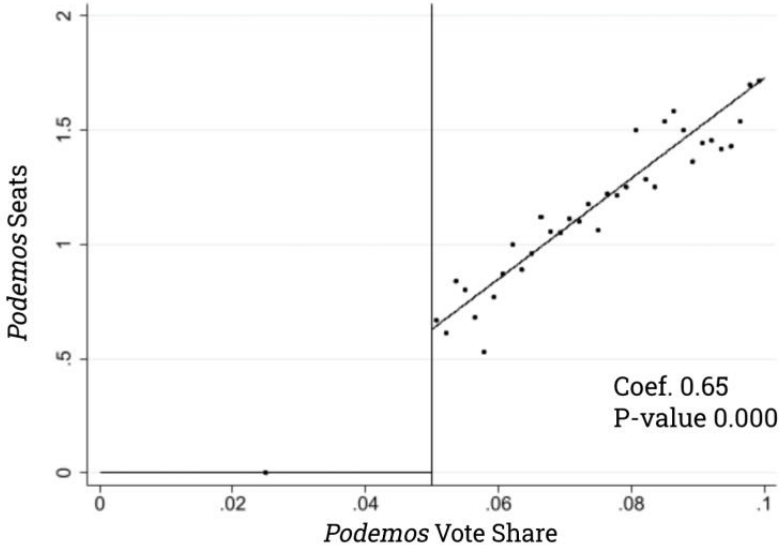
Following the methodology of Calonico, Cattaneo, Farrell and Titiunik (2017), the study uses observations close to the threshold, utilizing a first-order polynomial to identify patterns in the data and takes the discontinuity between the polynomial fits on either side of the threshold as the treatment effect. Observations closer to the threshold are considered to provide better information than the ones further from it. This is implemented by setting triangular weights in the kernel function. The selection of the observations close to the threshold is determined by a Mean Squared Error Optimal Bandwidth (MSERD). The effect of the 5% threshold on the probability of a left-wing majority optimal bandwidth value is 0.013. Therefore, the analysis is conducted taking observations in which the vote share of *Podemos* was between 3.7% and 6.3%; this same threshold is the one used for the different outcomes in order to give some consistency in the results. The selection of the bandwidth suffers from a bias-variance tradeoff. A larger

bandwidth lowers the bias but at the same time increases the variance. In order to take into account the bias from the tradeoff, robust standard errors are also provided. In order to obtain lower standard errors, population is used as a covariate. Finally, residuals are estimated by clustering the municipalities.

5.1. First Stage

The first stage examines the magnitude of the increase in seats at the threshold. This is useful for assessing the methodological validity of the threshold. If no jump in seats is observed, subsequent results lack a solid foundation. The analysis reveals a significant increase in the number of seats obtained by *Podemos* when crossing the 5% vote share. Specifically, crossing this threshold results in an increase in 0.65 seats.

Figure 3: Effect of 5% Vote Share on Seats.



Notes: The figure shows the discrete jump of *Podemos* seats when the vote share of the party crosses the 5% line. Polynomial of order 1. Bandwidth of 0.05. Triangular kernel function.

In section 4 there is a discussion about the different mechanisms the 5% vote share can affect outcomes. Mechanism 1) is the one observed on Figure 3. An increase in the number of seats can influence economic and social outcomes through agenda setting—since it provides more influence to pushing forward policies aligned with their platform—and through strategic

adaptation of the other parties—adjusting the strategy will be needed to optimize the winning probabilities in the new political landscape—.

Mechanism 2) operated through the likelihood of a majority: The presence of *Podemos* in the legislature can increase the probability of a leftist majority. This majority can directly affect outcomes if Spanish leftist parties implement different policies than right-wing parties. Additionally, it can influence outcomes indirectly, as *Podemos* can negotiate policy concessions as a condition for its support.

Table 2: First Stage Results

| VARIABLES | (1) Seats | (2) Left-wing majority | (3) Fuzzy |
|-----------------------|----------------------|---------------------------|--------------------|
| RD Estimate | 0.628*** (0.0359) | 0.184** (0.0824) | 0.281** (0.128) |
| Observations | 1,570 | 1,570 | 1,570 |
| Robust SE | 0.0413 | 0.0973 | 0.150 |
| Bandwidth MSE-Optimal | 0.05 | 0.013 | 0.013 |
| Effective obs. left | 619 | 258 | 258 |
| Effective obs. right | 603 | 221 | 221 |

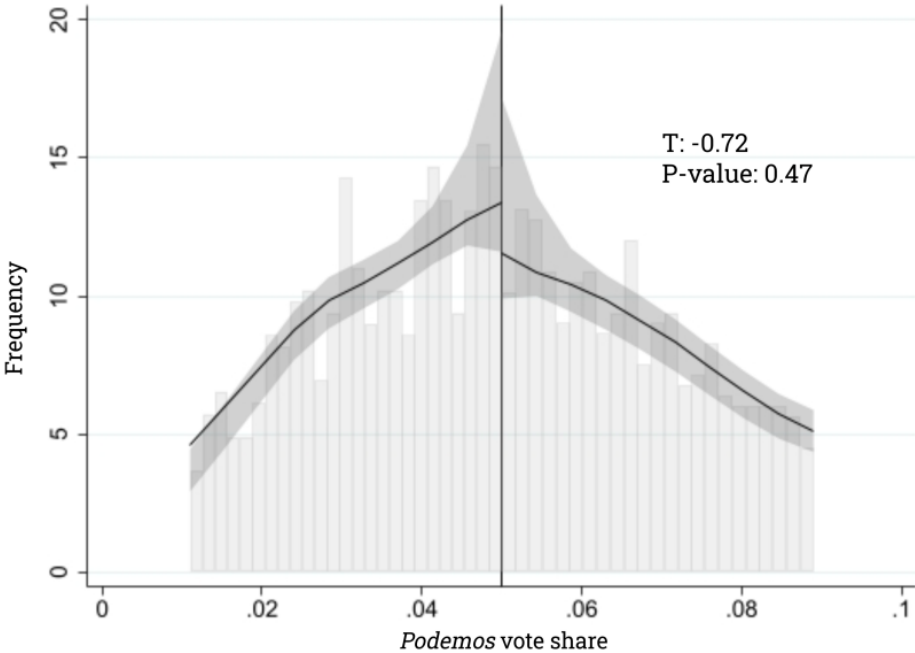
Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The table displays the effect of *Podemos* crossing the 5% vote share threshold on the number of seats that *Podemos* obtains. Similarly (2) reflects the effect on a left wing majority. (3) uses the number of seats as treatment status variable in order to get the effect of 1 seat on the majority. Polynomial of order 1. Triangular kernel function.

