Political Budget Cycles in Public Revenues: Evidence From Fines

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Abstract
This article seeks to ascertain whether local governments make improper use of their discretion and use pecuniary sanctions for electoral purposes. To this end, a sample of Spanish municipalities with a population of more than 1,000 citizens during the period 2010 to 2016 has been used. Our results show that revenues from fines are influenced by the presence of elections. In particular, we find that local governments in an election year reduce the percentage of fines, measured either over total non-financial revenues or in per capita terms. This reduction, compared to the pre-election year, suggests that politicians use their discretionary power to issue fewer fines in election years, as they are aware that penalties are not well-regarded by citizens. In addition, we find that the most indebted municipalities, those governed by right-wing parties and the most fragmented municipalities tend to collect more revenues from fines in the pre-election year. Finally, other factors influencing revenues from fines are the number of inhabitants of the municipality, the sources of external funding that the local government has, the ideology of the rulers and their political strength.

Keywords
electoral cycles, fines, public revenues, local governments

Introduction
The aim of this paper is to analyze empirically whether local governments manipulate their revenues, in particular fines, for electoral gains. To this end, it is important to bear in mind that the role of local governments in public administration is becoming increasingly important. In fact, these institutions are the closest to citizens, so they should have a better awareness of their preferences and aim to provide services that best suit their needs. However, local governments also have limited resources. Hence, they face a dilemma between the public services they provide and the resources available. The decentralization processes undertaken in recent decades in many countries have given local institutions greater powers in both the provision of services and in their financing (in this regard, consider the First Global Report of United Cities and Local Governments, 2008).

The Spanish Constitution sets out two basic principles in relation to local governments: financial self-sufficiency and financial autonomy. The first aims to ensure that all municipalities have the adequate resources to guarantee the implementation of their competences. Local governments depend on a number of resources to be self-sufficient (most of these revenues come from State transfers they have assured by law year after year and from their own taxes). The principle of financial autonomy implies that municipalities can decide on their own how to spend the resources available to them.

Furthermore, the Constitution guarantees administrative autonomy for municipalities. Within their administrative autonomy, local governments require a minimum of powers for legislating on matters that affect their jurisdiction. They need the authority to pass and issue ordinances generally binding on public affairs in their jurisdiction, subject to national and regional legislation. Their powers typically cover, inter alia, local economic development, planning and management of land, public safety and, in some cases, certain areas of public health, social protection, education, and environmental protection. At the same time, local governments also need tools to be able to sanction and punish non-compliance with regulations. One such tool is the administrative sanction, which usually involves a monetary fine or the revocation of licenses or rights related, for example, to an economic activity, the traffic of vehicles or the use of land. Thus, the revenues from these fines or sanctions constitute an additional municipal resource in addressing financial self-sufficiency.

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Democratic elected local governments with significant discretionary powers are basic institutions of political decentralization. In this sense, politicians and public officials have the discretion to use their best judgment to apply rules and policies. However, the benefits and practicality of discretion can bring with them tendencies to misuse and abuse discretionary power. The literature on Political Budget Cycles (PBC) establishes a relationship between the discretionary power of politicians and the electoral cycle, suggesting that opportunistic incumbents increase government spending and decrease taxes before elections in order to enhance their chances of re-election.

As mentioned above, this paper seeks to ascertain whether local governments make improper use of their discretion and use pecuniary sanctions for electoral purposes, that is, whether the local power has lowered these sanctions, or has been more permissive with non-compliance with the rules, in order to make the citizens of the municipality more satisfied with the management of their political representatives prior to elections. Specifically, the study analyzes the impact of electoral cycles on revenues from fines of Spanish municipalities of over 1,000 inhabitants during the period 2010 to 2016. Furthermore, we investigate whether these electoral cycles are influenced by the mayors’ ideology, political strength, and the level of indebtedness of the municipality (conditional political budget cycles).

Although there are several studies that study the impact of electoral cycles on budgetary variables, most of them focus on spending or indebtedness (Dubois, 2016; Philips, 2016). However, the analysis on revenues is scarce. This paper aims to contribute to the literature that relates electoral cycles and revenues at the local level. In particular, it focuses on fines, which can be quite a discretionary source of revenue. Our findings add new insights concerning the existence of electoral cycles (and conditional political budget cycles) in a type of revenue that has not previously been considered by the literature, as are the fines.

The relative importance of fines in the total non-financial revenues (total recognized budgetary revenue excluding that from financial debts) of local governments is in many cases reduced, but the act of fining less is socially welcome. In this way, the ruling government wants to influence the citizens’ voting decision by “relaxing” the imposition of sanctions. We could have assessed the impact of other types of revenue, such as taxes, but we wanted to focus on fines for the social impact they have, in the sense that on many occasions citizens are permissive with behaviors that should be sanctioned such as, for example, not fining when a car has been parked in a prohibited place.

