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Taxing Wealth or Capital Income? The Impact of Political Ideology on Property Tax Policy in Spain: A Quasi-Experimental Study

José María Tubío-Sánchez
Santiago Lago-Peñas
Xoaquín Fernández-Leiceaga
María Cadaval-Sampedro

Georgia State University | Andrew Young School of Policy Studies

Tel: 404-413-0233

Website: pfrc.gsu.edu

Address:
55 Park Place NE
7th Floor
Atlanta, GA 30303

Mail:
Public Finance Research Cluster
P.O. Box 3992
Atlanta, GA 30302-3992

International Center for Public Policy
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Taxing Wealth or Capital Income? The Impact of Political Ideology on Property Tax Policy in Spain: A Quasi-Experimental Study

José María Tubío-Sánchez, Santiago Lago-Peñas, Xoaquín Fernández-Leiceaga, and María Cadaval-Sampedro*

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Abstract

Although an extensive theoretical literature debates the advantages of taxing wealth stocks versus capital income, the role of partisan effects in shaping these fiscal tools remains under-explored. This study investigates the party control effect on local property taxation in Spain, comparing a recurrent tax on property wealth with a capital gains tax on property transfers, a non-mandatory tax. Employing a regression discontinuity design on close municipal elections from 2011 to 2015, a period marked by the aftermath of the 2008 financial crisis, we isolate the impact of left-wing government control. We find that left-wing governments increase effective property tax rates roughly twice the average increase under right-wing administrations, an effect substantially amplified in multi-term governments (mayors with previous experience) and unaffected by coalition status. For the capital gains tax, ideology mainly affects the adoption decision: left-wing governments are about 5 percent more likely to implement the tax, and this effect is stronger in less wealthy municipalities. However, once the tax is in place, the partisan effect plays no systematic role in determining the tax rate. Thus, despite a political discourse that does not map neatly onto the wealth-versus-capital-income distinction, actual partisan behaviour aligns broadly with theoretical expectations. The post-crisis context amplified ideological differences in property tax responses.

JEL Codes: H71, H24, H72

* Tubío-Sánchez: International Center for Decentralization and Governance (IDEAGOV); Lago-Peñas, Fernández-Leiceaga, and Cadaval-Sampedro: Universidade de Santiago de Compostela (USC), International Center for Decentralization and Governance (IDEAGOV), and CISPAC: Research on Territory

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1 Introduction

There is now a wide theoretical literature that examines the choice between taxing wealth versus capital income (Bastani and Waldenström, 2023; Glogower, 2021; Scheuer and Slemrod, 2021). This choice is, however, not purely technical, for it reflects deeper ideological and philosophical positions regarding justice, ownership, and the role of the state, which includes assumptions about individual freedom and collective responsibility.

In this debate, scholars advocating wealth taxation argue that extreme concentration of assets is intrinsically problematic, as it generates economic power and political influence, particularly through land and financial holdings. From this perspective, taxing wealth directly is justified to address accumulated privilege, intergenerational inequality, and the "structural divergence" between returns on capital and economic growth highlighted by Piketty (2014). In contrast, proponents of capital income taxation focus on taxing realized flows of economic benefit rather than the mere holding of assets, emphasizing efficiency, neutrality, and fairness. This approach aligns with liberal, market-friendly ideals that respect private ownership and seek to tax only when ownership generates income, while preserving incentives for investment and productive activity.

Do these positions align in practice with common political ideologies? To date, little attention has been paid to the role of partisanship in shaping preferences for different forms of property taxation. The existing literature has largely focused on the partisan determinants of tax burdens and public expenditure (Reed, 2006; Tavares, 2004). The few studies that examine partisan effects on property taxation provide mixed evidence. For example, Gerber and Hopkins (2011) find no evidence that political partisanship influences property tax levels in the United States, whereas Fiva et al. (2018), using data from Norway, show that left-wing parties are associated with higher levels of property taxation. Similarly, Freier and Odendahl (2015), using data from Bavarian municipalities, find that the center-left SPD tends to reduce property taxes, while the Green Party increases them substantially. To the best of our knowledge, no empirical study has systematically compared partisan preferences across different forms of property taxation, such as recurrent property taxes and taxes on property transfers.

This paper contributes to the debate on alternative forms of wealth taxation by empirically examining whether partisan differences influence the use of two property tax instruments in Spain: the recurrent tax on real estate wealth and the capital gains tax levied on property transfers. In the case of property taxation, Spain provides a suitable context for this analysis, as its recurrent property tax approximates a tax on real estate wealth, in contrast with anglophone or common law countries, where property taxation has a more limited redistributive capacity and its foundation has more to do with protecting property rights (Piketty, 2014, pp.371; Pippin et al., 2010). The liberal school of thought was also more prominent in introducing the benefits principle in public finance, particularly in the United States, where property taxes are viewed as a user charge for public goods and services (Hale, 1985).

With regard to the local capital gains tax, it occupies an ambiguous position between a property levy and a capital income tax. It resembles a capital income tax because it is triggered by the transfer of urban land (through sale, inheritance, or donation) and the tax base is defined as the increase in land value during the holding period. Liability falls on the seller, aligning the tax with realized gains rather than the property stock. However, it differs from a true capital income tax in practice. The tax base is a notional gain calculated from cadastral values and municipal coefficients, not the actual market gain, meaning it can be levied even when the owner suffers a loss (a feature that led to its annulment by the Constitutional Court in 2021 and subsequent reform). Moreover, unlike a capital income tax integrated into the personal income system, the capital gains tax is a local, transaction-based levy intended for municipal revenue, functioning more as a presumptive tax on transfers than a measure of actual income.

The partisan positions on these two taxes do not map neatly onto the theoretical debate over taxing wealth versus capital income. The Spanish left (PSOE and allied parties) and right (PP and center-right parties) have historically converged more on the property tax than on the municipal capital gains tax, at least in formal policy discourse. Both sides consider the property tax primarily as a stable, universal local revenue source tied to cadastral values, which is easy to administer and politically relatively non-controversial. While the left tends to emphasize the redistributive potential of the property tax, the right usually stresses efficiency and tax relief, proposing lower rates or caps. Despite these differences, both sides accept the principle of taxing property based on cadastral value, and the scope for sharp ideological divergence is relatively limited because the tax is a foundational part of municipal finances.

In contrast, the local capital gains tax has been more politically contentious. The left generally frames it as a tool to capture unearned gains from rising property values and to reinforce municipal revenues, emphasizing social fairness. The right, however, tends to view it as a burdensome tax on property owners that can disincentivize transactions or penalize owners in cases where the gain is purely theoretical, particularly after the 2008-2013 crisis when many sales occurred at a loss. This divergence is intensified by the tax's technical complexity and the fact that it can produce perceived injustices, as it may be levied even when there is no real economic gain. The 2021 Constitutional Court ruling and the subsequent reform underscored the contentious nature of the tax, confirming that ideological and political debates over capital gains tax are far more intense than those surrounding the property tax. Some right-wing parties have even advocated for its elimination (Ferreira, 2019).

To study the impact of partisan control on both tax mechanisms, we use a regression discontinuity (RD) approach comparing close elections, a method widely applied to identify the effects of political parties on policies while controlling for omitted variables.

Beyond partisanship, the internal composition of governments may also shape fiscal outcomes. A growing literature shows that mayors who have already served one term may feel more secure ("incumbency advantage") and thus more willing to implement ideologically motivated tax changes, whereas first-term mayors might look to neighbouring jurisdictions to enhance their re-election prospects (Alvarez and Peralta, 2014; Solé-Ollé, 2003). Likewise, coalition governments face a common-pool resource problem, leading to higher spending and possibly different tax-setting behaviour than single-party governments (Martín and Vanberg, 2013; Garmann, 2014; Solé-Ollé, 2003). These considerations suggest that the impact of partisanship on property taxation could be amplified or dampened by these different government characteristics. We therefore complement our main RD analysis with subsample estimations that distinguish between single-party and coalition governments, and between first-term and multi-term mayors.

Our study focuses on the 2011–2015 local electoral cycle. In the aftermath of the 2008 financial crisis, Spain's real estate market remained depressed, while local governments faced substantial fiscal pressures. This period exhibits the largest variation in effective property tax rates, suggesting that the economic downturn may have triggered different policy responses depending on the ideology of the ruling government (Galasso, 2012).