This last mechanism can be measured with a dummy variable that takes value 1 if the municipality has a left-wing majority in that election and 0 otherwise. With a similar RDD (Table 2.) results show that *Podemos* crossing the 5% vote share, increases in 18 percentage points the likelihood of a progressive majority. Design (3) takes the number of seats as the treatment status, using coefficient (1) as the provability of having a full seat. The interpretation of the result (3) is that when *Podemos* secures representation in the local authority—by obtaining exactly one seat—the probability of a leftist majority increases by 28 percentage points. All the results are statistically significant at the 5% level.

5.2 Validity

A critical validity consideration in the Regression Discontinuity Design (RDD) methodology is that the running variable should exhibit continuous density at the cutoff. This requirement ensures that observations close to the cutoff are as good as randomly assigned. If the density of the running variable differs significantly on either side of the cutoff, it suggests possible manipulation or non-random sorting, which would undermine the comparability of the groups and introduce endogeneity into the estimates.

Figure 4: Manipulation Testing Plot



Notes: *Podemos* vote share on X axis, the density on Y axis. 95% CI for regular standard errors. Polynomial of order 1 and bandwidth of 0.013. All p-values of the binomial tests are higher than 0.05.

In the case of *Podemos*, party members have notably emphasized the importance of surpassing the 5% cutoff and have actively encouraged voters to help the party exceed this threshold. For instance, during the 2023 Madrid elections, Ione Belarra argued that this strategy was the most effective way to remove the PP from the mayor's office⁹. This strategic behavior may influence

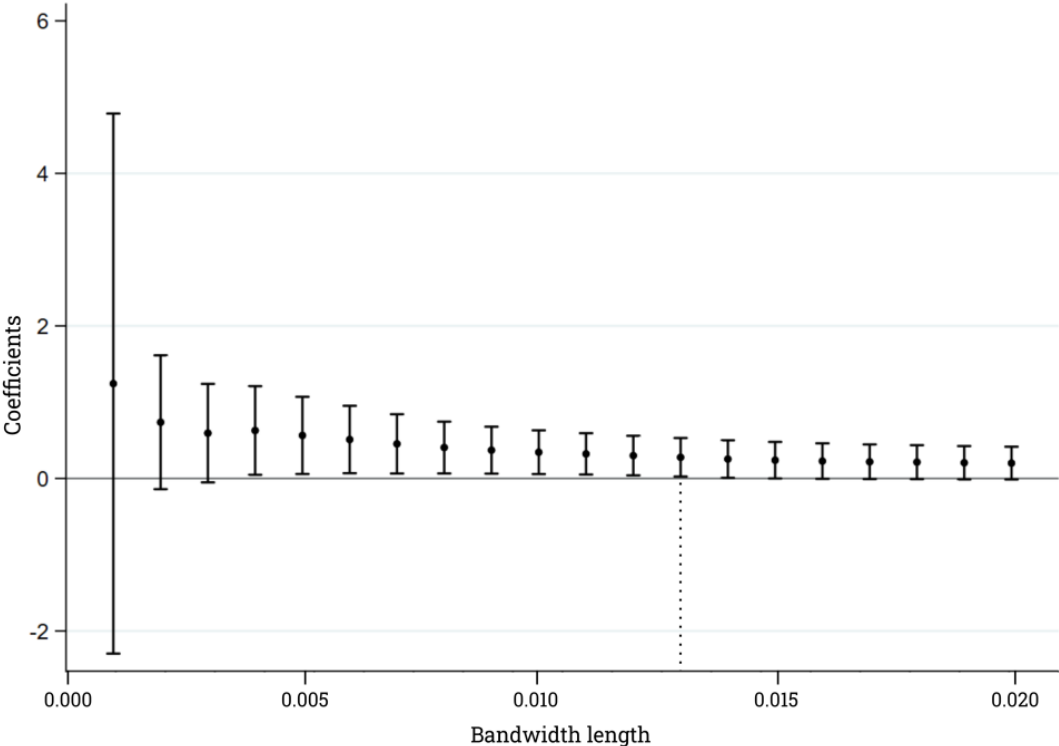
⁹ <https://www.xataka.com/magnet/incognita-5-como-dhont-barrera-electoral-han-revividido-voto-estrategico-elecciones>

voter distribution, potentially introducing bias into the results, as observations may not be randomly distributed around the threshold.

The Density Discontinuity Test (Figure 4) checks how likely this possibility is. The test takes as the null hypothesis that there is no manipulation in the allocation of observations at the threshold. The robust method p-value of 0.47 strongly suggests the no manipulation hypothesis. This result remains true for all the different window lengths.

Figure 5 shows visually the different coefficients for the different bandwidth in the first stage fuzzy RDD to illustrate the selection method considering the variance-bias tradeoff. The approach aims to find an optimal balance, minimizing mean squared errors by reducing bias while maintaining manageable variance. The bandwidth selected was 0.013.

Figure 5: Bandwidth Comparison for the Fuzzy RDD (3)



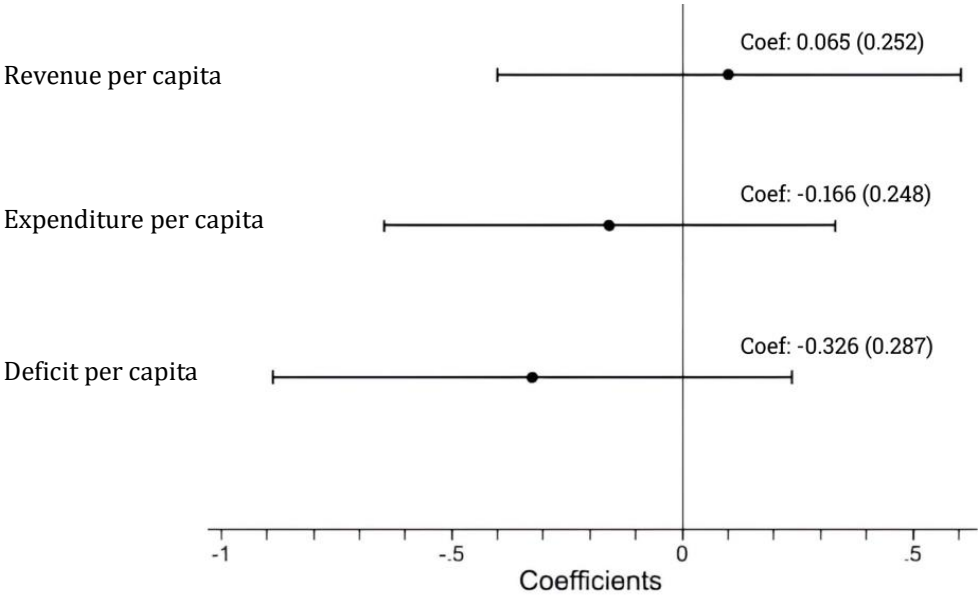
Notes: The figure shows the discrete jump of *Podemos* seats when the vote share of the party crosses the 5% line. Polynomial of order 1. Bandwidth of 0.05. Triangular kernel function.