Fines are revenues that the local administration, and more specifically politicians, can influence, for example, by agreeing with citizens after hearing their complaints about the fines they have received. After listening to them, the fines are removed. It is important to say that, although the percentage of total revenue can be low in some cases, the number of fines can be high. We will show in our research that when there are elections, the amount of these fines is reduced compared to other years, which, as far as we know, has only been studied by Bracco (2018) in Italian municipalities. In our opinion this is one of the strengths of our research.

Another thing that politicians can also do is give the order, or suggest, to their subordinates not to fine or to relax the imposition of fines. This is what appears to be deduced from our research when elections take place, which proves the electoral behavior of politicians.

The paper is structured as follows. Section 2 reviews the literature on PBC in local governments. Section 3 provides details of the research context. Section 4 describes the econometric procedure. Section 5 presents the empirical results. Finally, section 6 presents our conclusions and proposes further research.

**Political Budget Cycles in Local Governments**

The literature on Political Business Cycles explores the relationships between macroeconomic variables and the electoral calendar, and the research has developed in two phases. In the first, two types of models have emerged—opportunistic and partisan—differing basically in the underlying assumption that each of them makes about the intentions of governments. The former argues that politicians opportunistically manipulate economic policy instruments to gain electoral advantage (Nordhaus, 1975). In contrast, the partisan model asserts that politicians use the economy to implement their ideological interests (Hibbs, 1977). Consequently, both models suppose that voters are not rational and that rulers employ different policies to have an impact on them.

The second step was carried out in the 1980s. These models take into account that voters behave rationally, which means that in equilibrium they are not systematically manipulated, as they can anticipate the inflationary consequences of economic expansion. Nevertheless, information asymmetries exist between citizens and governments, allowing for the appearance of political cycles (Persson & Tabellini, 1990; Rogoff, 1990; Rogoff & Sibert, 1988).

The literature on electoral cycles has shifted the focus in recent decades by concentrating on budgetary variables, principally as a result of the absence of empirical evidence to support the presence of Political Business Cycles (PBCs; Drazen, 2008). The expression PBC has thus appeared, referring to the reduction of taxes or the spending, deficit or debt expansion immediately before elections by the ruling party in an intent to promote its re-election (Drazen, 2008).

A model of PBC in this second phase that has appeared most frequently in the literature was proposed by Rogoff and Sibert (1988). They expand on the original PBC in which politicians try to influence voters through pre-election fiscal expansion. Their model relies on information asymmetries.
between rulers and voters about the competence of the former. These authors presume that rulers have a level of competence that only they really know, and which is unknown to citizens. Since voters cannot directly identify the competence of the politician, they have to deduce it from the outcomes of fiscal policies. Therefore, the electorate prefers candidates who spend more and/or implement tax cuts before the election, as this is assumed to be a signal of their high level of competence. This information asymmetry consequently generates an incentive for politicians to spend more or cut taxes before elections, thus increasing their chances of staying in power. However, Peltzman (1992), Brender (2003), and Brender and Drazen (2008) show that voters are fiscally conservative and punish politicians in elections when they increase public expenditure (and thus also the budget deficit), regardless of whether this expansion is financed by taxes or borrowing. Similarly, some authors show that voters reward/punish politicians who increase some types of expenditure (de Haan & Klomp, 2013). Thus, Peltzman (1992) finds that social welfare expenditure especially is politically poisonous. In the same sense, Rogoff (1990) argues that, before elections, politicians increase expenditures that are more appreciated by voters and decrease the expenditure categories that are less visible. On the other hand, Drazen and Eslava (2010) elaborate a model in which politicians do not modify the global budget, but only alter its composition. Specifically, in order to prevent an increase in total public expenditures, rulers raise expenditures that voters prefer as a whole and reduce expenditures that are less attractive or less visible to them. Electoral manipulation is thus taking place, but is not necessarily manifested in the total spending.

There is also work in the literature in which the cause of the cycle is not only information asymmetry, but rather a moral hazard problem between incumbents and voters (Persson & Tabellini, 2000; Shi & Svensson, 2002). These models argue that voters are not aware of the competence of rulers when political decisions are made. But the rulers do not want to show their real level of competence either. What they desire, before the election, is an increase in the provision of public goods, independently of their level of competence, for convincing voters that this can be a sign of their competence. Consequently, these models predict that all rulers, regardless of their ideology, manipulate the budget in the pre-election period as a way to increase their re-election chances.

While most research has been conducted on the assumption that PBC do not differ across countries, current research addresses heterogeneity by studying under which circumstances a PBC is more likely to occur (de Haan & Klomp, 2013). Thus, the literature on conditional political budget cycles reports evidence suggesting that the manipulation of budget variables for electoral purposes depends on a variety of political, institutional and/or sociological factors (see, e.g., de Haan & Klomp, 2013; Franzese & Jusko, 2006 for a review of the literature on this topic).