In this context, one would generally expect a reduction in capital gains taxes to stimulate the real estate market, alongside an increase in property tax rates to alleviate fiscal stress. The role of political ideology in shaping these policies is less clear, particularly with regard to capital gains taxation. From a theoretical standpoint, left-wing governments would be expected to rely more heavily on property taxation than right-wing ones. However, capital gains taxes, given that they do not constitute a standard tax on capital income, present a more ambiguous case. Although such taxes could, in principle, align with right-leaning fiscal frameworks, their strong unpopularity among conservative constituencies in Spain, combined with their atypical design, leads us to hypothesize that right-wing governments may reduce them more aggressively than left-wing governments.

The paper divides into the following sections. Section 2 provides an overview of the Spanish local government system and details the institutional features of the two main property taxes, the recurrent property tax and the municipal capital gains tax. Section 3 outlines our empirical strategy, explaining the regression discontinuity design used to identify the causal effect of ideology on tax policy and describing the data sources. Section 4 presents the main results, first for the recurrent property tax and then for the capital gains tax, followed by a series of robustness checks. Finally, Section 5 concludes by discussing the implications of our findings for understanding the political economy of property taxation.

2 Spain local government and property taxation

2.1 Spanish local governments

In Spain, local governments are organized at the municipal level, with municipalities (8,132 in total) functioning as the basic units of local administration. Municipal councils are elected every four years through a closed-list proportional representation system using the D'Hondt method. Councilors are elected from closed and blocked lists that receive more than 5% of the valid votes, which favors larger parties and often results in a concentration of seats among the main political forces. The number of councilors in each municipality depends on its population size, ranging from 7 in municipalities with 250 inhabitants or more to several dozens in larger municipalities. In our dataset we include municipalities with seats ranging from 9 (1000 inhabitants) to 58.

The mayor is not directly elected by the population but rather chosen by the municipal council from among its members. By convention, the candidate of the most-voted party is often elected mayor, but when no party secures an outright majority, coalition agreements or minority governments are common (around 20% of local government in our dataset are coalitions). This institutional design gives significant importance to party alliances and political negotiations after local elections, since pre-electoral coalitions are rare, especially in medium-sized and large municipalities where fragmented councils are the norm. The coalitions are typically formed along ideological lines. Although local issues are important, ideology is the best predictor of voter loyalty, with right-wing voters tending to be more loyal to the party they vote for. (Sagrera et al., 2016).

The two dominant state-wide parties parties during this period were the PP (right-wing) and the PSOE (left-wing), which together accounted for 76% of mayors (48% from the PP and 27% from the PSOE). Additionally, there is a third national party, IU (the former Communist Party), which, although it held only 2% of mayoralties, often governed in coalition with the PSOE when the latter failed to obtain an absolute majority.

The remaining 24% of municipalities during the study period were governed by regional parties. These parties operate primarily within a specific autonomous community (e.g., Catalonia, the Basque Country, or Galicia). Their ideology is often shaped by a combination of the regional/nationalist cleavage (center–periphery) and the traditional left-right divide. The left-right cleavage in economic and social terms is therefore represented mainly by the national parties. By contrast, the national-regional cleavage revolves around the territorial organization of the state and the degree of autonomy or independence sought by Spain's regions. Regional or nationalist parties (such as CiU, ERC, PNV, and BNG) position themselves primarily along this territorial dimension, which frequently cuts across the traditional ideological spectrum.

To isolate the causal effect of the ideological orientation of local governments, we focus primarily on national parties, as this provides a cleaner contrast between centre-left and centre-right administrations, where policy differences are more directly linked to the national party platform. Regional and nationalist parties often display complex ideological profiles that combine left-right positions with regionalist or pro-independence agendas. Simply classifying them as "left" or "right" according to their national-level orientation may therefore introduce measurement error. For example, classifying CiU as merely a "right-wing" party ignores its strong nationalist component, which may independently affect fiscal policy.

In terms of fiscal autonomy, Spanish municipalities operate within a framework defined by national legislation, particularly the Ley Reguladora de las Haciendas Locales (Local Finance Act). Local governments do not have discretion to design new taxes, but they do have the authority to set tax rates, grant exemptions, and establish rebates within the legal parameters set by the central state. This applies most notably to the property tax (Impuesto sobre Bienes Inmuebles, IBI) and the municipal capital gains tax (Impuesto sobre el Incremento del Valor de los Terrenos de Naturaleza Urbana, known as *plusvalía municipal*). Within these bounds, municipal governments retain meaningful room to adjust their tax policy, making political ideology and party control important determinants of fiscal outcomes.

This institutional structure implies that local taxation in Spain reflects not only economic and demographic conditions, but also the partisan composition of municipal councils and the mayor's capacity to secure majority support. As a result, the study of property and capital gains taxation at the local level must account for both the national constraints imposed on municipalities and the ideological preferences that shape their decisions within the available margins.

2.2 Local property taxation in Spain

There are two main property taxes at local level in Spain, the recurrent property tax and the capital gains tax on urban land transfer. In the following we describe how both taxes operate and their relevance in local finances.

2.2.1 Property tax

Spanish property tax is fundamentally ownership-based rather than use-based. Tax liability is legally attached to the cadastral owner rather than the legal property owner. This arrangement has deep historical origins in the fiscal organization of the Spanish state. Since the nineteenth century, the Cadastre has served as the central administrative instrument for recording and valuing immovable property. Unlike the *Registro de la Propiedad* (Property Register), which records ownership titles and legal rights, the Cadastre was designed primarily for fiscal purposes, providing a uniform and continuous record of land and buildings. Practically, tax authorities required a debtor who was clearly identifiable and administratively stable. Given that ownership disputes were common and the Property Register (a deed system register) was often incomplete or slow to update, the cadastral holder was considered the most reliable reference for taxation. This principle was later codified in the *Ley de Haciendas Locales* (Local Treasuries Law), which explicitly defined the cadastral registrant as the taxpayer, regardless of discrepancies with the legal owner, until the Cadastre itself was updated. Additionally, liability falls on the registered owner regardless of whether the property is occupied, rented, or left vacant. In this sense, the Spanish system is less directly linked to "use" and more explicitly anchored in wealth ownership. Although the benefits view has gained some influence in recent years (Durán Cabré and Esteller Moré, 2014), the Spanish property tax remains closely aligned with a tax on property wealth.

The Cadastre, managed by the Ministry of Finance, is responsible for the valuation of real estate, which determines the cadastral value serving as the tax base for the recurrent property tax. Cadastral updates are centrally managed but may be initiated either by the Directorate General of the Cadastre or at the request of municipalities. Mass reassessments occur when land use plans change, when cadastral and market values diverge, or after five to ten years, as mandated by law.

Municipalities set tax rates and exemptions within ranges established by the central government (0.4–1.1% for urban properties; 0.3–0.9% for rural). Cadastral values are calculated by dividing municipalities into valuation zones and determining land and construction modules. Land values are benchmarked to market data but adjusted with a coefficient (set at 0.5), fixing cadastral values at roughly half of market values. Construction values reflect costs, adjusted for depreciation.

Although law requires updates at least every 10 years, assessments are often outdated, averaging 22 years, especially in rural areas. Property taxation is fiscally significant, providing about 25% of total local revenues and 50% of own-source revenues, with its importance growing since 2004. It is well known that there is an inverse relationship between new assessment and nominal tax rates. When a new assessment takes place, the incumbent government tends to lower nominal property tax rates to reduce the tax burden. So an effective tax rate (tax liabilities divided by the tax base) is a much better measure to reflect the real tax burden (Bell and Kirschner, 2009). This also helps to prevent controlling for other factors such as exemptions.

2.2.2 Capital gains tax

In Spain, capital gains on property transfers are taxed through two distinct mechanisms that operate in parallel but reflect different logics of taxation.

On the one hand, the capital gains tax within the Personal Income Tax (Impuesto sobre la Renta de las Personas Físicas, IRPF) is a state-level tax administered by the Spanish Tax Agency (which operates under the Ministry of Finance) that applies to the actual economic gain realized by the taxpayer on the entire property when sold. It is important to note that the tax applies only when there is a onerous transfer of property, typically through a sale or exchange. Inheritance and gifts fall under the Inheritance and Gift Tax (Impuesto sobre Sucesiones y Donaciones, ISD), which is a separate tax administered by the Autonomous Communities.