5.3. Budgetary Outcomes

The first stage showed how the mechanism of the 5% vote share can help predict electoral outcomes. If *Podemos* had a real effect on the policies implemented, their revolutionary and change-oriented rhetoric would suggest significant policy shifts. For example, their left-wing stance against austerity and in favor of protecting public services should theoretically lead to an increase in the deficit due to higher spending. Additionally, their rhetoric against elites and career politicians might suggest a reduction in government administrative expenses. Conversely, spending on environmental issues, housing, social public services and mobility, should increase.

First, the impact on budget aggregate variables will be examined. Figure 6, shows the effect of *Podemos* total revenue, total expenditure and total deficit, defined as expenditure minus revenue. These indicators are in per capita terms and standardized to offer a better comparison. The RDD compares the electoral results from 2015 and 2019 with the budgetary variables 3 years later. None of them show significant coefficients. For more detailed information please refer to the Appendix (Table A.3).

Figure 6: Aggregate Budgetary Variables Coefficients



Notes: Confidence intervals for a 5% significance level. *** p<0.01, ** p<0.05, * p<0.1. The figure shows the RDD coefficients at the 5% vote share. Bandwidth: 0.013. Polynomial of order 1. Triangular kernel function. Cluster-robust residuals for municipalities are considered. Control variable: Population. In parenthesis conventional standard errors. Variables are standardized as a z-score.

One possibility is that *Podemos'* real impact was not on overall spending or revenue indicators but rather on how public funds were allocated. They may have prioritized areas like education, mobility, healthcare, housing, or environmental expenditure, which were part of their agenda, and shifted funding away from areas typically favored by right-wing parties, such as security or infrastructure.

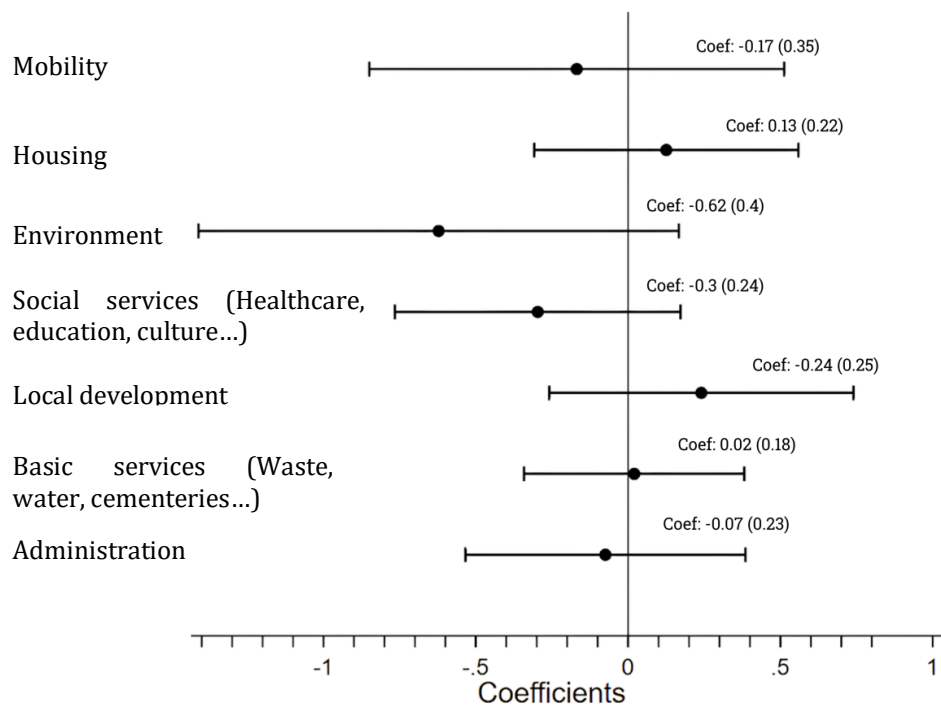
The Spanish local government categorizes budget expenditure into various groups such as general services, citizen security, social protection, social public goods, economic goods, general economic regulation or sector regulation. These groups are further subdivided into more detailed categories, allowing for a more granular analysis of each area of expenditure. For the purposes of this paper, these categories have been re-organized into aggregate expenditure programs as follows:

- 1) Mobility: Expenditure to promote affordable transportation
- 2) Housing: This pertains to expenditures related to housing
- 3) Environmental: This involves spending on the promotion and preservation of the natural environment
- 4) Social Services: Services which left wing parties typically like to promote. This includes healthcare, education, culture, sports, social reintegration and employment promotion
- 5) Local Development: Expenditure that aims to boost economic growth. This includes spending on agriculture, industry, mining, tourism, energy, scientific research, statistical information, communications, roads and hydraulic resources
- 6) Basic Services: Essential services that everyone needs such as security, firefighting, waste management, water treatment or cemeteries

7) Administration: Expenditure needed for the proper functioning of local governance. This includes general administration, government bodies, and citizen participation spending.

Note that 1), 2), 3), and 4), are the programs closely related with *Podemos* political agenda. The issue of housing for instance was a critical concern in the 15M protests, as the financial crisis led to a significant number of individuals being unable to meet their mortgage payments and consequently facing eviction. This is exemplified by initiatives such as the Platform for People Affected by Mortgages, where Ada Colau served as a spokesperson prior to her political career. Green policies are also prominent on the agenda; for example, the environmental party *Equo* ran in elections in coalition with *Podemos* in many municipalities. Mobility was a pivotal issue for *Podemos*, as evidenced by their electoral promise of free public transport access for individuals under 26. Finally, social services can be argued to be the topic in which *Podemos* placed more emphasis throughout his political career, especially the importance of education and healthcare. Among other promises, they wanted to eliminate co-payments in healthcare, provide free dental services, and make public universities tuition-free.

Figure 7: Budget Coefficients by Expenditure Programs



Notes: Confidence intervals for a 5% significance level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The figure shows the RDD coefficients at the 5% vote share. Bandwidth: 0.013. Polynomial of order 1. Triangular kernel function. Cluster-robust residuals for municipalities are considered. Control variable: Population. In parenthesis conventional standard errors. Variables express share of expenditure and are standardized as a z-score

Figure 7 shows the effect of *Podemos* on the weight of the different expenditure programs. Variables are standardized so a proper comparison between the coefficients can be made. Dependent variables represent the values from 2 years after the election. The analysis reveals that there is not a shift in the program's compositions when *Podemos* obtains representation. Surprisingly, the programs typically associated with left-wing priorities—such as Housing, Environment and Social Services—do not appear to increase at the expense of right-wing preferences —Basic Services or Local Development.