Traditionally, most of the literature on PBC and conditional budget policy cycles has concentrated on central governments. Nevertheless, there are authors who argue that the sub-national arena is the most appropriate context in which to explore theories of PBC. Accordingly, Kneebone and McKenzie (2001) postulate a stronger PBC in subnational governments, since they cannot use monetary policy to influence voters, but only fiscal policy. Moreover, Baleiras and da Silva Costa (2004) argue that rulers decide their fiscal policy actions in view of the likelihood of obtaining a job out of the public sector, given that without re-election, the degree of uncertainty about future political nomination is higher at the local than at the upper levels of government.

Blais and Nadeau (1992), were the first to empirically confirm Rogoff and Sibert’s theory at the sub-national level, demonstrating the existence of PBC in an analysis of the 10 Canadian provincial governments between 1951 and 1984. They identified a small electoral cycle, as government spending increased in election years, leading to higher deficits. Since Blais and Nadeau (1992), several studies have analyzed the influence of PBC at the local level. Most of these have focused on budgetary variables such as spending (current and capital), indebtedness and deficit (examples of the more recent are Alesina & Paradisi, 2017; Castro & Martins, 2019; Klein, 2010).

Moreover, with regard to conditional political budget cycles at the local level, some conditioning factors have been studied empirically: political ideology (Benito et al., 2012; Kneebone & McKenzie, 2001; Veiga & Veiga, 2007), political strength (Benito et al., 2012; Geys, 2007; Schneider, 2010; Veiga & Veiga, 2007), the decision to run for re-election (Benito et al., 2012; Chortareas et al., 2016), the level of transparency (Vicente et al., 2013), the existence of fiscal rules (Benito et al., 2013) and how local government is financed (Baskaran et al., 2016; Köppl-Turyna et al., 2016), among others.

However, the influence of electoral cycles (or conditional electoral cycles) on public revenues have not been studied much (see, e.g., Alesina & Paradisi, 2017; Foremny & Riedel, 2014; or Hallerberg & Scartascini, 2017, among others). This paper aims to cover this research gap by analyzing the effect of electoral cycles on public revenue that is quite discretionary, such as that from fines. Furthermore, we also study whether the way in which those in power manipulate these revenues over the electoral cycle depends on their ideology, the majority they have in government and the level of indebtedness of the local government.

**Local Governments in Spain**

The Spanish public sector comprises three levels: the State, Regional Governments (known as Autonomous Communities, 17), and local governments (50 provinces and 8,131 municipalities as of 1.1.2021).

The government and the administration of the municipalities are the responsibility of the Town Council, made up of
the Mayor and the Councilors, whose number varies according to the population. The Mayor is elected by the Councilors, who in turn are elected by universal suffrage every 4 years. Candidates standing for election are on closed lists and are elected (councilors) on the basis of a proportional distribution of votes obtained by each of the lists (D’Hondt law). The Mayor and the Plenary exist in all municipalities. The Plenary consists of all councilors and is chaired by the Mayor.

The Local Government Board is the executive body and is made up of those elected by the Mayor and endorsed by the municipal Plenary.

The Spanish Constitution guarantees the autonomy of the municipalities and states that they must have sufficient resources to carry out their functions. The local government is the closest to the citizen, and has the autonomy to promote activities and provide the public services that best contribute to satisfying the needs and aspirations of the neighbors. The competencies of local entities may be their own competencies or competencies attributed by delegation from the State or the respective Autonomous Community. Own competencies are exercised autonomously and under their own responsibility, with due co-ordination in their programing and execution with the other public administrations. The powers attributed are exercised under the terms of the delegation made by the State or the respective Autonomous Community.

Local governments may only exercise powers other than their own and those attributed by delegation (known as “improper powers”) when this does not jeopardize the financial sustainability of the local treasury and does not involve the simultaneous execution of the same public service by another public administration. However, own and delegated competences will, in principle, always have sufficient funding for their implementation.

The following services are required in all municipalities: street lighting, cemetery, waste collection, street cleaning, drinking water supply, sewerage, access to population centers, and paving of public roads. As the population size of the municipality increases, additional services must be provided.

As we have said before, the principle of financial self-sufficiency ensures that municipalities have the necessary resources to exercise their powers. Specifically, article two of the Consolidated Text of the Law regulating Local Tax Authorities establishes that local entities may have the following resources:

(a) Revenues from self-owned assets.
(b) Own taxes classified in fees, special contributions and taxes and the surcharges on the autonomous communities or other local entities’ taxes.
(c) Participation in the taxes of the State and of the autonomous communities.
(d) Subsidies; for example, those received for a special purpose.

