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Are Presidential Elections Relevant for Local Public Spending? Evidence from Mexico

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Abstract

Intergovernmental transfers in Mexico represent 84% of income of state and local governments and finance fundamental local public programs in that country. In this paper, we investigate the influence of federal elections and political institutions, such as party affiliation and the control of the national executive over Congress, on the federal budget allocated to state and local governments in Mexico. Our findings reveal that both, election years and the second year of a new national administration, significantly increase federal transfers to subnational governments. Furthermore, presidential elections have a notable impact on state and local budgets, particularly when the ruling parties align with the left or center-left of the political spectrum, resulting in increased resource allocation to subnational governments. Conversely, when a single party controls the national Congress, federal transfers to state and local governments decrease, possibly due to reduced political incentives to support legislators from various regions.

Keywords: federal elections, state and local government, fiscal federalism, national government expenditures, Intergovernmental transfers

JEL Classification: D72; H72; H77; H5; H7.

1. Introduction

There is a large literature showing that political institutions, electoral competition, and parties shape the allocation of local public goods in modern economies (see Hankla et al., 2019). Electoral competition creates incentives to parties and politicians to recognize the tradeoff between votes and the allocation of budgets that finance public goods such as education, health care, services in general, and even social spending that is translated into monetary transfers to voters. Most of the literature on local public goods has focused on how local elections help to explain local public spending, while political economy theories of fiscal federalism consider how political institutions of the federal government are relevant for local public goods (Lockwood, 2002).

In a federation, local public goods might be financed by a mix of resources administered by state and local governments and by the federal government. In the case of Mexico, it is well known that there is high degree of fiscal centralization. Ponce-Rodriguez and Ponce-Rodriguez (2021) report that intergovernmental transfers to subnational governments represent 84% of total public revenue of state and local governments, and data from the central bank of Mexico shows that, for the period between 1993 to 2024, the average share of transfers to state and local governments in relation of total government spending of the federal government is 20%, and it represents about 4% of GDP in Mexico.

Hence, national elections can be relevant for local public spending because they shape the central government's fiscal policies that might influence local government finances (such as the size of intergovernmental transfers and other forms of tax revenue sharing). In addition, the political alignment, macroeconomic policies, and national development programs resulting from national elections might also impact how local governments allocate and manage their resources.

Given the significant degree of fiscal centralization in Mexico, the objective of this paper is to analyze how presidential elections might affect the allocation of resources for subnational governments in Mexico. To the best of our knowledge, there has been little research on studying more closely the effect of presidential elections on local public spending, and this paper seeks to contribute to the literature by developing a time series analysis with available data from the last 31 years in Mexico of the budget allocated by its central government to state and local governments. In addition, we evaluate whether federal political institutions, such as parties and the control of the executive power over the legislative power, have an influence in the budget allocated by the federal government to state and local governments.

Our analysis finds compelling evidence that presidential elections and federal political institutions matter for the determination of the budget of subnational governments in Mexico. Our results show that in election years, subnational governments receive an increase of 13.24% in the annual rate of growth of intergovernmental transfers, an increase of 18.74% in a three-year rate of growth of these transfers, but these gains dissipate when we calculate the six-year rate of growth in federal transfers. This evidence suggests a political cycle in which subnational governments receive transfers above the trend around election years and a reversion to the mean occurs in the following 3 to 5 years following the election.

We also find that the results of presidential election matters for the resources allocated from the central government to subnational governments. If parties with a left or left-center political ideology win the presidential elections then, the one-year rate of growth of the budget allocated by the federal government to state and local government increases by 9% if the party known as PRI wins the election (a left-center party), and 20% if the most left oriented party, known as MORENA, wins. The identity of the party winning the presidential election also has a significant effect on the three-year rate of growth of federal transfers: if PRI wins the presidential election, then the three-year rate of growth of subnational transfers increases by 13.76%, and if MORENA wins it increases by 49.83%. In the case of the six-year growth of federal transfers, a win by the PRI increases the six-year rate of growth of subnational transfers by 35.6%, and in the case MORENA wins, it increases by 67.39%.

Our analysis also shows that if one party controls the executive power and has a simple majority in congress, then fiscal transfers to subnational governments fall significantly: the annual rate of growth of transfers to state and local governments falls by 9.62%, the three-year rate of growth falls by 12.51%, and the six-year rate of growth falls by almost 43%. This empirical evidence suggests that legislative bargaining with the opposition tends to increase substantially the budgets for subnational governments.