To be sure that the identification strategy is correct, placebo tests can be made. Repeating the same methodology for the same outcome variables but four years before (exactly one electoral cycle) provides additional validity checks to the results. Placebos should not be significant since there should be no effect when the treatment had not happened yet. None of the placebos for any of the budgetary outcomes are statistically significantly different from zero, which strengthens the robustness of the results (see Appendix, Table A.3).

5.4. Socio-Economic Outcomes

Up to this point, the analysis has shown that *Podemos* does not appear to have significantly affected budgets, neither in terms of amount nor composition. However, a political party's influence on local governments can extend beyond budgetary changes to include management practices and policies or regulations that do not entail economic costs for taxpayers. These alternative mechanisms are hard to observe quantitatively. However, instead of examining the party's actions, it's possible to explore the outcomes in various indicators that a political party might influence through its policies.

The indicators considered in this paper include: Unemployment rate—and its gender differences-, number of firms, percentage increase in the urbanized land area, tourism index, immigrant population rate, number of housing transactions and number of social housing transactions,

mean housing price per square meter and number of evictions. Table 3 shows the results of the effect of *Podemos* on these variables 3 years later.

Table 3: Socio-Economic Results

| | (4) | (5) | (6) | (7) | (8) |
|-------------------|-----------------------------|----------------------|-----------------------|---------------------|--------------------------------|
| VARIABLES | Tourism index per capita | Unemployment rate | Firms per capita | Immigrants rate | Urbanized area (% increase) |
| RD Estimate | 0.000276 (0.00116) | 0.00859 (0.00895) | -0.00292 (0.00287) | -0.0100 (0.0208) | 0.0503* (0.0279) |
| Observations | 879 | 1,025 | 1,026 | 1,026 | 942 |
| Robust SE | 0.00151 | 0.01429 | 0.00493 | 0.0349 | 0.0664 |
| Effec. obs. left | 147 | 166 | 166 | 166 | 160 |
| Effec. obs. right | 123 | 138 | 138 | 138 | 125 |

| | (9) | (10) | (11) | (12) | (13) |
|-------------------|----------------------------|-------------------------|--|---------------------|--|
| VARIABLES | Unemployment gender gap | Evictions per capita | Social housing transaccions per capita | Housing m2 price | Number of house sales per capita |
| RD Estimate | -0.0508 (0.0750) | -0.00112 (0.00788) | -2.95e-05 (0.000552) | -164.7 (233.0) | -0.000342 (0.00203) |
| Observations | 1,025 | 348 | 996 | 1,022 | 1,022 |
| Robust SE | 0.121 | 0.0103 | 0.000827 | 384.1 | 0.00342 |
| Effec. obs. left | 166 | 34 | 160 | 166 | 166 |
| Effec. obs. right | 138 | 31 | 133 | 137 | 137 |

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population. Bandwidth: 0.013. Polynomial of order 1. Triangular kernel function.

The different variables, computed in the same way as for the previous analysis—using a bandwidth of 0.013, and a first order polynomial—are intended to measure aspects broadly related to the party's electoral campaign. Despite this, the coefficients do not show significant results when *Podemos* gains representation. This outcome raises doubts again about either the party's real intentions, its actual power to do things, or its competence.

Repeating the same analysis but for the outcomes four years earlier—exactly one electoral cycle—as a placebo test shows no significant coefficients, which is consistent with the methodological assumptions (see Appendix, Table A.3).

5.5. Electoral Dynamic Effects

Although no significant effects of the political party *Podemos* are observed during their term in government, either on budgetary matters or socio-economic outcomes, it is possible that their presence influenced the political composition of the municipality in subsequent elections. This section explores the potential dynamic electoral effects resulting from *Podemos'* obtaining representation.

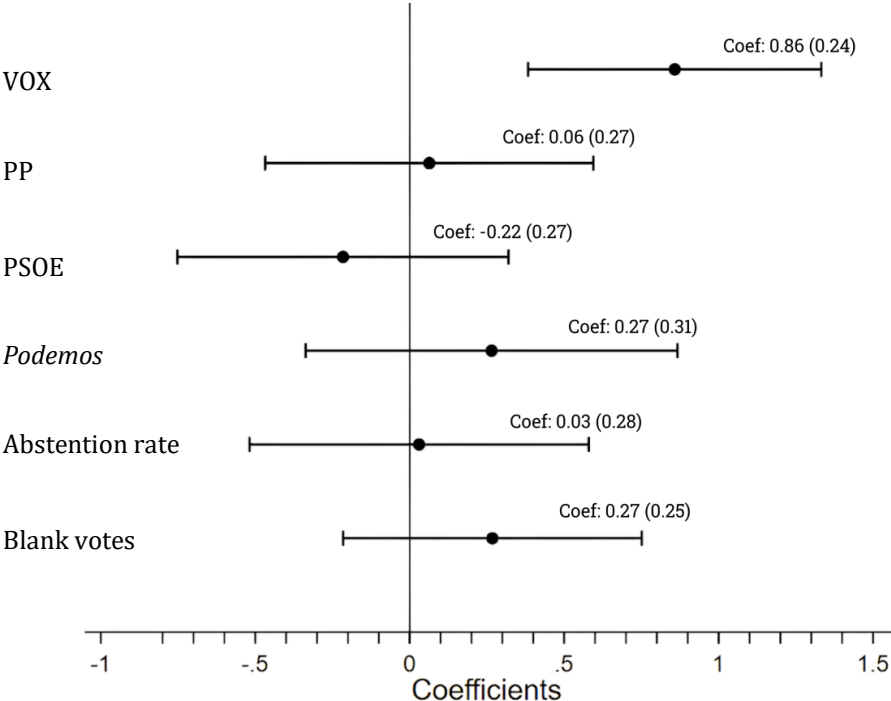
Several scenarios could explain how an electoral outcome might influence the next electoral cycle, some possibilities, although not exhaustive, are: 1) Mobilization of Potential Voters: Seeing that surpassing the 5% vote threshold is achievable, far-left voters might feel their votes are not wasted and the likelihood of them participating in future elections may increase; 2) Disillusionment Among Supporters: Conversely, those who initially supported *Podemos* might become disillusioned once the party gains representation if the changes promised by *Podemos* do not materialize; 3) Emergence of Right-Wing Parties: As a reaction to *Podemos'* presence, new right-wing parties might emerge. Individuals with opposing views might gravitate towards extreme right-wing alternatives in an attempt to counterbalance *Podemos'* influence.

Figure 8 shows the effect of *Podemos* on the number of seats of the main Spanish political parties in the next election and the evolution of abstentionism and blank votes per capita. The methodology is the same as for previous cases and once again variables are standardized so comparison on the relative intensity of the effects can be done effectively.