(e) Public fares.
(f) Credit transactions.
(g) Fines and other sanctions.
(h) Other benefits under public law.

Local governments set tax rates (within legal limits) and may also establish other types of coercive revenues, such as fines and other penalties; they can also choose the way the revenues are spent by approving their budget, subject to certain legal limitations. Therefore, Spanish municipalities have sufficient powers and financial autonomy to create PBC on revenues from fines, so they constitute an ideal institutional framework for investigating this issue. As mentioned above, fines can be a rather discretionary source of revenue. They can be related to non-compliance with traffic regulations, urban planning issues, non-compliance with municipal tax requirements, and/or non-compliance with municipal ordinances (graffiti in the street, failure to pick up pet excrement, drinking alcohol in groups in the street, etc.), among others. The money collected from the fines remains entirely with the municipality in question.

Econometric Procedure

Sample

The sample consists of a panel of Spanish municipalities with a population of more than 1,000 citizens, as some variables considered in this research were not available for municipalities with less than 1,000 inhabitants. The sample period ranges from 2010 to 2016 (2010 was the first year with available data). During that 7-year period, two municipal elections were held (2011 and 2015). Therefore, the sample contains several variations in the political composition of local governments and therefore provides information on the possible impact of PBC, partisan politics, and political strength. The investigation is limited to municipalities with all 7 years of observations, that is, 1,353 municipalities.

Municipal datasets generally have two significant advantages over cross-national data: homogeneity and completeness (Ashworth et al., 2005; Pettersson-Lidbom, 2001). First, it is necessary to control for heterogeneity (different legal structures and socio-economic framework in cross-national samples; Tellier, 2006). This is achieved at the municipal level within a country, as the institutional background is homogeneous compared to samples from different countries. Second, sub-national datasets are considerably larger than cross-country samples.

Variables

The purpose of this paper is to investigate the existence of PBC in fine revenues. Consequently, the dependent variable of this research is the ratio of revenues from fines on total non-financial revenues (fines). This variable has been
measured as a proportion of non-financial revenues because we believe that it is the best way to relativize and compare this variable between local governments, although it is true that there are other possibilities (per capita, logarithmic terms, etc.). The way in which we have calculated the variable allows for determining the relative weight that fines have in non-financial revenues as a whole, which shows the importance that they can have in the financing of expenditures. Moreover, we can estimate whether or not this relative weight is reduced in the run-up to elections, which means that politicians may or may not want to relieve citizens of this burden in fiscal terms in order to gain political advantage in the elections. Finally, it should be noted that the revenues are that resulting from the budgetary settlement and not the budgeted revenues.

For evidence of the effects of PBC on municipal revenues from fines, a model is adopted that identifies four phases in the electoral cycle (Alesina, 1988; Blais & Nadeau, 1992; Golden & Poterba, 1980): the pre-election year, the election year, the post-election year, and the middle year of the mandate (base year). Therefore, we define three dummy variables: pre-election, which is set to 1 if the year precedes the elections and 0 otherwise; election year, which is 1 in municipal election years and 0 in non-election years; and post-election, which is 1 if the year is immediately after the elections and 0 otherwise. Following the procedure used in Veiga and Veiga (2007) and Foucault et al. (2008), these variables will be employed to test whether the level of revenues from fines is affected by the electoral calendar.

In order to isolate the effect of PBC on revenues from fines, some control variables from theoretical and empirical arguments are included in our model. First, it has been taken into account that budgetary variables exhibit inertia in general, that is, the current level of revenues from fines is strongly influenced by previous levels (Dezhbakhsh et al., 2003). This is why the lagged dependent variable is included in our model as an independent variable ($fines_{t-1}$). The rest of the control variables have been classified into three categories: socio-economic factors, factors related to the funding sources of the municipality, and political factors. The first one comprises the socio-economic characteristics of the municipality, such as the number of inhabitants of the municipality in natural logarithm ($lnpopul$), the per capita income level of the citizens ($income$), and the touristic character of the municipality ($tourism$).

The literature suggests that population ($lnpopul$) is a control variable to explain the financial situation of municipalities (Ashworth et al., 2005; Groves et al., 1981; Pettersson-Lidbom, 2001). More populated local governments receive a higher demand for public spending from their citizens. Therefore, they need more revenues (such as revenues from fines) to fund them. In this line, some previous studies have empirically shown that municipalities with larger populations collect more revenues (Bastida et al., 2009; Benito et al., 2013; Goel & Nelson, 2011; Kenny & Winer, 2006; Larmour & Wolanin, 2013; Liu & Mikesell, 2014, 2019; Mauro, 1995; Vicente et al., 2013).