The rest of the paper is structured as follows: Section 2 shows the literature review of the role of elections, parties, and electoral competition for local public goods. Section 3 contains the theory that guides our empirical study. Section 4 incorporates the empirical analysis, data, and econometric model. Section 5 shows the econometric results. Section 6 concludes.

2. Literature Review

There is a large literature on the role of elections in determining local public outcomes. This theory has emphasized that the sociodemographic characteristics, income, and tax price of voters determine the demand of voters for government spending and taxation in localities. On the supply side, the institutions of democracy, such as the electoral system, electoral competition, and the personal incentives of politicians determine how parties and politicians aggregate the heterogenous preferences of voters over public spending into a coherent policy (see Mueller, 2003, Hankla et al., 2019, Kochi & Ponce, 2011, Lockwood, 2015).

A well-known theory is the median voter model in which parties-candidates, observe the distribution of ideal policies of voters, and converge in selecting the policy of the median voter to win a local election. In this case, income, and tax price of the median voter, and the economic constrains of the government determine the size and composition of local government spending (see Besley & Coate, 2003, Milanovic, 2000, Scervini, 2012, among many others).

However, several authors have emphasized the shortcomings of this theory (for a review see Mueller, 2003) and have suggested the probabilistic voting theory as an alternative to analyze the multidimensional aspects of local spending and taxation. Hettich and Winer (1999) propose a model that can explain the tax structure and the composition of government spending in modern economies using the probabilistic voting theory which suggests that politicians-parties have incentives to consider the preferences over public spending of influential coalitions of voters in the electorate. Other applications of the probabilistic voting theory to the analysis of local public spending include Hankla et al. (2019) and Ponce-Rodríguez et al. (2020).

Another branch from the set of electoral competition models suggests that elections might lead to dynamically inconsistent platforms if parties have preferences over public spending (see Wittman, 1983; Roemer, 2009). Before the election, policy platforms announced by parties might be tailored to the preferences of the median voter. However, once a party wins the election, parties select policies that benefit a minoritarian coalition of voters in the electorate. These voters might be the registered voters of the party, or voters who might contribute to finance the parties' campaigns, or activists inside of parties. The models of Wittman (1983) and Roemer (2009) suggest that parties have different preferences for public spending, and they will select divergent policy platforms, implying that the size of public can be higher or lower relative the ideal policy of the median voter.

The literature has also recognized that not only local elections are important to explain spending and taxation in localities but also federal elections might be relevant because of the interaction between the central government and local governments (Lockwood, 2002; Agranoff, 2014), the role of intergovernmental transfers (Bergvall et al., 2006, Martinez-Vazquez & Searle, 2007), the extent of tax revenue sharing (Martinez-Vazquez 2008), and the degree of fiscal and political centralization (see Hankla et al., 2019, Enikolopov & Zhuravskaya, 2007, and Blanchard & Shleifer, 2001).

In addition, national elections can be relevant to determining local public spending because of political alignment, macroeconomic policies, and national development programs resulting creating influence in how local governments allocate and manage their resources. However, research on the effect of elections of the federal government on the finance of local public goods and services is inadequate, and this paper seeks to contribute to the literature by developing an empirical analysis of the influence of presidential elections and federal political institutions on the size of the budget of state and local governments in Mexico.

3. Economic and Political Determinants of the Allocation of Budgets to State and Local Governments

In Mexico, there is a tax revenue sharing accord known as *the law of fiscal coordination* in which the federal and subnational governments establish rules between the federation, states, and municipalities to collect tax revenue and distribute it among them. Some of the main taxes in the law of fiscal coordination include the special form of sales tax on production and services, also known as IEPS, the income tax from hydrocarbon exploration and extraction, wages, and the provision of personal services, as well as other taxes (see Ponce Rodriguez & Ponce Rodriguez, 2022).

In terms of the distribution of tax revenue, the law of fiscal coordination mandates the federal government to establish a set of intergovernmental transfers to be allocated to subnational governments, some of these resources are allocated by formula but other resources called "contributions" are discretionary transfers to finance spending on education health, basic infrastructure, public security, and social assistance programs. In Mexico, from 1993 to 2024, the resources transferred from the central government to state and local governments represent approximately 20% of total spending of the federal government and about 4% of GDP in Mexico.