The results seem to support the third hypothesis. While the support for *Podemos* does not appear to be significantly altered at the cutoff, there is a noticeable rebound effect in the emergence and support of the far right-wing party VOX.

VOX has always positioned itself to the right of the PP with an aggressive anti-feminist, anti-LGBTI, anti-immigration, and anti-environmentalist agenda. VOX is also notably known for having Falangists within its ranks. For instance, in 2018, VOX's secretary-general stated that the dictator Primo de Rivera was one of "the great men of history." Other prominent figures, such as Jorge Buxadé, VOX's lead candidate in the European elections in both 2019 and 2024, have openly acknowledged their past affiliations. Buxadé, who ran as a candidate for the Catalan Parliament as a member of FE de las JONS in 1995 and for the Spanish Congress as a member of Falange Española Auténtica in 1996, expressed regret about his time with PP but not about his Falangist past.

Figure 8: Dynamic Electoral Effects



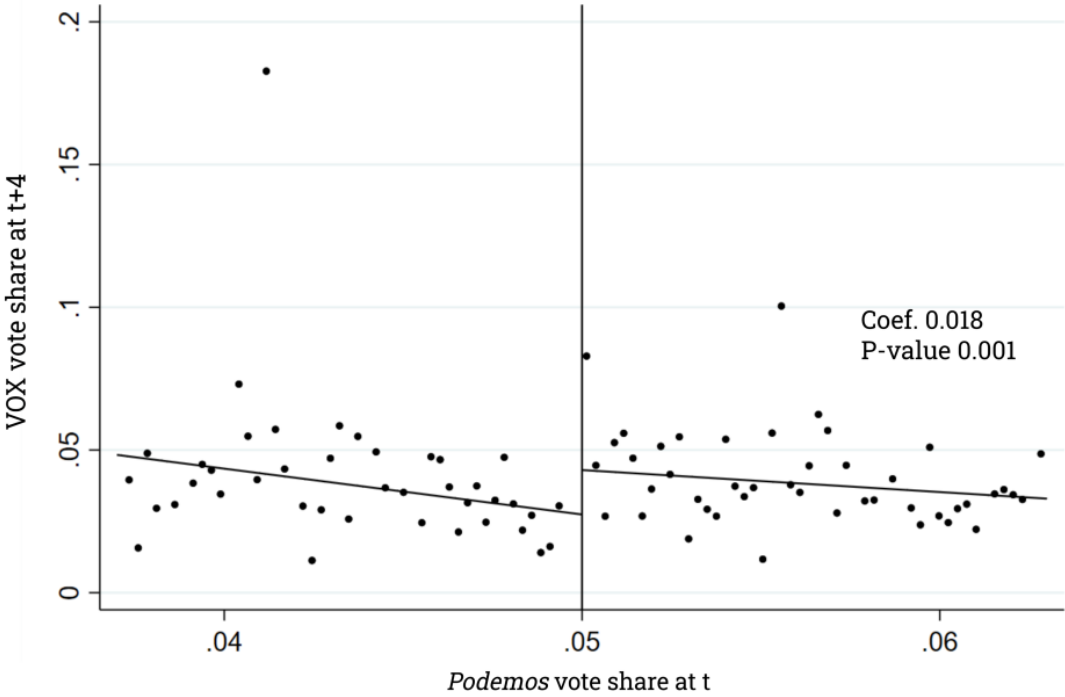
Notes: Confidence intervals for a 5% significance level. *** p<0.01, ** p<0.05, * p<0.1. The figure shows the RDD coefficients at the 5% vote share. Bandwidth: 0.013. Polynomial of order 1. Triangular kernel function. Cluster-robust residuals for municipalities are considered. Covariates: Population. In parenthesis conventional standard errors. Variables are standardized.

The coefficient of the number of seats for VOX has a conventional p-value of 0.0004. The robust standard errors that consider the bias from the bandwidth selection suggest a p-value of 0.0019, which is still highly significant. The non-standardized coefficient is 1.05 (see Appendix, Table

A.3), meaning that when *Podemos* crosses the 5% vote share threshold, VOX gets one more seat in the next election.

Figure 9 shows visually the effect on polarization by using this time VOX vote share at t+4, which increased by 1.8 percentage points. If we correct for outliers at the top and bottom 1%, the effect remains statistically significant at the 99% confidence interval. Placebo test remains insignificant. Please refer to results (49), (53) and (54) in Appendix (Table A.3) for detailed information.

Figure 9: Dynamic Effects on VOX Vote Share



Notes: Jump on VOXs vote share at t+4 when *Podemos* crosses the 5% vote share threshold on t. Bandwidth: 0.013. Polynomial of order 1. Triangular kernel function. 50 bins in each side.

The interpretation with the fuzzy methodology, similar to (3) from the first stage (section 5.1), suggests that one more seat for *Podemos*, means an increase in the vote share by 2.8 p.p. and an increase in 1.32 seats for VOX. Please refer to (48) and (47) from the Appendix (Table A.3).

The results therefore suggest an increase in political polarization due to the rise of *Podemos*. The story appears to be as follows: the two-party system failed when PP and PSOE were weakened

by corruption scandals and by the severe economic crisis in 2008. The shock and discontent that became visible during the 15M movement created the perfect conditions for new left wing parties to emerge. The rise of these parties did not influence local budgetary or socioeconomic outcomes. However, their emergence provoked a backlash from voters who opposed their political agenda, leading to increased polarization. This polarization was further demonstrated by the rise of VOX in the following elections. These results align with the research by Acemoglu, De Feo, De Luca, and Russo (2022) Anduiza and Rico (2024) and Luisa Doerr, Niklas Potrafke, Felix Roesel (2021).

6. Conclusions

This paper employs a Regression Discontinuity Design (RDD) at the 5% vote share threshold, leveraging Spain's electoral system framework to analyze the consequences of *Podemos* having representation. The findings indicate that, at the local government level, the party has not significantly affected the budget or various socio-economic outcomes. However, the impact of *Podemos* on the Spanish local political landscape is notable in one critical dimension: it has fueled political polarization and facilitated the rise of the far-right party VOX. The analysis reveals that an additional seat for *Podemos* increases the number of seats for VOX by 1.32 and boosts its vote share by 2.8 percentage points in the subsequent election.

A limitation of this study is that it has centered on local politics and therefore its findings are only applicable at the municipal level. Another limitation of the paper is that the RDD at the 5% threshold likely does not significantly impact the probability of having a mayor from *Podemos*. Instead, it more likely affects the probability of having a mayor from PSOE. For future analyses, the dataset could be improved by including the specific party of the mayor, allowing for an attempt to isolate the effect of having a mayor from *Podemos*. However, in such a case, the methodology would need to be modified. This could involve using a different type of RDD (Folke,

2014), or employing a synthetic DiD approach (Arkhangelsky, et al., 2021) for significant municipalities, using the election of a *Podemos* mayor as the treatment.