The per capita income level ($income$) of the municipality is another “classic variable” that Fabricant (1952) refers to in order to analyze the municipal financial situation. In our research, and as it is not available, this variable can be considered an estimate of the municipal gross domestic product. This variable is controlled by Pettersson-Lidbom (2001) for two reasons. First, because it relates to the municipal fiscal capacity. Second, this variable also allows the researcher to control for variations in the local economic cycle. Consequently, higher income levels of citizens result in higher municipal revenue collection (Benito & Bastida, 2008; Easterly & Rebelo, 1993). In the same way, local governments with high income from tourism have high revenues (Holzner, 2011). In this way, we control for the touristic character of the municipality through an index that takes into account the relative weight of touristic activity in the municipal economy as a whole.

The second group of explanatory variables consists of the economic resources of local government: the level of debt per capita ($debt$), the ratio of revenues from urban activity on total non-financial revenues ($urban$), the ratio of recurrent taxes on total non-financial revenues ($selfsuffic$), and the ratio of regional and central transfers received by the local government on total non-financial revenues ($transfers$; to understand these ratios properly, see, e.g., Benito & Martínez, 2002).

Concretely, urban revenues are the total of the revenues directly related to urban planning decisions: (1) money paid by landowners in exchange for keeping the part they should donate to the municipality, (2) the tax on the capital gain generated on the sale of land, (3) the tax levied on construction, (4) fees to land and/or building developers for services provided by the municipality, (5) fees for building licenses, and (6) funds received from the granting of rights of use of municipally owned real estate.

Recurrent revenues are those that normally repeat year after year; for example, revenues from consolidated tributes such as real estate tax, vehicle tax, or garbage collection fees.

These indicators related to the main economic resources (other than fines) of the local government are introduced because the purpose is to analyze whether municipalities with greater resources from other sources (debt, urban revenues, recurrent taxes, and transfers, among others) fine less (their citizens, companies, etc.), since they need fewer additional resources. In this sense, for example, some authors have studied the effect of transfers received by the local government on other revenues, finding a negative relation in the way that an increase in the transfers received may allow municipal managers to reduce the tax burden without reducing the total level of revenues (Canavire-Bacarreza & Espinoza, 2015; Valenzuela-Reynaga & Hinojosa-Cruz, 2017). Therefore, if a municipality receives fewer transfers (or revenues from other sources) it may decide to fine more to try to maintain (or increase) its total revenues.
The third category consists of political factors: political ideology (ideology) and political fragmentation (majority). The first is included because it is often thought that left-wing governments spend more and collect more taxes than right-wing governments. In the literature, this idea is referred to as “Political Parties Matters” (PPM; Cusack, 1997), and postulates that left-wing governments put more effort into tax administration and, therefore, collect a higher level of tax revenue than those with conservative ideologies (Esteller-Moré, 2005). However, although most of the literature supports PPM, the empirical results are not entirely conclusive. For example, Abizadeh and Gray (1993), Bosch and Suarez-Pandielio (1995), Seitz (2000), Galli and Rossi (2002), Benito and Bastida (2004), Hagen and Vabo (2005), Benito and Bastida (2008), Bastida et al. (2009), Lago-Peñas and Lago-Peñas (2009), and Benito et al. (2010) find no empirical support for PPM at the municipal level. All these works are linked to the so-called “convergence” school of thought: modern societies in different countries have become similar and have the same type of problems. Politicians, in this respect, and irrespective of their ideology, tend to apply the same type of solutions. Moreover, rulers have to balance between “power hunger” and ideology. Thus, a greater “hunger for power” means that incumbents renounce their ideology for the benefit of voter preference (Esteller-Moré, 2005).

Alt and Lowry (1994) and Bastida et al. (2009) state that there are two different approaches in the theoretical debate about the impact of political fragmentation on the fiscal situation of public entities. On one side, Roubini and Sachs (1989a, 1989b) argue that coordination problems in divided governments may entail significant costs. Thus, if fragmented governments do not raise revenues, they may incur deficits and debt. This hypothesis is known in the literature as the Roubini and Sachs (1989a, 1989b) weak government hypothesis (RSH). Alesina and Rosenthal (1994), in contrast, consider that divided governments exercise a moderating pressure on fiscal policy. From an empirical point of view, Allers et al. (2001), Hagen and Vabo (2005), and Bastida et al. (2009) find that strong political leadership improves fiscal performance. However, Benito and Bastida (2008) and Benito et al. (2010) report that strong governments increase the tax burden to finance their political projects. Finally, Vicente et al. (2013) do not find a significant relationship between political fragmentation and the level of revenues collected by the local governments.

The variables, basic statistics and expected signs are described in Table 1.