To analyze the determinants of intergovernmental transfers to subnational governments in Mexico, we follow the theory and consider that aggregate income is an important determinant of the resources allocated to state and local governments. An increase in income in the economy has several effects on spending of state and local governments, first, it increases the demand of residents of all localities of local public goods offered by subnational governments but also the demand of goods and services provided by the central government. Second, an increase in income leads to an increase in tax revenue coming from the federal income tax, consumption taxes, as well as other taxes indexed to the economic activity in the economy. A central government might take this into account and decide if it distributes more resources to their own programs or to subnational governments.

Dynamic models suggest that the evolution of public spending over time might depend negatively on the interest rate, because higher interest rates reduce both the present discounted value of tax revenues and the capability of the government to supply goods and services (see Romer, 2012; Stokey & Lucas 1989). In addition, higher interest rates might increase the financial costs of the government's public debt, and it might crowd out the supply of goods, services, and spending on redistribution, which in turn, would lead to a reduction of transfers to state and local governments.

The literature has also recognized that increases in effective tax rates reduce the household's demand for public goods and services from governments (see Atkinson & Stiglitz 2015; Tresch, 2022; among many others). The theory also suggests that increases in effective tax rates might lead to increases or reductions in the government's tax revenue depending on the elasticity of the tax base leading to the well-known Laffer curve: that is, when the effective tax rate is low (high), it is likely that increases in the effective tax rate increase (reduce) tax revenue.

In this paper we consider that inflation, in other words, increases in prices of private goods and services over time, might lead to increases in tax prices from proportional consumption taxes. In this case, inflation should reduce the household's demand for public spending of subnational governments and the demand of public spending from the central government. However, inflation might also affect the effective tax rates of individuals in the personal income tax by increasing the nominal income of those individuals leading to a positive income effect in the collection of the personal income tax of the federal government in Mexico. While inflation might reduce the demand for local public spending, it might also increase the resources of the central government and the allocation of resources from the federal government to state and local governments.

As the international evidence shows, electoral competition plays a key role in aggregating the voters' demand for public spending and creating political business cycles. Politicians have incentives to manipulate the economy, such as designing new programs to redistribute in favor of the poor, reducing taxes, and providing more public goods. Politicians adopt these types of policies in election years to increase their chances of winning the upcoming elections (see Dubois, 2016 for a review of the political business cycles literature).

In addition, political institutions such as parties might have preferences over fiscal outcomes: parties might represent groups of individuals with distinct characteristics in the electorate and might select policies to benefit activist groups inside parties. Parties that represent the interests of low-income households would spend more on redistribution (transfer programs) and if they represent high-income households they would spend more on capital spending since it is likely that high income households would benefit more from expenditures on roads, airports, public safety, etc. Hence the identity of the party winning the election might lead to different spending choices while the party holds office (see Wittman, 1983; Roemer, 2009).

4. Empirical Analysis, Data, and Econometric Model

In this section we are interested in evaluating whether federal (presidential) elections and political institutions are important to explain the budget allocated by the federal government to state and local governments. To capture political and economic determinants of intergovernmental transfers to subnational governments in Mexico, we propose the following linear regression model.

$$y_t = \alpha + \mathbf{B}\mathbf{X_t} + \varepsilon_t \tag{1}$$

Where y_t is the rate of growth of the budget allocated to state and local governments, α is the intercept, $\mathbf{X}_t$ is the set of explanatory variables, and $\mathbf{B}$ is the set of marginal effects of explanatory variables on y_t. In our model, we use monthly time series data from 1993 to 2024 and we consider an index of global economic activity in Mexico known as *IGAE* as a proxy variable of aggregate income, a tax price measured as the per capita taxes paid in Mexico, we call it *Per capita Tax Rate*, the interest rate, the inflation rate, and the price of oil for the Brent mix, that we define as *Poil (Brent)*.

Oil rents of the federal government in Mexico are not only an important source of public income from extraction, production, and sales of the Mexican blend of oil but also by the taxation of rents from oil production, and the special tax on production and services (known as IEPS). In Mexico, in the period between 1993 and 2024, the average share of income from the production of oil over total revenue of the federal government is 36.44% (although in the last 4 years this proportion is closer to 16%). In our model, we consider the Brent oil prices (which is the price of the oil market of the Brent blend based around the North Sea of Northwest Europe) to capture exogenous shocks from in the international oil market that might affect the budget constraint of the federal government and the availability of funds for state and local governments.