7. References

Acemoglu, D., De Feo, G., De Luca, G., & Russo, G. (2022). War, socialism, and the rise of fascism: An empirical exploration. *The Quarterly Journal of Economics*, 137(2), 1233-1296. <https://doi.org/10.1093/qje/qjac001>

Algan, Y., Guriev, S., Papaioannou, E., & Passari, E. (2017). The european trust crisis and the rise of populism. *Brookings Papers on Economic Activity*, 2017(2), 309-400. <https://muse.jhu.edu/pub/11/article/688908>

Arkhangelsky, D., Athey, S., Hirshberg, D. A., Imbens, G. W., & Wager, S. (2021). Synthetic difference-in-differences. *American Economic Review*, 111(12), 4088-4118. <https://doi.org/10.1257/aer.20190159>

Bellodi, L, F Docquier, S Iandolo, M Morelli and R Turati (2024), 'DP18778 Digging Up Trenches: Populism, Selective Mobility, and the Political Polarization of Italian Municipalities', CEPR Discussion Paper No. 18778. CEPR Press, Paris & London. <https://cepr.org/publications/dp18778>

Bellodi, L., Morelli, M., & Vannoni, M. (2024). A costly commitment: Populism, economic performance, and the quality of bureaucracy. *American Journal of Political Science*, 68(1), 193-209. <https://doi.org/10.1111/ajps.12782>

Boomgaarden, H. G., & Vliegenthart, R. (2007). Explaining the rise of anti-immigrant parties: The role of news media content. *Electoral Studies*, 26(2), 404-417. <https://doi.org/10.1016/j.electstud.2006.10.018>

Calonico, S., Cattaneo, M. D., Farrell, M. H., & Titiunik, R. (2017). Rdrobust: Software for regression-discontinuity designs. *The Stata Journal: Promoting Communications on Statistics and Stata*, 17(2), 372-404. <https://doi.org/10.1177/1536867X1701700208>

Carozzi, F., Cipullo, D., & Repetto, L. (2022). Political fragmentation and government stability: Evidence from local governments in Spain. *American Economic Journal: Applied Economics*, 14(2), 23-50. <https://doi.org/10.1257/app.20200128>

Casey, K. (2015). Crossing party lines: The effects of information on redistributive politics. *American Economic Review*, 105(8), 2410-2448. <https://doi.org/10.1257/aer.20130397>

Costas-Pérez, E., Solé-Ollé, A., & Sorribas-Navarro, P. (2012). Corruption scandals, voter information, and accountability. *European Journal of Political Economy*, 28(4), 469-484. <https://doi.org/10.1016/j.ejpoleco.2012.05.007>

Downs, A. (1957). An economic theory of political action in a democracy. *Journal of Political Economy*, 65(2), 135-150. <https://doi.org/10.1086/257897>

Doerr, L., Potrafke, N., & Roesel, F. (2021). Populists in power (SSRN Scholarly Paper 3938649). <https://doi.org/10.2139/ssrn.3938649>

Fernández-Villaverde, J., Garicano, L., & Santos, T. (2013). Political credit cycles: The case of the eurozone. *Journal of Economic Perspectives*, 27(3), 145-166. <https://doi.org/10.1257/jep.27.3.145>

Folke, O. (2014). Shades of brown and green: Party effects in proportional election systems: shades of brown and green. *Journal of the European Economic Association*, 12(5), 1361-1395. <https://doi.org/10.1111/jeea.12103>

Hotelling, H. (1929). Stability in competition. *The Economic Journal*, 39(153), 41-57. <https://doi.org/10.2307/2224214>

Lubbers, M., & Scheepers, P. (2007). Explanations of political euro-scepticism at the individual, regional and national levels. *European Societies*, 9(4), 643-669. <https://doi.org/10.1080/14616690701396603>

March, L. (2012). *Radical Left Parties in Europe*. London: Routledge

Mudde, C. (2004). The populist zeitgeist. *Government and Opposition*, 39(4), 541-563. <https://doi.org/10.1111/j.1477-7053.2004.00135.x>

Mudde, C. (2007). *Populist radical right parties in europe*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511492037>

Muis, J., & Immerzeel, T. (2017). Causes and consequences of the rise of populist radical right parties and movements in Europe. *Current Sociology*, 65(6), 909-930. <https://doi.org/10.1177/0011392117717294>

Orriols, L., & Cordero, G. (2016). The breakdown of the spanish two-party system: The upsurge of podemos and ciudadanos in the 2015 general election. *South European Society and Politics*, 21(4), 469-492. <https://doi.org/10.1080/13608746.2016.1198454>

Romer, T., & Rosenthal, H. (1979). The elusive median voter. *Journal of Public Economics*, 12(2), 143-170. [https://doi.org/10.1016/0047-2727\(79\)90010-0](https://doi.org/10.1016/0047-2727(79)90010-0)

Rooduijn, M., & Akkerman, T. (2017). Flank attacks: Populism and left-right radicalism in Western Europe. *Party Politics*, 23(3), 193-204. <https://doi.org/10.1177/1354068815596514>

Rooduijn, M., Pirro, A. L. P., Halikiopoulou, D., Froio, C., Kessel, S. V., Lange, S. L. D., Mudde, C., & Taggart, P. (2023). The populist: A database of populist, far-left, and far-right parties using expert-informed qualitative comparative classification(Eiqcc). *British Journal of Political Science*, 1-10. <https://doi.org/10.1017/S0007123423000431>

Sanz, C., Solé-Ollé, A., & Sorribas-Navarro, P. (2022). Betrayed by the elites: How corruption amplifies the political effects of recessions. *Comparative Political Studies*, 55(7), 1095-1129. <https://doi.org/10.1177/00104140211047415>

Scervini, F. (2012). Empirics of the median voter: Democracy, redistribution and the role of the middle class. *The Journal of Economic Inequality*, 10(4), 529-550. <https://doi.org/10.1007/s10888-011-9183-2>

Solé-Ollé, A., & Sorribas-Navarro, P. (2018). Trust no more? On the lasting effects of corruption scandals. *European Journal of Political Economy*, 55, 185-203. <https://doi.org/10.1016/j.ejpoleco.2017.12.003>

Visser, M., Lubbers, M., Kraaykamp, G., & Jaspers, E. (2014). Support for radical left ideologies in Europe. *European Journal of Political Research*, 53(3), 541-558. <https://doi.org/10.1111/1475-6765.12048>

Walgrave, S., & De Swert, K. (2004). The making of the (Issues of the) vlaams blok. *Political Communication*, 21(4), 479-500. <https://doi.org/10.1080/10584600490522743>