**Specification of the model**

Following the theoretical framework previously described, the existence of PBC in the revenues from fines is analyzed through the estimation of the following panel data model:

\[
\text{fines}_i = \alpha + \gamma_1 \text{preelection}_i + \gamma_2 \text{electionyear}_i \\
+ \gamma_3 \text{postelection}_i + \beta \text{fines}_{i,t-1} \\
+ \lambda Z_{it} + \text{year}_i + c_i + \epsilon_{it}
\]

(1)

where subindex \(i\) is the municipality, \(t\) is the year, and \(\text{fines}_i\) is the dependent variable. \(\alpha\) is the constant of the equation, \(\text{preelection}_i\) \(\text{electionyear}_i\) and \(\text{postelection}_i\) are the electoral cycle dummy variables, \(\text{fines}_{i,t-1}\) is the lagged value of the dependent variable, \(Z_{it}\) is the vector of control variables \((\ln\text{popul}, \ln\text{income}, \ln\text{tourism}, \ln\text{debt}, \ln\text{urban}, \ln\text{selfsuffic}, \ln\text{transfers}, \ln\text{ideology}, \ln\text{majority})\). Moreover, the variable \(\text{year}_i\) is included to control for the time-trend. \(c_i\) captures unobservable characteristics of local governments with a significant impact on local government revenues from fines. They differ across municipalities but it is presumed that they are constant for each municipality over time. \(\epsilon_{it}\) accounts for random disturbances.

In addition, to analyze the impact of debt level (debt), political ideology (ideology), and political strength (majority) on the magnitude of the electoral cycle, the following regression models are estimated:

\[
\text{fines}_i = \alpha + \gamma_1 \text{preelection}_i + \gamma_2 \text{electionyear}_i \\
+ \gamma_3 \text{postelection}_i + \beta \text{fines}_{i,t-1} \\
+ \mu_1 \text{preelection}_i \ast \text{debt}_i \\
+ \mu_2 \text{electionyear}_i \ast \text{debt}_i \\
+ \mu_3 \text{postelection}_i \ast \text{debt}_i \\
+ \lambda Z_{it} + \text{year}_i + c_i + \epsilon_{it}
\]

(2)

\[
\text{fines}_i = \alpha + \gamma_1 \text{preelection}_i + \gamma_2 \text{electionyear}_i \\
+ \gamma_3 \text{postelection}_i + \beta \text{fines}_{i,t-1} \\
+ \mu_1 \text{preelection}_i \ast \text{ideology}_i \\
+ \mu_2 \text{electionyear}_i \ast \text{ideology}_i \\
+ \mu_3 \text{postelection}_i \ast \text{ideology}_i \\
+ \lambda Z_{it} + \text{year}_i + c_i + \epsilon_{it}
\]

(3)

\[
\text{fines}_i = \alpha + \gamma_1 \text{preelection}_i + \gamma_2 \text{electionyear}_i \\
+ \gamma_3 \text{postelection}_i + \beta \text{fines}_{i,t-1} \\
+ \mu_1 \text{preelection}_i \ast \text{majority}_i \\
+ \mu_2 \text{electionyear}_i \ast \text{majority}_i \\
+ \mu_3 \text{postelection}_i \ast \text{majority}_i \\
+ \lambda Z_{it} + \text{year}_i + c_i + \epsilon_{it}
\]

(4)

In these specification models the interaction between the PBC variables (pre-election, election year, and post-election) and the variables debt, ideology, and majority are added as regressors. The specification of model 2 tests whether the level of local government debt affects the size of the cycle.
Model 3 provides a test of the effect of ideology on opportunistic behavior. Finally, the estimation results of model 4 indicate whether the size of the cycle depends on the political strength of the governing party. Thus, we follow the procedure suggested by Brambor et al. (2006) for proposing and interpreting interaction models.

We use panel data models because they have important advantages. First, following Baltagi (2001), they provide more information, more variability, less collinearity between variables, more degrees of freedom, and more efficiency. Second, individual heterogeneity is controlled by the panel data model, as it is based on the assumption that local governments, regions or countries are heterogeneous.

In the estimation of models that is carried out with panel data, it is necessary to establish whether there is correlation between the unobservable heterogeneity ci of each municipality and the explanatory variables of the model. Thus, in the case of correlation they can be estimated considering fixed effects, and random effects in the opposite case. However, both estimators are biased when endogenous variables are introduced in the model (in our research, the lagged dependent variable is clearly endogenous).

Accordingly, the model is estimated with the Generalized Method of Moments (GMM) to control for potential endogeneity problems, since it uses instrumental variables to control for endogeneity. In particular, we follow the estimation strategy proposed by Arellano and Bond (1991), which uses all right-side variables lagging twice or more as instruments. This GMM estimation is consistent and is also more efficient than other equally consistent estimators, such as the one proposed by Anderson and Hsiao (1982). This methodology accepts that there is no second-order serial correlation in the errors in first differences. Therefore, to check the consistency of the estimates, the Arellano and Bond (1991)
test is used to verify the absence of second-order serial correlation ($m_2$). We also present the Hansen test for over-identification restrictions, which checks for the absence of correlation between the instruments and the error term (see Tables 2 and 3).