The capital gains tax within the Personal Income Tax is computed as the difference between the acquisition price (adjusted for costs and allowable deductions) and the transfer price. This form of taxation reflects the income tax principle of taxing realized income flows rather than wealth stocks, and it applies independently of municipal taxation.

On the other hand, the municipal capital gains tax is a local tax and represents a distinctive form of capital gains taxation at the local level. Unlike standard capital gains taxes, which are typically levied on the difference between the acquisition price and the sale price of an asset and therefore capture the realized appreciation of wealth, the plusvalía municipal is based on a notional increase in the value of urban land (excluding buildings). The tax is triggered as well by the transfer of property rights, but not only sale but also inheritance or donation.

The taxable base is calculated by applying coefficients, set by law and adjusted periodically, to the cadastral land value, taking into account the number of years the property has been held, with a maximum period of twenty years. Due to outdated cadastral values, municipalities apply a fixed adjustment, capped at: 3.7% (1–5 years), 3.5% (up to 10 years), 3.2% (up to 15 years), and 3% (up to 20 years). The final tax base is then multiplied by a municipal coefficient (max 30%). Thus, the law assumed that property values would always increase over time, establishing a fictitious capital gain as the tax base (Merino, 2017).

This design produces several features that differentiate the Spanish system from typical capital gains taxation. First, the tax is levied only on urban land, classified as such in the cadastre records. Second, the calculation does not necessarily reflect the actual market gain realized in the transaction. Taxpayers may face a liability even in cases of zero or negative appreciation, a feature that has generated intense legal and political debate. These factors, together with perceived overlaps with other taxes mentioned above, have contributed to the tax being poorly regulated, subject to frequent reforms, and the target of numerous judicial appeals, particularly with regard to the tax base (Fernández and García, 2022).

The combination of a fictitious tax base, its confinement to urban land, and its role as a recurrent municipal revenue source makes the plusvalía municipal a hybrid instrument: formally a tax on capital gains, but substantively closer to a presumptive tax on land value increases, with only an indirect connection to the individual's effective economic gain from the property transaction.

The municipal capital gains tax is not a mandatory tax. Currently, around 46% of the Spanish municipalities have adopted it. Even after its implementation, the number and volume of unpaid capital gains obligations remain significant. While non-payment of property tax can trigger various responses, in the case of capital gains, the only available option is enforcement through coercive collection procedures. Despite this, total revenues from capital gains remains important in municipalities with an active real estate market. The total revenues amount to 2.45 billion euros and, like property tax revenues, their share of total municipal revenues has increased by 5% since 2004.

3 Empirical approach and data

3.1 The effect of ideology on effective property tax

We begin by estimating the party control effect on the effective property tax using the following OLS equation:

$$\Delta \textit{Effective tax rate}_i = \alpha \cdot \textit{Left}_i + \mathbf{X}_i' \beta + \varepsilon_i \tag{1}$$

where Δ *Effective tax rate* is the increase in effective tax rates during the term-of-office in municipality *i*. The dummy *Left* is equal to one in the case of a left-wing government and zero in the case of a right-wing government. The vector $\mathbf{X}$ includes control variables such as *Per capita debt* and *Per capita transfers*, which may influence local fiscal decisions, particularly when municipalities experience fiscal stress (Martinez-Vazquez and Sepúlveda, 2011). Another set of variables reflects residents' preferences. It is well known, for instance, that renters tend to favor property taxes because the tax burden does not fall on them while they still benefit from the publicly funded goods (Brunner et al., 2015).

The dummy variable *Fiscal distance* controls for constraints imposed by the nominal tax rate cap. It is constructed using squared distances to the maximum rate, categorized by the 33rd and 66th percentiles. This approach reduces collinearity while identifying municipalities with limited fiscal flexibility (Low/Medium/High). The rationale for including this control is straightforward: municipalities with nominal tax rates close to the maximum have less room to increase them.

Controls such as the cadastral *Urban area* and *Last cadastral assessment* aim to capture changes that could slightly affect the nominal tax rate and therefore the effective tax rate. We describe these variables in detail in Table 1.

Despite these controls, it is difficult to fully account for residents' preferences. In a cross-sectional setting, omitted variable bias remains a concern, since factors influencing local fiscal decisions are often context-specific or may vary over the term in office. For instance, conservative municipalities tend to differ from less conservative ones in many respects (such as income levels, education, and other socioeconomic characteristics) making it challenging to disentangle the policy effects of seat allocations from these underlying differences.

3.2 Regression discontinuity

In order to remove variation related to residents' preferences and other omitted variables, and to identify the causal effect of political ideology, we employ a regression discontinuity (RD) design based on close elections. The crucial identifying assumption is that there is no sorting around the threshold that determines which bloc wins a majority of seats, so that the outcome of a close election can be treated as quasi-random (Lee, 2008).

In a majoritarian system the RD design is straightforward because treatment status is a deterministic function of the vote share. In proportional systems such as Spain's, however, the situation is more complex. Seats are allocated via the d'Hondt rule, and the number of votes required to secure a majority depends on the full vote distribution across parties. Moreover, many local governments are formed by coalitions, so the relationship between vote shares and government control is not deterministic.

To address these complexities we first group parties into two ideological blocs: PSOE and IU in the left and PP in the right. Accordingly, we treat the election as a contest between two blocs (Pettersson-Lidbom, 2008). The treatment of interest is a dummy variable *Left* equal to one if the mayor (or the government) belongs to a left-wing party.

Second, we construct a continuous forcing variable that measures the distance to a change in the seat majority. Because the seat allocation depends on the votes of all parties, the distance cannot be measured by a single party's vote share alone. Following Solé-Ollé and Viladecans-Marsal (2013) and Folke (2014), we compute the vote distance to a left-wing seat majority, defined as the minimum number of votes (expressed as a percentage of total valid votes) that must be added to (or subtracted from) the left-wing bloc for it to gain (or lose) a majority of seats. This variable, denoted *Votes to left-wing majority*, is positive when the left bloc already holds a majority and negative when it is in the minority. Annex A shows now this variable is computed.

Third, even after grouping parties into blocs, the jump in the probability of having a left-wing government at the 50% seat threshold is less than one (Figure 4), so the design is fuzzy. We therefore use a fuzzy RD approach, where the seat-majority indicator *Left seats* $>$ *Right seats* serves as an instrument for the actual treatment *Left*.

The main estimating equation is:

$$\Delta \textit{Effective tax rate}_i = \beta \cdot \textit{Left}_i + f(\textit{Votes to left-wing majority})_i + \mathbf{X}_i' \boldsymbol{\gamma} + \varepsilon_i, \tag{2}$$

where *Left* is instrumented by *Left seats* $>$ *Right seats*, and $f(\cdot)$ is a flexible nonparametric function estimated locally around the cutoff. Specifically, we use local polynomial regression with a triangular kernel, which gives higher weight to observations closer to the threshold. The bandwidth is selected in a data-driven way to minimize the asymptotic mean squared error of the point estimator (MSE-optimal). We report results for both linear ($p = 1$) and quadratic ($p = 2$) local polynomials, with and without the inclusion of predetermined covariates to improve precision. Inference is based on bias-corrected robust standard errors that account for the local polynomial estimation (Cattaneo et al., 2024).

This approach yields a local average treatment effect (LATE) for municipalities where the seat majority is pivotal for determining which bloc forms the government, and it allows for imperfect compliance without imposing a global polynomial functional form.

In terms of the sample, we estimate Eq. 1 and Eq. 2 using municipalities with populations above 1000 inhabitants (i.e., municipalities with 9 council seats). Below this population threshold, the variation in effective tax rates between right- and left-wing parties is very similar, making it difficult to identify ideological effects. The number of municipalities with populations above 1000 inhabitants in which the competing parties are the national parties (PP, PSOE, and IU) is approximately 1000.

To shed light on the effects of incumbency duration and coalition governments, we estimate the RD specification for subsets of municipalities that were governed by the same party in the previous electoral period (multi-term governments) and for municipalities excluding coalition governments (single-party governments).