The variables including the index of economic activity, the interest rate, the inflation rate, the effective tax rate are lagged by 12 months to avoid issues of endogeneity. The price of oil is not lagged because we use the price of the oil market of the Brent blend based around the North Sea of Northwest Europe as a proxy of the evolution of the price of oil of the Mexican mix which captures international exogenous shocks on the budget of the federal government, and it should be clear that the variable *Poil (Brent)* is exogenous of changes in the budget of state and local governments in Mexico.

We also include the growth of population, called *Population*, which is considered by the literature as an important determinant of the demand of public goods (see Tresch, 2022), and political variables including a dummy variable called, *Election Year*, that takes the value of one when there is a presidential election and zero otherwise. In Mexico presidential elections take place every 6 years in Mexico, and in our sample, there were elections in years 1994, 2000, 2006, 2012 and 2018, and 2024. In addition, we include a dummy variable called, *Second Year*, which takes the value of one in the second year in the administration and zero otherwise.

We also include dummy variables for the identity of the party ruling the federal government. The party known as "Partido Revolucionario Institucional PRI" (a left-center party) ruled the federal government between December of 1995 and November of 2000 and again between December of 2012 and November of 2018, hence we use a dummy variable taking the value of 1 when the PRI ruled the central government and zero otherwise.

The party "Movimiento de Regeneración Nacional, known as MORENA¨ (the party at the left of the political spectrum) has been ruling since December of 2018 to the end of our sample (April 2024), and we consider a dummy variable taking the value of 1 when MORENA ruled the central government and zero otherwise. Therefore, for our dummy variables of parties running the federal government, our point of reference is the administration of PAN, and our comparative analysis of the different administrations (if significant) would show differences in policy choices of parties PRI and MORENA relative the choices taken by the administrations ruled by PAN. The party known as "Partido Accion Nacional PAN" (the party at the right of the political spectrum) ruled the federal government between December of 2000 until November of 2012.

In addition, we include a dummy variable when the party in the executive branch has control of the legislative power, which is called *PARTY CONTROL*. In our sample, there is party control between December of 1995 to the end of 2000, and again in the period between December of 2018 and the end of 2021.

4.1 Data

Our sample is constituted by 375 monthly observations from 1993 to April of 2024, and the central bank of Mexico is the source of data on the index of economic activity, the interest rate, and the inflation rate. Data on population is from Instituto Nacional de Estadística y Geografía e informatica called INEGI which is the national institute for statistics, geography, and informatics. The effective tax price is calculated as the per-capita tax payments in Mexico. We use data on tax revenue from the central bank of Mexico and we estimate the size of population monthly using data from INEGI. The source of data for the price of oil of the Brent mix is the Federal Reserve Bank of the United States. The National Electoral Institute (known as INE) is the source of data on election years, the second year of an administration in the federal government, the party ruling the federal government, and the variable of control of the party in the legislative branch of the Mexican government.

5. Estimation Results

In this section we present our results of the regression analysis. We estimate our model in (1) using ordinary least squares (OLS), however the Durbin Watson test shows a strong autocorrelation of the error terms, and the data is non-stationary. To solve these issues, we use the Cochrane-Orcutt estimation which is found by estimating the degree of autocorrelation among error terms defined by $\hat{\rho}$ though the residuals obtained by using the OLS estimator in (1).

We then transform our data by calculating the first difference $y_t^* = y_t - \hat{\rho} y_{t-1}$ and $\forall\, x_t \in \mathrm{X}_t : x_t^* = x - \hat{\rho} x_{t-1}$ using our estimate of $\hat{\rho}$ and computing a first difference model of (1). It is well known that the marginal effects of running x_t^* on y_t^* yields the same marginal effects of $\widehat{\mathrm{B}}$ by running X_t on y_t in model 1 (see Enders 2015, among many other references). After obtaining the first difference of $y_t^* = y_t - \hat{\rho} y_{t-1}$ and $\forall\, x_t \in \mathrm{X}_t : x_t^* = x - \hat{\rho} x_{t-1}$ we run augmented Dickey Fuller tests on y_t^* and x_t^* and find that the transformed data is stationary. We, then, estimate the first difference model of (1) of x_t^* on y_t^* using OLS.