Finally, it should be noted that in the presence of multicollinearity the estimators are inaccurately estimated. Consequently, the Variance Inflation Factor (VIF) is calculated, which measures the degree of collinearity among the independent variables in a regression. VIF values higher than 5 may indicate multicollinearity. In the regression analysis, none of the VIF values exceeded 3.33, showing that no evidence of multicollinearity is present (see Table 2).

Results

Table 2 shows the estimation of the system GMM of the model specification 1, as well as the tests explained before.

Regarding the main aim of this research, the coefficients of the PBC variables provide evidence that revenues from fines are affected by the presence of elections. The values of the coefficients related to the electoral cycle are presented in Figure 1. The significant negative coefficient for the electoral year suggests that in this year, the share of fine revenues in total non-financial revenues is 0.14% lower than in the base year. Subsequently, the results show an adjustment of fine revenues in the post-election year.

The increase in revenues from fines in the pre-election year, always in comparison with the base year, could be a strategy of local governments to have more funds to increase spending on those items more visible to citizens, which could also influence the election results. For its part, the reduction of revenues from fines in the election years, in comparison with the base year, may indicate that politicians use their discretionary power to fine less in these years since they are aware that sanctions are not well-regarded by citizens and it may affect the election results. Therefore, it is observed that the time trajectory of municipal revenues from fines indicates the existence of a cycle, with politicians using their discretionary power for their own benefit, for electoral purposes.

In the same way, Bracco (2018) proves that before elections Italian mayors issue fewer traffic fines and collect a smaller proportion of the fines issued, concluding that this behavior can be used strategically to influence election results. Foremny and Riedel (2014) also find that the business tax rate growth in German municipalities is significantly reduced in election years, while it jumps up in the post-election years. Similarly, Pettersson-Lidbom (2003), using data from Swedish local governments, concludes that in election years, spending is increased and taxes decreased.

As for control variables, first, there is a large inertia in revenues from fines (variable $fines_{t-1}$ is significant). This is common for budgetary variables, since many governments fix budgets for the following year by modifying current budgets (Dezhbakhsh et al., 2003). In this sense, the results show that the current percentage of fines, both in terms of total non-financial revenues and in per capita terms (see Appendix Table A1), is significantly affected by the percentages of previous years.

With regard to socio-economic control variables, only one significant effect of variable $lnpopul$ is found. In particular, more populated municipalities collect more revenues from fines with respect to total non-financial revenues. This result could be indicative that larger local governments receive greater demand for public expenditure from their citizens and therefore need more revenues (such as revenues from fines) to finance them. This is consistent with Mauro (1995), Kenny and Winer (2006), Bastida et al. (2009), Goel and Nelson (2011), Benito et al. (2013), Larmour and Wolanin (2013), Vicente et al. (2013), and Liu and Mikesell (2014, 2019).

Furthermore, municipalities with greater level debt ($debt$) and resources from urban revenues ($urban$), recurrent taxes ($self-sufficient$), and transfers ($transfers$) collect less revenue from fines. This shows that local governments that obtain financing through other means (borrowed or own resources) are less prone to fine, since they need fewer additional resources to maintain (or increase) their level of total revenues, so ensuring sustainability in the services they provide. On the other hand, local governments that receive less "recurrent" resources could take advantage of their discretionary power and use fines (although they are viewed less favorably by the citizens) to increase their revenues.
Finally, political variables (ideology and majority) appear to slightly affect the amount of revenues from fines collected by local governments. In terms of political ideology, results show that progressive parties collect more revenues from fines than their conservative counterparts. This can be explained by the fact that these governments have higher levels of expenditure and need more resources to finance them (one of these resources may be the revenues from fines). Regarding the majority variable, we find significance in the fact that a majority, or less fragmented, government raises more revenue from fines than a more divided government. This is consistent with Benito and Bastida (2008) and Benito et al. (2010).

To check the robustness of these results we re-estimated model (1) taking fines divided by population (finespc) as the dependent variable to give an idea about whether elections affect the absolute level of fines. These results are shown in Appendix Table A1. As we can see, the results obtained are very similar to those found using fines divided by non-financial revenues (fines) as the dependent variable. In addition, this analysis also confirms our previous interpretations about the control variables.

Once we have found that PBC focus on revenues from fines, we analyze the effect of the level of local government debt, political ideology, and political strength on PBC. Table 3 shows the interaction regressions.