Note that the *Incumbency* variable, defined in this way, is clearly endogenous, although it is strictly predetermined, as it is determined prior to the current electoral outcome. By contrast, the *Coalition* variable is not predetermined. In both cases, however, the assumptions underlying the RD design are weaker, and the results should therefore be interpreted with caution.

3.3 The effect of ideology on capital gains tax

The analysis of capital gains tax requires particular methodological attention due to the distinctive nature of this fiscal instrument. Unlike the mandatory property tax that apply universally across municipalities, the capital gains tax represents a discretionary policy tool that local governments may choose to implement or forgo. This creates a fundamental empirical challenge: the observed changes in tax rates emerge from a two-stage decision process that cannot be adequately captured by conventional single-equation approaches.

In the first stage, municipal governments face a binary choice regarding whether to adopt the capital gains tax at all. This adoption decision is inherently political, reflecting the government's ideological orientation toward property taxation, its revenue needs, and its assessment of political costs.

The second stage occurs only among those municipalities that have implemented the tax, where governments determine the specific rate change. Here, ideology may exert a different influence, shaping how aggressively to employ an already-adopted fiscal tool. This dual decision structure necessitates an empirical strategy that explicitly accounts for both the role of ideology in adoption and the effect on tax variation.

To do this, we employ a two-part modeling framework that explicitly recognizes the sequential decision-making process of municipal governments. The first model examines the factors that determine whether a municipality implements the capital gains tax. We estimate a probit model specified as:

$$P(Adopt_i = 1 \mid \mathbf{X}_i) = \Phi\big(\gamma_0 + \gamma_1 Left_i + \mathbf{X}_i'\boldsymbol{\gamma}\big) \tag{3}$$

where $\Phi(\cdot)$ is the cumulative distribution function of the standard normal distribution. The dependent variable, $Adopt_i$, equals 1 if municipality i adopts the capital gains tax and 0 otherwise. The vector $\mathbf{X}$ is the same set of control variables as in the previous model, with a few more explained below. Notice that we have to exclude *Fiscal distance* (the distance to the maximum allowed rate), since it cannot affect adoption decision.

The second model examines how ideology affects the intensity of taxation. We proceed in a similar way as in the case of property taxation. First we estimate a linear regression model using ordinary least squares:

$$\Delta Capital\ Gain\ Tax_i = \beta_0 + \beta_1 Left_i + \mathbf{X}_i'\boldsymbol{\beta} + \varepsilon_i \tag{4}$$

This model is estimated exclusively on the subset of municipalities that adopted the capital gains tax. The dependent variable captures the change in the effective tax rate. In order to compute the effective capital gains tax rate, we first aggregate the statutory tax parameters established in local ordinances. For each municipality, we calculate the average coefficient of the tax base by taking the mean of the prescribed percentages applicable to different holding periods. Simultaneously, we compute the average statutory tax rate using the same approach.

These two components are then combined to derive the total nominal capital gains tax rate, representing the statutory liability before the application of any rebates. It is key to consider any rebates, since municipalities tend to increase them once they increase nominal tax rates to reduce the tax burden faced by taxpayers. Therefore, the effective tax rate is obtained by adjusting the nominal rate downward according to the reduction percentage granted by each municipality. This adjustment transforms the statutory rate into an effective rate that reflects the actual fiscal pressure.

The explanatory variables mirror those used in the property tax model. Since the capital gains tax is based on assessed cadastral values, we retain the controls related to cadastral assessment. In addition, we introduce one new variable, *Per capita housing transactions*, as municipalities with a more active real estate market are likely to rely more on capital gains tax revenues.

For the regression discontinuity analysis, we focus on municipalities that adopted the tax and proceed in the same manner as in the property tax regression discontinuity model.

In this case, we cannot replicate the same sample used for the property tax analysis. We use all municipalities in which the competing parties are the national parties (2920 municipalities), since municipalities that adopt the capital gains tax tend to have larger populations. Restricting the sample to municipalities with fewer than 1000 inhabitants would leave us with almost no non-adopters, making impossible to estimate Eq. 3. Excluding municipalities with populations above 1000 inhabitants would also create problems when estimating the RD specification for the capital gains tax, as it would reduce the sample size by roughly half, leading to highly imprecise coefficient estimates.

Table 1 presents the definitions of all variables and their data sources for both models.

Table 1: Definition of Variables

Variable	**Definition**	**Source**
Effective tax rate	Tax liabilities divided by the tax base	Cadastre 2011; 2015
Left	Dummy equal to 1 if the mayor belongs to a party classified as left-wing	
Left(Left seats $>$ *Right seats)*	Dummy equal to 1 if the parties classified as left-wing have more seats in the local council than those classified as right-wing	Ministry of Interior 2011
Fiscal distance	Three-level categorical variable indicating whether the difference between the maximum allowed tax rate and the actual tax rate falls in the lower, middle, or upper third of its distribution	Cadastre 2011
Population	Population at the beginning of the term	INE 2011
Last assessment	Year of the last cadastral assessment	Cadastre
Urban area	Urban area (ha) at the beginning of the term	INE 2011
Per capita debt	Total debt divided by population	Ministry of Finance
Per capita transfers	Total transfers divided by population	Ministry of Finance
Capital gain rate	Effective rates set by the municipality	Ministry of Finance 2011; 2015
Per capita housing transactions	Total of housing transactions divided by population	Ministry of Transport 2011

(Continued from previous page)

Variable	Definition	Source
Per capita cadastral value	Total cadastral value (land and infrastructure) divided by population	Cadastre 2011
Graduates	Graduates (%)	INE 2011
Immigrants	Immigrants (%)	INE 2011
Population 16-64	Population (%) between 16-64 years	INE 2011
Unemployment	Unemployement (%)	INE 2011
Coalition	Dummy equal to 1 if the government is a coalition	INE 2011
Incumbency	Dummy equal to 1 if the same party was incumbent in the previous electoral period	INE 2011

4 Results

4.1 OLS estimates

Table 2 presents ordinary least squares estimates of Equation 1 and 4, including the full set of predetermined covariates described in Table 1. For the recurrent property tax, the coefficient on *Left* is positive and statistically significant at the 5% level, indicating that municipalities governed by left-wing parties experienced an increase in the effective property tax rate that is 0.026 percentage points larger than that of right-wing municipalities. In substantive terms, this is a relatively small absolute change, but it is consistent with the direction of the causal RD estimates presented below. This association, however, is likely to be biased by omitted variables such as voter preferences or unobserved local conditions. The control variables show expected patterns: municipalities with tighter fiscal space (medium or high fiscal distance) and more recent cadastral assessments tend to raise property taxes less, while higher unemployment is associated with larger increases.

For the capital gains tax, the OLS coefficient on *Left* is negative and statistically significant at the 1% level, suggesting that left-wing governments reduce the effective capital gains tax rate by about 7.5 percentage points more than right-wing governments. However, this correlation does not account again for the endogeneity of government partisanship. As shown later, the regression discontinuity estimates reveal no systematic causal effect of ideology on capital gains tax rate changes, indicating that the OLS result is driven by confounding factors such as economic conditions or voter preferences that are correlated with both left-wing control and the evolution of the capital gains tax.

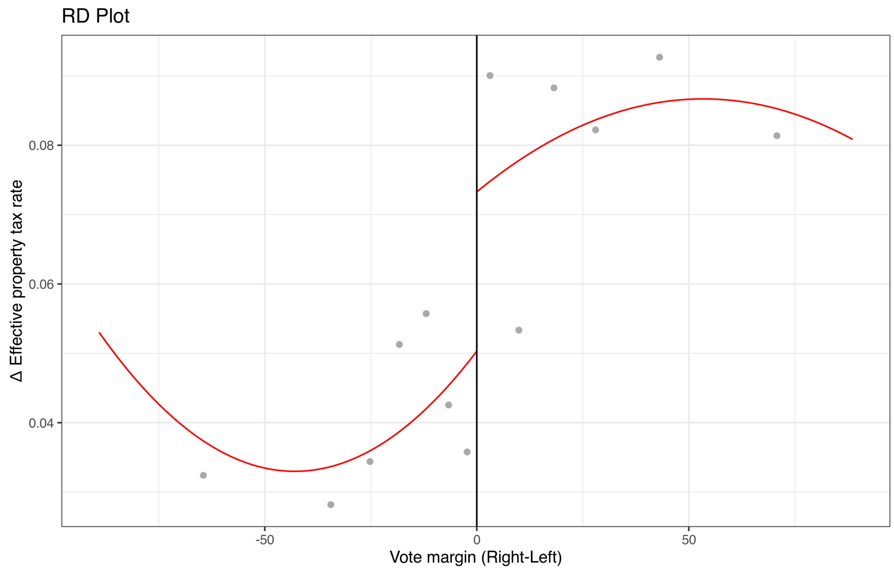
Comparing the OLS estimates for the two taxes (columns 1 and 2 of Table 2), the coefficient on *Per capita cadastral value* exhibits a different pattern. For the property tax it is positive but not statistically significant, whereas for the capital gains tax it is negative and significant, suggesting that the role of property wealth in tax setting may differ across the two instruments. Although not shown in the table, we also estimated an interaction term *Left* $\times$ *Per capita cadastral value.* For both taxes the interaction coefficient is not significant, but its sign is positive for the property tax and negative for the capital gains tax. Given the suggestive point estimates, we explore the joint effect of ideology and property value in more detail below.