Anduiza, E., & Rico, G. (2024). Sexism and the far-right vote: The individual dynamics of gender backlash. *American Journal of Political Science*, 68(2), 478-493. <https://doi.org/10.1111/ajps.12759>

8. Appendix

List:

- **Table A.1: Description and Source of Variables**
- **Table A.2: Descriptive Statistics**

- **Table A.3: Results**

- **Table A.4: *Podemos* Electoral Data Disaggregated by Population**

Table A.1: Description and Source of Variables

| Variables | Description | Source |
|----------------------|--|---|
| Electoral | Information on seats and votes of the different parties in the municipal elections (2015-2023). | Ministry of Interior |
| Local Public Budgets | Local authority budgets divided into different classifications (2011-2022). | Ministry of Finance and Public Service |
| Unemployment | Unemployed divided by population 16-64 years old. Disaggregated by gender (2011-2022). Unemployment gender gap is constructed dividing female unemployment by male unemployment. Statistical secret for less than 5 unemployed population. | General Treasury of Social Security |
| Housing | Information about the number of transactions of protected and regular housing, average housing m2 value and the size of the urbanized land area (2011-2023) | Ministry of Housing and Urban Agenda, Ministry of Transport and Sustainable Mobility and the Treasury |
| Tourism | Index that measures de size of the tourist sector (2011-2018) | La Caixa |
| Evictions | Unpaid mortgages per capita during 3th and 4th trimesters of 2015 and 1th of 2016. Data is only available for a bigger geographical scale (Judicial Party), data is extrapolated to the municipalities in it. | General Council of the Judiciary |

| | | |
|------------|--|-------------------------------------|
| Population | Total population and immigrant population (2011-2023) | Ministry of Interior |
| Firms | Data on the number of firms, defined as productive units located in a topographically delimited place (workshop, mine, factory, warehouse, store, office, etc.), from which economic activities are carried out. Statistical secret for less than 5 firms. | General Treasury of Social Security |

Table A.2: Descriptive Statistics

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|-------|--------|-----------|--------|-------|
| Housing expenditure (% of the total) | 932 | .0228 | .0341 | 0 | .2477 |
| Mobility expenditure (% of the total) | 932 | .0047 | .0138 | 0 | .1333 |
| Environmental expenditure (% of the total) | 932 | .00067 | .0028 | 0 | .0396 |
| Local development expenditure (% of the total) | 932 | .064 | .038 | 0 | .248 |
| Basic services expenditure (% of the total) | 932 | .248 | .0766 | .00035 | 1 |
| Social services expenditure (% of the total) | 932 | .305 | .0847 | 0 | .593 |
| Administration expenditure (% of the total) | 932 | .1516 | .0859 | 0 | .914 |
| Deficit per capita | 924 | 328 | 393 | -1288 | 2790 |
| Expenditure per capita | 924 | 1476 | 570 | 281 | 4859 |
| Revenue per capita | 924 | 1148 | 380 | 115 | 3971 |
| Unpaid mortgages per capita | 348 | .027 | .03 | .0001 | .16 |
| Tourism index per capita | 879 | .0021 | .0072 | ~0 | .083 |
| Unemployment rate | 1568 | 10.69 | 4.153 | 1.6 | 26.2 |
| Firms per capita | 1026 | .0369 | .0115 | .0145 | .1144 |
| % Immigrants | 1,026 | .1034 | .0848 | .0069 | .514 |
| % Increase in the urbanized land area | 942 | -.023 | .187 | -.846 | 3 |
| Unemployment gender gap (Female unemployment/male unemployment) | 1,025 | 1.53 | .279 | .776 | 2.73 |
| Social housing transactions per capita | 996 | .0015 | .0019 | 0 | .0154 |
| Average housing m ² price | 1,022 | 1324 | 836 | 193 | 8423 |
| House sales per capita | 1,022 | .0099 | .0134 | .0002 | .1518 |
| PP seats | 1,521 | 5.05 | 3.64 | 0 | 21 |
| PSOE seats | 1,565 | 5.92 | 3.22 | 0 | 16 |
| VOX seats | 837 | 1.178 | 1.168 | 0 | 7 |
| VOX vote share | 837 | .074 | .044 | .0038 | .35 |
| Podemos seats | 1,570 | 1.015 | 1.289 | 0 | 10 |
| Podemos vote share | 1,570 | .074 | .057 | 0 | .522 |

Note: Data was used with a 3 years lag: Elections of 2015 were compared with values from 2018, and 2014 for the placebo. Elections of 2019 were compared with values from 2022, and 2018 for the placebo. Exceptions to this rule are: 1) expenditure programs in which the lag is of 2 years since data goes to 2021; and 2) Electoral dynamic effects which results of the election were compared to the results 4 years after.

Table A.3: Results

| VARIABLES | (14) | (15) | (16) | (17) | (18) | (19) | (20) |
|-----------|-----------------|------------|----------------|----------------|---------|-------------|----------|
| | Social Services | Local dev. | Basic Services | Administration | Housing | Environment | Mobility |

| | | | | | | | |
|-------------------|-------------------|------------------|-------------------|--------------------|------------------|-------------------|----------------------|
| RD Estimate | -0.297 (0.239) | 0.240 (0.255) | 0.0200 (0.185) | -0.0747 (0.235) | 0.125 (0.221) | -0.622 (0.402) | 0.00233 (0.00479) |
| Observations | 932 | 932 | 932 | 932 | 932 | 932 | 932 |
| Robust SE | 0.410 | 0.464 | 0.273 | 0.331 | 0.335 | 0.642 | 0.00759 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 151 | 151 | 151 | 151 | 151 | 151 | 151 |
| Effec. obs. right | 132 | 132 | 132 | 132 | 132 | 132 | 132 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population. Variables are expressed as a fraction of total expenditure. Polynomial of order 1. Triangular kernel function.

| | (21) | (22) | (23) | (24) | (25) | (26) | (27) |
|----------------------|----------------------|--------------------------|---------------------------------|-------------------------|--------------------------------|-----------------------------|-----------------------|
| VARIABLE | Housing (Placebo) | Environment (Placebo) | Social Services (Placebo) | Local dev. (Placebo) | Basic Services (Placebo) | Administration (Placebo) | Mobility (placebo) |
| RD Estimate | 0.252 (0.314) | -0.365* (0.213) | -0.506* (0.281) | 0.466* (0.245) | 0.0319 (0.206) | -0.114 (0.239) | 0.00105 (0.00187) |
| Obs. | 670 | 670 | 670 | 670 | 670 | 670 | 670 |
| Robust SE | 0.412 | 0.197 | 0.412 | 0.346 | 0.290 | 0.321 | 0.00173 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 124 | 124 | 124 | 124 | 124 | 124 | 124 |
| Effec. obs. right | 112 | 112 | 112 | 112 | 112 | 112 | 112 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population in t-4. Variables are expressed in t-4 and as a fraction of total expenditure. Polynomial of order 1. Triangular kernel function.