As can be seen, although in the pre-election year there is a tendency to increase revenues from fines compared to the election year, when a reduction in fines is observed, this effect is influenced by the level of indebtedness of the municipality, as well as the ideology and strength of the government. Specifically, we find that more indebted, right-wing and fragmented local governments tend to collect more revenues from fines in the pre-election year. Regarding the control variables, our results are similar to those found in the main model (Table 2); although some variables lose their significance, they still maintain the same sign as in the main model.

### Conclusions

The decentralization processes undertaken in recent decades in many countries have given local institutions greater powers both in the provision of services and in their financing.
In this context, local governments face a dilemma between what public services they provide and the limited resources available to them. In this process, politicians have the discretion to use their judgment to apply rules and policies. According to the literature on PBC, politicians may misuse this discretionary power by creating electoral cycles. In this sense, this paper attempts to analyze whether local governments, misusing their discretion, utilize pecuniary sanctions for electoral purposes. Specifically, the impact of election cycles on fine income has been studied. Furthermore, we investigate if these electoral cycles are influenced by some conditioning factors (mayors’ ideology, political strength and the level of indebtedness of the municipality). For this purpose, a sample of Spanish municipalities with a population of more than 1,000 citizens during the period 2010 to 2016 was used.

The results show that there is a relaxation in the imposition of fines in the years in which there are elections compared to the fines that are imposed particularly in the year prior to an election. Therefore, this reveals that politicians misuse their discretionary power for their own benefit for electoral purposes. On the one hand, politicians may increase revenues from fines in the pre-election year to have more funds to increase spending on those items more visible to citizens. In addition, we find that those municipalities that are more indebted and those governed by right-wing parties and coalitions are more likely to collect more fines in pre-election years. Later, politicians reduce revenues from fines in election years since they are aware that sanctions are not well-regarded by citizens and may affect the election results. On the other hand, this behavior of politicians could also be similar to what in the private sector is known as “Big Bath.” In this way, politicians would be indicating that they have reduced the fines in the election year, showing what good managers they are.

We also find that more populated municipalities collect more revenues from fines, as they receive a higher demand for public expenditure from their citizens and need more revenues to finance them. Moreover, local governments that obtain higher financing through other means (other than fines) are less prone to fine, since they need fewer additional resources to maintain (or increase) their levels of total revenues, so ensuring sustainability in the services they provide. Finally, our results also show that municipalities governed by left-wing parties and those in majority governments collect more revenues from fines.

This research has important practical implications. We believe that budget transparency is fundamental for controlling this type of revenue, which depends greatly on the part of politicians. Increasing transparency and control in this area would allow citizens to be aware that their vote is being manipulated by charging them more or fewer fines depending on the phase of the electoral cycle. Moreover, actions should be taken to control the interference between politicians and officials, because when there are elections, the latter can receive orders from the former to be more permissive with citizens’ noncompliance with the rules.

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**Figure 1.** PBC on municipal revenues from fines.

*Note.* The y-axis represents the electoral cycle variables’ coefficients obtained after estimating model (1) (see Table 2).
However, although we are not sure that this behavior is reproducible in other countries, we cannot exclude it either. In this sense, it would be useful to replicate our research in other countries, as has been done with other types of budgetary variables. Moreover, other future research may analyze the existence of electoral cycles by using other discretionary revenues. Furthermore, it would be interesting to study differences in the electoral cycle between discretionary and non-discretionary revenues. Another very important aspect that we will need to study is whether politicians have succeeded in their strategy and have been re-elected. Finally, we consider that deviations between budgeted revenues from fines and the revenues from fines finally collected should also be investigated.

Appendix

| Table A1. Estimation of Regression and Tests. |
|---------------------------------------------|
| Model specification (1)                     |
| Dependent variable | financesp |
| intercept | 194.7015 (0.784) |
| preelec | 1.7831** (2.08) |
| electionyear | −2.0936*** (−2.79) |
| postelection | −1.1126** (−2.08) |
| finespc −1 | 0.1345*** (3.67) |
| lnpopul | 17.1622** (2.09) |
| income | 0.0028** (2.13) |
| tourism | −0.0417 (−1.59) |
| debt | −0.0207* (−1.95) |
| urban | −232.5831**** (−3.04) |
| selfsuffic | −163.48**** (−3.22) |
| transfers | −198.2871*** (−3.54) |
| ideology | −4.8509** (−1.98) |
| majority | 5.6120** (2.13) |
| Time-trend included | Yes |
| m1 (p-value) | −0.3000 (.767) |
| Hansen test (p-value) | 14.0900 (8.26) |

Note. All the estimations have been carried out using the two-step system GMM estimator. Z statistic in brackets. m1 is test statistic for second order autocorrelations in residuals, distributed as standard normal N(0,1) under the null hypothesis of no serial correlation. Hansen test is a test of over identifying restrictions, distributed as chi-square under the null of instrument validity. Significance: ***1%, **5%, *10%.

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