Table 1 shows our estimates by using the rate of growth of the independent variable y_t^* and explanatory variables x_t^* for 1, 3 and 6 years, see respectively models I, II, and III. It is relevant to consider short- and medium-term definitions of intergovernmental transfers to subnational governments because Institutional and political barriers might constraint the ability of politicians in power of implementing their policy preferences. In addition, by estimating models I, II and III we develop a robustness test of our analysis.

The results of the regression analysis show that the way voters vote in presidential elections have significant consequences in the allocation of budgets for state and local governments in Mexico because the variables associated with political institutions, such as parties and the control of the executive power over the legislative power (that is party control), are statistically significant with a p value of $p < 0.01$ for all models estimated.

Our models show that the party identified at the left of the ideological spectrum (MORENA) and the left-centered party (PRI) decentralize more resources to subnational governments in Mexico by allocating more intergovernmental transfers to state and local governments than the party identified at the right side of the political spectrum (PAN). Our analysis shows that federal administrations of MORENA has the largest positive marginal effect in the allocation of budgets to state and local governments.

To be more precise, if the party PRI wins the presidential election, then the one-year rate of growth of the budget allocated to state and local government increases by 9%, if the party known as MORENA wins the election then it increases by 20%. Party effects are also significant for the three-year rate of growth of federal transfers to state and local governments: if PRI wins the presidential election, then the three-year rate of growth of subnational transfers increases by 13.76% and if MORENA wins, it increases by 49.83%. In the case of the six-year growth of federal transfers, if PRI wins the presidential election, then the six-year rate of growth of subnational transfers increases by 35.6% and if MORENA wins it increases by 67.39%.

Table 1. Estimation results on the determinants of resources allocated by the Federal Government to State and Local Governments

	Budget for State and Local Governments 1 year Growth (I)	**Budget for State and Local Governments 3 Years Growth (II)**	**Budget for State and Local Governments 6 Years Growth (III)**
C	-24.67	-73.7	-77.1
	(-1.66)	(-2.42)	(-1.07)
IGAE	-0.2738**	-0.5541***	-0.6356***
	(-1.97)	(-3.38)	(-2.67)
Per capita Tax Rate	0.0393	-0.0007	0.0921
	(0.42)	(-0.01)	-1.21
Interest Rate	-0.0237**	-0.0367	0.0381
	(-2.16)**	(-1.23)	(0.81)
Inflation Rate	0.0051	-0.0072	-0.0442
	(0.414)	(-0.25)	(-1.25)
Poil (Brent)	0.0098	-0.0014	0.0036
	(0.834)	(-0.13)	(0.24)
Population	15.96	19.62*	11.64
	(1.46)	(2.58)	(1.26)
Election Year	13.24***	18.74***	-0.4048
	(6.72)	(8.06)	(-0.14)
Second Year	9.9***	6.62***	2.12
	(5.27)	(2.75)	(0.80)
PRI	9.77***	13.76***	35.36***
	(2.77)	(3.07)	(6.72)
MORENA	20.05***	49.83***	67.39***
	(3.07)	(5.34)	(5.46)
PARTY CONTROL	-9.62***	-12.51***	-42.99***
	(-2.69)	(-2.68)	(-5.55)
$Adj. R^2$	0.7317	0.756	0.8165
$Durbin\ Watson\ Test$	2.06	2.15	1.92
$F\ test$	80.54***	85.18***	103.13***
n	351	327	291

t statistics in parenthesis and the significance level for p<0.01***, for p<0.05**, and for p<0.1*.

Our results also shows that administrations in which the executive power has at least a simple majority in congress, which is *PARTY CONTROL*, leads to less resources allocated to state and local governments. This effect is statistically significant with a p value of $p < 0.01$ for all models estimated. Under party control of the congress, the annual rate of growth of transfers to state and local governments falls by 9.62%, the three-year rate of growth of transfers falls by 12.51%, and the six-year rate of growth falls by almost 43%.

An explanation of this outcome is that a majority of congress might eliminate the incentives of politicians in the federal government to cultivate legislators from different regions of the country, which in turn, is translated into less resources for subnational governments in Mexico. The significance of this outcome is that, when there is no *PARTY CONTROL* (which is most of our sample), partisan effects of administrations of PRI and MORENA in the allocation of budgets for state and local governments might be exacerbated by the legislative bargaining in congress which promotes more intergovernmental transfers to subnational governments.