Table 2: Political ideology and changes in effective tax rates

	(1) *Property tax rate*	(2) *Capital gains tax rate*
Left	0.026** (0.011)	-7.536*** (2.468)
Renters	-0.000 (0.001)	0.084 (0.208)
Population	-0.000 (0.000)	-0.0001 (0.0001)
Per capita cadastral value	0.0002 (0.0002)	-0.245*** (0.049)
Fiscal distance: Medium	-0.042*** (0.012)	-0.066 (7.170)
Fiscal distance: High	-0.036** (0.015)	-13.268** (6.528)
Per capita debt	-0.00001 (0.00002)	0.006*** (0.002)
Per capita transfers	-0.00001 (0.00005)	-0.005 (0.005)
Urban area	-0.000003 (0.00002)	0.008 (0.007)
Last assessment	-0.119*** (0.016)	41.414*** (3.822)
Immigrants	-0.002*** (0.001)	0.029 (0.153)
Population 16–64	-0.003** (0.001)	0.212 (0.194)
Unemployment	0.002** (0.001)	-0.368 (0.242)
Per capita housing transactions	-	0.017 (0.019)
Observations	930	1,049
R^2	0.115	0.196
Adjusted R^2	0.103	0.185

Notes: OLS estimates with robust standard errors in parentheses. Dependent variables measure changes in effective tax rates over the electoral term.
$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Figure 1: % Δ effective tax rates vs. % Votes to left-wing majority



4.2 RD estimates of effective property tax rates

During the studied term in office, the effective property tax increased on average by 0.045 percentage points under right-wing governments and by 0.081 percentage points under left-wing governments. Figure 1 illustrates this discontinuity at the cutoff more clearly. The vote margin is divided into separate bins on the left and right of the cutoff, with the number of bins automatically determined by the sample size and the quantile-spaced bin selection method proposed by Calonico et al. (2017). The binned averages are then smoothed using a linear fit on each side of the cutoff.

Regarding the models presented in the previous section, Table 3 presents the fuzzy RD estimates for the effective property tax rate. The fuzzy RD estimate for the full sample (Panel A, p=1) is 0.088, which is considerably larger than the OLS coefficient of 0.026. Within the same optimal bandwidth (h = 15.888), the average change in the effective tax rate for right-wing governments is 0.045. Thus, the effect of a left-wing government is to raise the tax rate by an additional 0.088 percentage points, roughly twice the average increase experienced by right-wing governments. This discrepancy between the RD and OLS estimates suggests that conventional regression underestimates the true partisan effect due to omitted variable bias.

When restricting the sample to municipalities where the mayor has already served at least one previous term, the effect more than doubles to about 0.166-0.183 and becomes significant at the 1% level. This is consistent with the notion that experienced mayors enjoy an incumbency advantage that reduces electoral uncertainty, thereby allowing them to follow ideological preferences more closely when setting property taxes. In contrast, first-term mayors appear to moderate the ideological effect, possibly because they face stronger re-election incentives and may mimic neighbouring jurisdictions to improve their electoral prospects.

Restricting only to single-party governments yields a smaller and only marginally significant effect (0.062-0.075). However, when we impose both restrictions (multi-term and single-party), the effect returns to 0.165–0.166 and is again highly significant. This pattern indicates that coalition status does not systematically increase or decrease the effect, for the the point estimates for single-party and multi-term and single-party are very similar, The full-sample effect is pulled down primarily by first-term mayors.

The first-stage estimates are strong (0.60–0.72) in the fuzzy designs, and the single-party subsamples become sharp (first stage = 1). Adding covariates barely changes the point estimates or significance levels, confirming that the RD design is well balanced.

Taken together, these results demonstrate that left-wing governments raise effective property tax rates, and that the effect is substantially larger for experienced incumbents. The weaker effect in the full sample is driven by first-term mayors, who appear to moderate the ideological impact. Coalition status, by contrast, does not systematically dampen or amplify the effect once incumbency experience is accounted for. The pattern is robust to the choice of polynomial order and covariate inclusion, lending credibility to the causal interpretation.

Table 3: Fuzzy RD estimates

Specification	N	p	h	Estimate	Std. Error	95% CI
Panel A: Baseline (no covariates)						
Full sample	977	1	15.888	0.088^{**}	(0.042)	[0.009, 0.192]
Multi-term	660	1	14.081	0.166^{***}	(0.055)	[0.065, 0.314]
Single-party	811	1	24.060	0.062^{*}	(0.031)	[−0.007, 0.136]
Multi-term & single-party	581	1	15.225	0.166^{***}	(0.050)	[0.069, 0.297]
Full sample	977	2	26.379	0.106^{**}	(0.049)	[0.011, 0.221]
Multi-term	660	2	26.994	0.183^{***}	(0.060)	[0.064, 0.338]
Single-party	811	2	32.407	0.068^{*}	(0.038)	[−0.012, 0.152]
Multi-term & single-party	581	2	30.179	0.166^{***}	(0.053)	[0.064, 0.295]
Panel B: With covariates						
Full sample	923	1	16.168	0.089^{**}	(0.042)	[0.007, 0.197]
Multi-term	628	1	11.312	0.160^{***}	(0.059)	[0.047, 0.312]
Single-party	764	1	20.877	0.075^{**}	(0.032)	[0.008, 0.155]
Multi-term & single-party	551	1	12.315	0.165^{***}	(0.049)	[0.069, 0.298]
Panel C: First stage (jump in treatment probability)						
Full sample	977	1	15.888	0.623^{***}	(0.076)	[0.432, 0.766]
Multi-term	660	1	14.081	0.722^{***}	(0.100)	[0.465, 0.913]
Full sample	977	2	26.379	0.596^{***}	(0.088)	[0.381, 0.759]
Multi-term	660	2	26.994	0.718^{***}	(0.105)	[0.434, 0.917]

Notes: Local polynomial RD estimates using triangular kernel.

p denotes polynomial order and h the bandwidth.

Robust bias-corrected confidence intervals reported.

Statistical significance based on robust p-values.

Single-party and Multi-term & single-party correspond to sharp RD designs (first stage = 1).

${}^{*}p < 0.10$, ${}^{**}p < 0.05$, ${}^{***}p < 0.01$.

4.3 Estimates of effective capital gains tax

4.4 Probit estimates of effective capital gains tax

Table 4 reports the results from the estimation of Eq. 3 The first column presents the probit model, which captures the determinants of adopting the capital gains tax. In contrast to the mandatory property tax case, ideology plays a statistically significant role in adoption. Municipalities governed by left-wing parties are more likely to introduce the tax, as indicated by the positive and significant coefficient on the *Left* variable (0.209).

In a probit model, coefficients do not directly represent changes in the probability of adoption; instead, they affect an underlying latent index. To obtain the effect on the actual probability of adoption, it is necessary to compute marginal effects. The estimated average marginal effect for the *Left* variable is 0.0485 and is statistically significant at the 1% level. This result implies that, holding other municipal characteristics constant, municipalities governed by left-wing parties exhibit, on average, a 4.8% higher probability of adopting the municipal capital gains tax than municipalities governed by right-wing parties. Put differently, for a municipality with average characteristics, the predicted probability of adoption increases by approximately 5% when government control shifts from a right-wing to a left-wing administration.