| | (28) | (29) | (30) | (31) | (32) | (33) |
|-------------------|-------------------|-------------------|-------------------|----------------------|--------------------------|----------------------|
| VARIABLES | Expenditure | Revenue | Deficit | Revenue (Placebo) | Expenditure (Placebo) | Deficit (Placebo) |
| RD Estimate | -0.166 (0.248) | 0.0655 (0.252) | -0.326 (0.287) | 0.476 (0.292) | 0.0514 (0.237) | -0.386* (0.228) |
| Observations | 924 | 924 | 924 | 667 | 667 | 667 |
| Robust SE | 0.345 | 0.380 | 0.443 | 0.398 | 0.339 | 0.286 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 152 | 152 | 152 | 125 | 125 | 125 |
| Effec. obs. right | 129 | 129 | 129 | 109 | 109 | 109 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population and Population in t-4 for placebos.. Variables are expressed in per capita terms. Placebos are expressed for t-4. Polynomial of order 1. Triangular kernel function.

| | (34) | (35) | (36) | (37) | (38) |
|--|------|------|------|------|------|
|--|------|------|------|------|------|

| VARIABLES | Tourism index per capita (placebo) | Social housing transaccions per capita (placebo) | Unemployment rate (placebo) | Firms per capita (placebo) | Housing m2 price (placebo) |
|-------------------|--|---|--------------------------------|-------------------------------|----------------------------------|
| RD Estimate | 0.000217 (0.000711) | 0.000470 (0.000466) | 0.00214 (0.0101) | 0.00263 (0.00286) | 38.98 (192.0) |
| Observations | 637 | 719 | 742 | 743 | 741 |
| Robust SE | 0.00108 | 0.000556 | 0.0137 | 0.00379 | 270.3 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 118 | 130 | 132 | 133 | 132 |
| Effec. obs. right | 110 | 125 | 125 | 125 | 125 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population in t-4. Placebos are expressed for t-4. Polynomial of order 1. Triangular kernel function.

| VARIABLES | (39) Urbanized land area % increase (placebo) | (40) % Immigrants (placebo) | (41) Unemployment gender gap (placebo) | (42) Evictions per capita (placebo) |
|-------------------|--|-----------------------------------|--|---|
| RD Estimate | -0.0568 (0.0429) | -0.0115 (0.0218) | -0.0479 (0.0683) | -0.000616 (0.00713) |
| Observations | 666 | 743 | 742 | 975 |
| Robust SE | 0.0588 | 0.0306 | 0.0918 | 0.0106 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 124 | 133 | 132 | 163 |
| Effec. obs. right | 112 | 125 | 125 | 129 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population in t-4. Placebos are expressed for t-4. Polynomial of order 1. Triangular kernel function.

| VARIABLES | (43) VOX seats (t+4) | (44) PP seats (t+4) | (45) PSOE seats (t+4) | (46) <i>Podemos</i> seats (t+4) | (47) VOX seats (t+4) fuzzy | (48) VOX vote share (t+4) fuzzy |
|-------------------|----------------------------|------------------------|-----------------------------|---------------------------------------|----------------------------------|---------------------------------------|
| RD Estimate | 1.051*** (0.297) | 0.254 (1.089) | -0.707 (0.895) | 0.347 (0.402) | 1.323*** (0.374) | 0.0231*** (0.00694) |
| Observations | 743 | 709 | 729 | 731 | 743 | 743 |
| Robust SE | 0.487 | 1.762 | 1.530 | 0.697 | 0.625 | 0.0114 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 131 | 91 | 95 | 95 | 131 | 131 |
| Effec. obs. right | 101 | 97 | 99 | 99 | 101 | 101 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population. Polynomial of order 1. Triangular kernel function.

| VARIABLES | (49) VOX vote share (t+4) | (50) PP vote share (t+4) | (51) PSOE vote share (t+4) | (52) <i>Podemos</i> vote share (t+4) | (53) VOX vote share (t+4) no outliers 1% | (54) VOX vote share (placebo) |
|-------------------|---------------------------------|--------------------------------|----------------------------------|--|--|--|
| RD Estimate | 0.0183*** (0.00529) | -0.000904 (0.0497) | -0.0393 (0.0416) | 0.0118 (0.0142) | 0.0158*** (0.00518) | -0.0116 (0.0173) |
| Observations | 743 | 709 | 729 | 731 | 728 | 557 |
| Robust SE | 0.00854 | 0.0814 | 0.0730 | 0.0251 | 0.00842 | 0.0232 |
| Bandwidth | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 | 0.0130 |
| Effec. obs. left | 131 | 91 | 95 | 95 | 127 | 104 |
| Effec. obs. right | 101 | 97 | 99 | 99 | 101 | 96 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Cluster robust residuals by municipalities. Covariates: Population and Population in t-4 for placebos. Variables are expressed in per capita terms. Placebos are expressed for t-4. Polynomial of order 1. Triangular kernel function.

Table A.4: *Podemos* Electoral Data Disaggregated by Population

| Year | Population | Candidatures | Seats obtained (and in % terms) |
|------|------------|--------------|---------------------------------|
| 2015 | All | 825 | 1303 (9.09%) |
| | 0-5k | 364 | 419 (13.54%) |
| | 5-10k | 127 | 162 (9.81%) |
| | 10-20k | 119 | 207 (10.23%) |
| | 20-50k | 114 | 217 (9.06%) |
| | 50-100k | 52 | 154 (11.85%) |
| | >100k | 49 | 191 (13.81%) |
| 2019 | All | 1116 | 1150 (6.26%) |
| | 0-5k | 312 | 241 (13.99%) |
| | 5-10k | 185 | 128 (5.32%) |
| | 10-20k | 201 | 158 (4.62%) |
| | 20-50k | 220 | 246 (5.32%) |
| | 50-100k | 112 | 158 (5.64%) |
| | >100k | 86 | 220 (9.19%) |
| 2023 | All | 833 | 682 (4.67%) |

| | | |
|---------|-----|-------------|
| 0-5k | 172 | 142 (8.33%) |
| 5-10k | 148 | 80 (4.16%) |
| 10-20k | 154 | 104 (3.97%) |
| 20-50k | 193 | 157 (3.87%) |
| 50-100k | 97 | 112 (4.62%) |
| >100k | 69 | 87 (4.64%) |

Note: Table shows the evolution of the number of candidatures, number of total seats and % of seats of Podemos for different population ranges. % of seats is calculated with respect total seats of municipalities in which they ran for elections that year.