We also find that election years and the second year of the administrations have a positive and statistically significant effect on intergovernmental transfers in our sample. Election years leads to more decentralization of resources for the rate of growth of 1 and 3 years of transfers to subnational governments, because state and local governments receive an increase of 13.24% in the annual rate of growth of intergovernmental transfers, and an increase of 18.74% in a three-year rate of growth of these transfers. However, the gains from election years dissipate when we calculate the six-year rate of growth in federal transfers. This evidence suggests a political cycle in which subnational governments receive transfers above the trend around election years and a reversion to the mean occurring in the 3 to 5 years following the election.

We find similar outcomes with the second year of the administration. Due to transition issues from one government to another, discretion in choosing policy of a new administration in the federal government might take place until the second year in which a party is ruling. This is the case, because there might be issues of learning by doing in the first year of an administration, also in the first year there could be lack of time to negotiate their preferred choice of the budget (in Mexico transition governments have approximately 3 months to negotiate the approval of the budget of the first year of the government). In addition, a change in the identity of suppliers of a new administration in the federal government might take time because it is more likely that campaign contributors might participate as suppliers after the first year of an administration.

To capture that the effect that a partisan use of budgets is more likely after the first year of the administration, we use a dummy variable for the second year of each administration. The second year is statistically significant for models I and II, but not for model III. That is, we find that in the second year of a presidential administration the one-year rate of growth of the budget allocated to subnational governments increases by 9.9%, the three-year of growth increases by 6.62%, and the effect on the six-year of growth is statistically cero.

Our analysis shows that for all our models, an increase in the rate of growth of the economic activity is statistically significant for all of our models for a p value of $p < 0.01$ and negatively correlated and with the rate of growth of resources allocated to state and local governments. This outcome shows that as the economy grows, the federal government increases its tax revenue, and the resources allocated in goods and services directly managed by the federal government but the budget to state and local governments falls leading to a more centralized allocation of budgets in Mexico.

Changes in the interest rate and inflation rate are only significant for a p value of $p < 0.05$ when we use the annual rate of growth in our variables. With increases in the interest rate leading to less transfers to subnational governments and increases in the inflation rate leading to more transfers to state and local governments. The rate of growth of population is only significant when we calculate the rate of growth in three years with a positive effect as theory suggests. Another interesting outcome is that positive shocks in tax revenue of the federal government that might come from increases in the effective tax rate and the price of oil do not translate into more resources to state and local governments.

6. Conclusion

In many modern economies, the supply of local public goods and services from local governments are financed by a mix of resources from local, state, and federal governments, and the evidence shows that elections are important to form the government and determine public policies. However, which elections: local, state, or federal, are relevant to explain the allocation of resources financing subnational public spending? In this paper, we develop an empirical analysis to study whether federal elections and political institutions, such as parties and the control of the national executive power over the national legislative power, are relevant to explain the size of the budget allocated by the federal government to state and local governments in Mexico.

The main findings are: first, elections and the second year of the administration of a national government increase significantly the one-year and the three-year rate of growth of the budget allocated by the federal government to state and local governments, however, there is no effect on the six-year rate of growth of transfers to subnational governments. This evidence suggests a political cycle in which subnational governments receive transfers above the trend around election years and a reversion to the mean occurs in the three to five years following the election.

Second, the way voters vote in presidential elections have significant consequences in the allocation of resources for state and local governments in Mexico, because parties identified at the left of the ideological spectrum (such as MORENA) and the left-center party (PRI) decentralize more resources to subnational governments in Mexico (relative the party identified at the right side of the political spectrum PAN) by allocating more intergovernmental transfers to state and local governments. These effects are economically and statistically significant.

Third, administrations in the central government in which the executive power has at least a simple majority in congress leads to less resources allocated to state and local governments. A majority of congress might eliminate the political incentives to cultivate legislators from different regions of the country, which in turn, is translated into less resources for subnational governments in Mexico. The significance of this outcome is that partisan effects in the allocation of budgets for state and local governments might be intensified by legislative bargaining in congress which promotes more intergovernmental transfers to subnational governments.

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Authors Contributions

PhD Benito Alan Ponce Rodríguez and PhD Raúl Alberto Ponce Rodríguez participated jointly in all the research process and writing of this paper.