The effect is moderate but meaningful. Note that controls like *Per capita debt*, *Unemployment* or the year of *Last assessment* are still significant but their marginal effects, in terms of probability change, are individually smaller than the effect of the left-wing dummy at typical values of the covariates. This means that political ideology is the strongest predictor of adoption, highlighting that the choice to introduce a capital gains tax is highly sensitive to the partisan orientation of the municipal government rather than just economic or demographic conditions.

The interaction term in column (2) of Table 4 provides evidence that the effect of a left-wing government on the adoption of the capital gains tax varies with the level of per capita cadastral value, which serves as a proxy for average property wealth per resident. Specifically, the coefficient on the interaction term is negative (-0.0062) and statistically significant at the 1% level. This indicates that the positive effect of left-wing governments on the probability of adoption is stronger in municipalities with lower levels of per capita property wealth. As property wealth increases, the difference in adoption probability between left-wing and right-wing governments gradually narrows or can eventually be reversed.

The estimated threshold at which the marginal effect of *Left* becomes zero is approximately 69.4 (calculated as 0.43/0.0062). Given the distribution of *Per capita cadastral value* in the sample (median = 25.6, 75th percentile = 39.6, maximum = 367.7), this reversal occurs only among a relatively small number of very wealthy municipalities. In these high-value outliers, left-wing governments become less likely than right-wing governments to adopt the tax. This finding suggests that right-wing governments may be more inclined to adopt the capital gains tax when the potential revenue generated by the tax is particularly high.

Table 4: Political ideology and adoption of capital gains tax

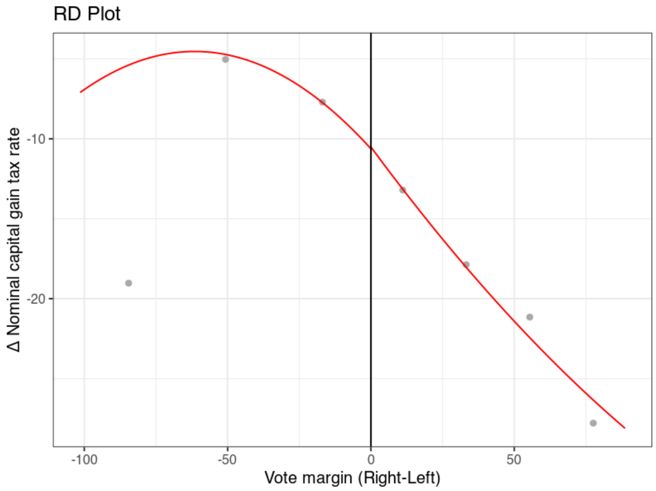
	(1) Baseline	(2) Heterogeneous effects
Left	0.209*** (0.060)	0.430*** (0.093)
Per capita cadastral value	0.0078*** (0.0016)	0.0109*** (0.0015)
Left × *Per capita cadastral value*		-0.0062*** (0.0021)
Population	0.00048*** (0.00006)	0.00048*** (0.00005)
Per capita debt	0.00042* (0.00021)	0.00041*** (0.00009)
Per capita transfers	0.00020* (0.00010)	0.00019* (0.00010)
Urban area	0.00017 (0.00054)	0.00024 (0.00050)
Last assessment	0.152* (0.080)	0.156* (0.081)
Immigrants	0.0055 (0.0036)	0.0059 (0.0036)
Population 16–64	0.0285*** (0.0050)	0.0289*** (0.0045)
Unemployment	0.046*** (0.0055)	0.046*** (0.0053)
Per capita housing transactions	0.0035 (0.0052)	0.0033 (0.0037)
Observations	2,920	2,920
AIC	2436.7	2428.9

Notes: Probit models. Robust standard errors in parentheses.
$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

4.4.1 RD estimates of effective capital gains tax

During the term under study, the effective capital gains tax decreased on average by 17.2 percentage points under left-wing governments and by 7.5 percentage points under right-wing governments. To visualize the potential discontinuity at the cutoff, Fig. 2 divides the vote margin into separate bins on the left and right sides of the threshold, with the number of bins automatically determined by the sample size using the quantile-spaced bin selection procedure proposed by Calonico et al. (2017). The binned averages

Figure 2: % Δ effetive tax rates vs. % Votes to left-wing majority



are then smoothed using a linear fit on each side of the cutoff, following the same procedure used in Fig. 1. Regardless of the bin selection method or the number of bins, Fig. 2 reveals no visible discontinuity at the cutoff.

Table 5 presents fuzzy regression discontinuity estimates of the effect of left-wing government on the change in the effective capital gains tax rate over the 2011–2015 term. The results are remarkably consistent across all specifications and subsamples. The estimated treatment effects are generally statistically insignificant, and accompanied by wide confidence intervals that include zero.

In Panel A (no covariates), none of the point estimates reaches conventional significance levels. For example, the full-sample estimate for a local linear specification is −9.09 percentage points. Similarly, restricting to multi-term or single-party governments yields estimates that are not distinguishable from zero. Using a quadratic polynomial (p=2) does not alter this conclusion. All estimates remain imprecise and insignificant, and for multi-term government the sign even reverses.

Panel B adds a rich set of predetermined covariates to improve precision. The only statistically significant results for the capital gains tax appear in the full sample with covariates (p=1) and in the single-party subsample with covariates (p=1). These findings are not robust: for the full sample, the estimate becomes insignificant when covariates are removed or when a quadratic polynomial is used (without covariates); for the single-party subsample, the effect disappears in other subsamples (e.g., multi-term governments) and is not replicated.

Panel C confirms that the first stage is strong in all fuzzy specifications (jumps between 0.63 and 0.83, all $p < 0.01$), so the null results cannot be attributed to weak instruments. In the single-party subsamples the design becomes sharp (first stage = 1), which is expected because coalition governments are excluded.

Overall, the evidence suggests that there is no robust or systematic causal effect of left-wing government on changes in the effective capital gains tax rate once the tax has already been adopted. Most estimates are statistically insignificant, confidence intervals are generally wide, and the magnitude of the coefficients varies across specifications and subsamples. Although a few covariate-adjusted specifications produce statistically significant negative effects, these results are not stable across polynomial orders or alternative samples and therefore should be interpreted cautiously. The consistently strong first stage indicates that the absence of robust effects is not driven by weak identification. These findings suggest that the negative and statistically significant coefficient on *Left* in Table 2 is likely biased due to omitted variables and therefore should not be interpreted as causal.

Taken together, the findings suggest that ideological differences may matter for the adoption decision itself, but subsequent adjustments in effective tax rates are more strongly associated with institutional, cadastral, and housing-market factors.

Table 5: Fuzzy RD estimates (Capital gains Tax)

Specification	N	p	h	Estimate	Std. Error	95% CI
Panel A: Baseline (no covariates)						
Full sample	1049	1	19.096	-9.089	(11.536)	$[-37.100, 14.528]$
Multi-term	733	1	19.307	-1.042	(14.388)	$[-35.253, 29.736]$
Single-party	906	1	19.295	-10.730	(8.720)	$[-33.156, 6.800]$
Multi-term & single-party	664	1	18.355	-7.694	(11.317)	$[-36.674, 14.962]$
Full sample	1049	2	23.246	-15.425	(17.283)	$[-55.496, 20.430]$
Multi-term	733	2	27.304	0.919	(18.890)	$[-40.247, 42.378]$
Single-party	906	2	24.679	-10.895	(10.930)	$[-33.847, 14.415]$
Multi-term & single-party	664	2	27.834	-8.841	(13.658)	$[-40.284, 20.929]$
Panel B: With covariates						
Full sample	1049	1	18.247	-15.375^{*}	(9.532)	$[-43.309, 0.542]$
Multi-term	733	1	21.136	3.382	(11.626)	$[-25.032, 28.863]$
Single-party	906	1	13.192	-20.581^{**}	(8.272)	$[-42.342, -5.453]$
Multi-term & single-party	664	1	17.827	-4.781	(10.142)	$[-30.510, 15.189]$
Panel C: First stage (jump in treatment probability)						
Full sample	1049	1	19.096	0.714^{***}	(0.071)	[0.541, 0.862]
Multi-term	733	1	19.307	0.830^{***}	(0.082)	[0.626, 0.996]
Full sample	1049	2	23.246	0.627^{***}	(0.100)	[0.368, 0.809]
Multi-term	733	2	27.304	0.790^{***}	(0.108)	[0.535, 1.009]

Notes: Local polynomial RD estimates using triangular kernel.

p denotes polynomial order and h the bandwidth.

Robust bias-corrected confidence intervals reported.

Statistical significance based on robust p-values.

Single-party and Multi-term & single-party correspond to sharp RD designs (first stage = 1).

${}^{*}p < 0.10$, ${}^{**}p < 0.05$, ${}^{***}p < 0.01$.

4.5 Robustness checks

Regarding the robustness checks, our goal is to assess how sensitive the key coefficients are to alternative tests and model specifications. In general, three main concerns arise when evaluating the robustness of an RD design: (1) potential manipulation of the forcing variable; (2) sensitivity to different bandwidth choices; and (3) the possibility of covariate discontinuities at the cutoff.

We focus on the property tax model (Eq. 2), since the capital gains tax RD model does not yield statistically significant estimates. Nevertheless, we performed the same robustness checks for the capital gains tax specification, and all of them support the validity of the design, reinforcing the conclusion that ideology has no significant effect on the capital gains tax.

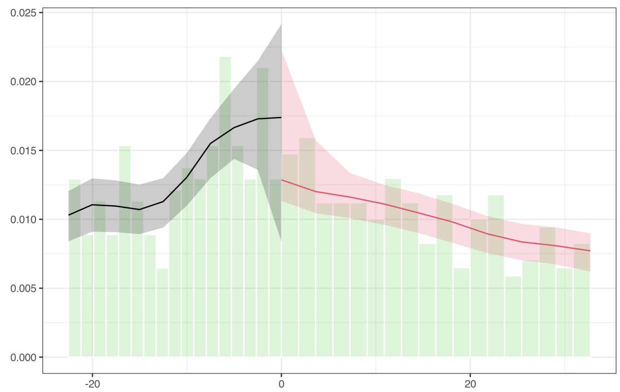
Finally, we run the RD regression for property taxes for the pooled electoral periods since 2007 until 2023 (four in total) to check whether the results hold and are not due to special characteristics of the 2011-2015 period.

Regarding the possibility of manipulation of the forcing variable, recall that the validity of the RD design relies on the assumption of local randomization, that is, the absence of sorting around the threshold. In our context, manipulation could in principle arise from two sources: pre- or post-electoral coalition formation, or electoral fraud. Since there is no evidence of electoral fraud in Spain, only coalition behavior remains as a potential concern. Post-electoral coalitions are not an issue here because we rely on electoral blocs rather than post-hoc agreements. Pre-electoral coalitions are generally rare in Spain due to the incentives created by the proportional representation system. However, the substantial political fragmentation that followed the Great Recession of 2008 makes this a potential source of sorting.

To address any such concerns, we conduct the density discontinuity test proposed by McCrary (2008). The test yields no evidence of manipulation (p-value = 0.9). The graphical evidence in Fig. 3 shows no indication of a significant discontinuous jump at the threshold. Both the numerical test and the graphical inspection are based on data-driven bandwidths chosen using mean squared error-optimal selection.

Table 6 presents fuzzy RD estimates using half, optimal, and double the MSE-optimal bandwidth. The non-monotonic pattern of the coefficients (0.052, 0.079, 0.048) suggests that the true underlying relationship may have some curvature. At the double bandwidth, the local linear approximation may start to incur bias (because the polynomial is no longer a good fit over the wider window), which can affect the point estimate but also narrow the standard errors (if the bias is not fully corrected). The marginal significance

Figure 3: Discontinuity in the forcing variable. McCrary test.



at double bandwidth could therefore be a spurious result of bias, not a more reliable signal.

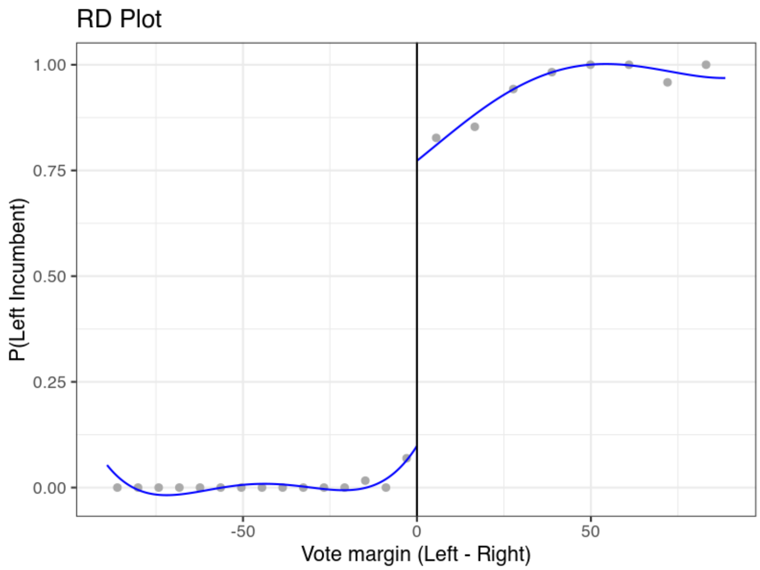
Table 6: Fuzzy RD estimates across alternative bandwidths

	Half otimal BW	Optimal BW	Double optimal BW
Treatment Effect	0.052	0.079	0.048
Robust p-value	0.671	0.261	0.059
First Stage	0.505	0.638***	0.727***
Robust p-value (First Stage)	0.363	0.000	0.000
Bandwidth (h)	8	16	32
Effective observations	217	383	663
Kernel		Triangular	
Estimation method		Local polynomial (fuzzy RD)	

Notes: The table reports fuzzy regression discontinuity estimates using local polynomial regression. Only bias-corrected robust p-values are reported. Standard errors are based on nearest-neighbor (NN) inference following (Cattaneo et al., 2024). $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

In Fig. 4 we show a graphical representation of the first stage of the fuzzy regression discontinuity design. The probability of a left-wing government jumps by about 70% at the threshold, reflecting imperfect compliance. Some municipalities with a left-wing seat majority end up with a right-wing government (or vice versa). This visual evidence supports the use of an instrumental variable approach, where the seat-majority dummy is used as an instrument for actual left-wing control.

Figure 4: Probability of left control



Finally, we conduct a placebo test on the predetermined covariates to assess whether any discontinuities arise at the threshold. As shown in Table 7, nearly all covariates display no statistically significant jumps at the cutoff. Overall, this evidence supports the identifying assumption that municipalities just above and below the cutoff are comparable in observable characteristics, thereby reinforcing the causal interpretation of our findings.

Table 7: Covariate balance tests around the RD cutoff

Variable	BW Left	BW Right	RD Estimate	Robust p-value	95% CI	Effective N
Renters (%)	17.204	17.204	1.171	0.336	[-1.366, 3.997]	409
Population	15.301	15.301	2504.606	0.275	[-2120.837, 7451.254]	374
Per capita cadastral value	21.962	21.962	3.851	0.320	[-4.067, 12.433]	500
Per capita debt	24.834	24.834	-10.840	0.955	[-117.418, 110.823]	554
Per capita transfers	17.770	17.770	-23.903	0.296	[-72.128, 21.979]	424
Urban area	12.857	12.857	33.168	0.748	[-111.739, 155.632]	327
Years since assessment	15.943	15.943	0.116	0.111	[-0.032, 0.306]	382
Immigrants (%)	20.503	20.503	-1.685	0.384	[-6.550, 2.523]	468
Population 16–64 (%)	17.332	17.332	0.575	0.632	[-1.525, 2.511]	411
Unemployment (%)	21.681	21.681	-0.168	0.797	[-2.135, 1.640]	492

In order to assess whether these results persist across electoral cycles and are not driven by circumstances specific to the 2011-2015 period, we estimate the RD specification for four electoral terms spanning 2007 to 2023. Table 8 presents the main results. Over the full 2007-2023 period, municipalities that narrowly elected left-wing governments exhibit higher property tax outcomes than municipalities that narrowly elected right-wing governments. The estimated treatment effect is positive, economically meaningful, and statistically significant under both conventional and robust bias-corrected inference, providing evidence that ideology influences local property taxation.