Competing Interests

Authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

References

Agranoff, R. (2014). Relations between local and national governments. *The Oxford Handbook of State and Local Government*, 28-69. https://doi.org/10.1093/oxfordhb/9780199579679.013.002

Atkinson, A. B., & Stiglitz, J. E. (2015). *Lectures on public economics* (Updated edition). Princeton University Press. https://doi.org/10.2307/2553530

Bergvall, D., Charbit, C., Kraan, D. J., & Merk, O. (2006). Intergovernmental transfers and decentralized public spending. *OECD Journal on Budgeting*, *5*(4), 111-158. https://doi.org/10.1787/16812336

Besley, T., & Coate, S. (2003). Centralized versus decentralized provision of local public goods: A political economy approach. *Journal of Public Economics*, *87*(12), 2611-2637. https://doi.org/10.1016/s0047-2727(02)00141-x

Blanchard, O., & Shleifer, A. (2001). Federalism with and without political centralization: China versus Russia. *IMF staff papers*, *48*(Suppl 1), 171-179. https://doi.org/10.2307/4621694

Dubois, E. (2016). Political business cycles 40 years after Nordhaus. *Public Choice*, 166, 235-259. https://doi.org/10.1007/s11127-016-0313-z

Enders, W. (2015). *Applied econometric time series* (4th ed.). New York (US): University of Alabama. https://doi.org/10.2307/1269759

Enikolopov, R., & Zhuravskaya, E. (2007). Decentralization and political institutions. *Journal of Public Economics*, *91*(11-12), 2261-2290. https://doi.org/10.1016/j.jpubeco.2007.02.006

Hankla, C. R., Martinez-Vazquez, J., & Rodríguez, R. A. P. (2019). *Local accountability and national coordination in fiscal federalism: A fine balance*. Edward Elgar Publishing. https://doi.org/10.4337/9781788972178

Hettich, W., & Winer, S. L. (1999). Democratic choice and taxation. *Cambridge Books*. https://doi.org/10.1017/cbo9780511572197

Kochi, I., & Ponce-Rodríguez, R. A. (2011). Voting behavior, preference aggregation and tax design. *International Journal of Economics and Finance*, 3(5), 117-129. https://doi.org/10.5539/ijef.v3n5p117

Lockwood, B. (2002). Distributive politics and the costs of centralization. *The Review of Economic Studies*, *69*(2), 313-337. https://doi.org/10.1111/1467-937x.00207

Lockwood, B. (2015). The political economy of decentralization. *Handbook of Multilevel Finance*, 37-65. https://doi.org/10.4337/9780857932297.00008

Martinez-Vazquez, J. (2008). *Revenue assignments in the practice of fiscal decentralization*. Edward Elgar. https://doi.org/10.4337/9781848442719.00010

Martinez-Vazquez, J., & Searle, B. (Eds.). (2007). *Fiscal equalization: Challenges in the design of intergovernmental transfers*. Springer Science & Business Media. https://doi.org/10.1007/978-0-387-48988-9

Milanovic, B. (2000). The median-voter hypothesis, income inequality, and income redistribution: An empirical test with the required data. *European Journal of Political Economy*, *16*(3), 367-410. https://doi.org/10.1016/s0176-2680(00)00014-8

Mueller, D. C. (2003). *Public choice III*. Cambridge University Press. https://doi.org/10.1108/03068290310492896

Ponce Rodríguez, R. A., & Ponce Rodríguez, B. A. (2021). Regional Heterogeneity of Preferences and Intergovernmental Transfers. *Economies*, *9*(1), 33. https://doi.org/10.3390/economies9010033

Ponce-Rodríguez, R. A., Hankla, C. R., Martinez-Vazquez, J., & Heredia-Ortiz, E. (2020). The politics of fiscal federalism: Building a stronger decentralization theorem. *Journal of Theoretical Politics*, *32*(4), 605-639. https://doi.org/10.1177/0951629820956287

Roemer, J. E. (2009). *Political competition: Theory and applications*. Harvard University Press.

Romer, D. (2012). *Advanced macroeconomics*. McGraw-Hill Companies, Inc.

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

Stokey, N. L., & Lucas Jr, R. E. (1989). *Recursive methods in economic dynamics*. Harvard university press. https://doi.org/10.2307/j.ctvjnrt76

Tresch, R. W. (2022). *Public finance: A normative theory.* Academic Press. https://doi.org/10.2307/2552968

Wittman, D. (1983). Candidate motivation: A synthesis of alternative theories. *American Political Science Review*, 77(1), 142-157. https://doi.org/10.2307/1956016