However, these results appear to be driven primarily by changes during the 2011-2015 electoral period, suggesting that economic downturns exacerbate ideological differences in property taxation. In the remaining electoral periods, ideological differences do not seem to play a substantial role in explaining tax differences, which instead appear to be driven mainly by residents' electoral preferences or by the fiscal situation of the municipality.

Table 8: Fuzzy regression discontinuity estimates, 2007–2023

	First stage	Treatment effect
Coefficient (Conventional)	0.718	0.054
Conventional Std. Error	(0.039)	(0.026)
Robust z-statistic	15.273	2.082
Robust p-value	0.000	0.037
Robust 95% CI	[0.605, 0.784]	[0.004, 0.124]
Polynomial order (p)	1	1
Kernel	Triangular	
Bandwidth selection	MSE-optimal (mserd)	
Bandwidth (h)	17.586	
Observations	3,154	
Effective observations	1,334	

Notes: The table reports fuzzy regression discontinuity estimates using local polynomial regression. Coefficients correspond to conventional point estimates. Statistical inference (z-statistics, p-values, and confidence intervals) is based on bias-corrected robust inference following (Cattaneo et al., 2024). Standard errors are nearest-neighbor (NN). The running variable cutoff is normalized to zero.

5 Conclusions

This study provides evidence that partisanship exerts distinct influences on different forms of property taxation in Spanish municipalities. Using a fuzzy regression discontinuity design that exploits close municipal elections, we isolate the causal effect of left-wing government control on two local taxes: the recurrent property tax (a wealth-based tax) and the municipal capital gains tax (a transaction-based tax).

Our analysis reveals a clear and robust causal effect of left-wing governance on recurrent property taxation. In the full sample, left-wing governments increase the effective property tax rate by about 0.088 percentage points more than right-wing governments, roughly twice the average increase observed under right-wing administrations. This effect is substantially larger than the OLS benchmark, indicating that conventional regression underestimates the true ideological impact due to omitted variable bias. Moreover, the effect is strongly heterogeneous: when we restrict the sample to mayors who have already served at least one previous term (multi-term incumbents), the estimated effect more than doubles to about 0.166–0.183 and is highly significant. In contrast, first-term mayors appear to moderate the ideological effect, possibly because they face stronger re-election incentives. Coalition status, by itself, does not systematically amplify or dampen the effect once incumbency experience is accounted for. These findings are robust to the choice of local polynomial order, covariate inclusion, and alternative bandwidths, and they pass standard validity tests (continuity of the forcing variable and covariate balance).

For the capital gains tax, the results are more nuanced. Left-wing governments are about 5% more likely to adopt the tax than right-wing governments, and this adoption effect is stronger in municipalities with lower per-capita property wealth. However, once the tax is in place, ideology plays no systematic role in determining the level at which the tax is set. Fuzzy RD estimates for changes in the effective capital gains tax rate are small, statistically insignificant, and lack a consistent sign across subsamples and specifications. The few marginally significant coefficients are not robust to alternative polynomial orders or sample restrictions. Thus, while ideological preferences shape the decision to introduce the tax, subsequent rate adjustments are driven primarily by technical factors such as cadastral revaluations and housing market activity.

Pooled estimates for the 2007-2023 period show a positive and significant effect of left-wing government on property tax changes, but this result appears to be driven largely by the 2011–2015 electoral term. This suggests that economic downturns and fiscal stress may amplify ideological differences in property taxation.

These findings contribute to several debates in political economy of property taxation. They help reconcile mixed evidence on property taxation by showing how institutional context (ownership- vs. use-based systems) mediates ideological effects. They also reveal that the same ideology can affect tax instruments differently, strongly shaping recurrent wealth taxes but only influencing adoption (not rates) of transaction-based capital gains taxes. Moreover, the heterogeneity by incumbency highlights the role of political experience in policy outcomes.

Although the Spanish political debate over property taxation fits only imperfectly with the theoretical distinction between wealth and capital-income taxes, our results reveal a behavioural pattern that is broadly consistent with theoretical expectations: left-wing governments tax the wealth-like property tax more heavily, and they are also more willing to adopt the capital gains tax, while right-wing governments are more reluctant to use either instrument.

From a policy perspective, recurrent property taxes are ideologically sensitive and potentially redistributive, whereas capital gains taxes on transfers operate as more pragmatic revenue tools once adopted. Future research should examine whether these patterns persist across economic cycles and post-2021 reforms, and explore the mechanisms linking ideology to tax decisions (e.g., party platforms, voter preferences, or bureaucratic implementation).

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A Construction of the forcing variable

The forcing variable used in the regression discontinuity design measures the minimum percentage of total valid votes that must be added to (or subtracted from) the left-wing bloc for it to gain (or lose) a majority of seats, under the assumption that votes migrate only to or from abstention. The algorithm proceeds as follows.

Notation

For a given municipality m, let:

- T = total number of council seats,
- $M = \lfloor T/2 \rfloor + 1$ = majority threshold,
- V = total valid votes cast,
- $\mathcal{L}$ = set of left-wing parties, $\mathcal{R}$ = set of right-wing parties,
- for each party p: v_p = votes received, s_p = seats allocated (by the D'hondt rule).

Define $S_L = \sum_{p \in \mathcal{L}} s_p$, $S_R = \sum_{p \in \mathcal{R}} s_p$.

The forcing variable ψ is computed as:

Case 1: Left has a majority ($S_L \geq M$)

The left bloc must lose votes to abstention until $S_L < M$. Repeat while $S_L \geq M$:

1. Identify the weakest seated left party: $x = \arg\min_{p \in \mathcal{L}: s_p > 0} \frac{v_p}{s_p}$.
2. Identify the strongest right challenger: $z = \arg\max_{p \in \mathcal{R}} \frac{v_p}{s_p + 1}$.
3. Compute $v_x = \left(\frac{v_x}{s_x} - \frac{v_z}{s_z + 1} \right) s_x$ (if $v_x \leq 0$, set $v_x = 1$ to break ties).
4. Find the vote share of party x within the left bloc: $\alpha_x = v_x / \sum_{p \in \mathcal{L}} v_p$.
5. Votes to remove from the whole left bloc: $\Delta = v_x / \alpha_x$.
6. Reduce each left party's votes proportionally: $v_p \leftarrow v_p - \Delta \cdot (v_p / \sum_{p \in \mathcal{L}} v_p)$ (ensure non-negative).
7. Update seats: $s_x \leftarrow s_x - 1$, $s_z \leftarrow s_z + 1$.

8. Recompute S_L.

After the loop, the total votes removed is $\Delta_{\text{total}} = \sum \Delta$. The forcing variable is $\psi = +100 \cdot \Delta_{\text{total}}/V$ (positive sign indicates votes must be lost).

Case 2: Left is in minority ($S_L < M$)

The left bloc must gain votes from abstention until $S_L \geq M$. Repeat while $S_L < M$:

1. Identify the strongest left challenger: $z = \arg\max_{p \in \mathcal{L}} \frac{v_p}{s_p+1}$.
2. Identify the weakest seated right party: $x = \arg\min_{p \in \mathcal{R}: s_p > 0} \frac{v_p}{s_p}$.
3. Compute $v_z = \left(\frac{v_x}{s_x} - \frac{v_z}{s_z+1}\right) s_x$ (if $v_z \leq 0$, set $v_z = 1$ to break ties).
4. Vote share of party z within left bloc: $\alpha_z = v_z / \sum_{p \in \mathcal{L}} v_p$.
5. Votes to add to the whole left bloc: $\Delta = v_z / \alpha_z$.
6. Increase each left party's votes proportionally: $v_p \leftarrow v_p + \Delta \cdot (v_p / \sum_{p \in \mathcal{L}} v_p)$.
7. Update seats: $s_z \leftarrow s_z + 1$, $s_x \leftarrow s_x - 1$.
8. Recompute S_L.

Total votes added $= \Delta_{\text{total}}$. The forcing variable is $\psi = -100 \cdot \Delta_{\text{total}}/V$ (negative sign indicates votes must be gained).

If either bloc is empty or no seat change is possible, the forcing variable is set to missing. The resulting ψ is exactly the running variable used in all RD estimations.