

# **POLITICAL COMPETITION AND FISCAL PERFORMANCE: EVIDENCE FROM COLOMBIAN MUNICIPALITIES**

## **ABSTRACT**

This paper explores the relationship between political competition, expressed through electoral outcomes, and fiscal performance in the Colombian municipalities for four local government periods from 2000 to 2015. Significant differences in municipal economics outcomes could reflect significant differences in public goods provisions, issue closely related with local government capacity in different fields, among them fiscal performance. Growing literature show empiric evidence of link between political competition and many aspects of government performance in local context for advanced economics. Using a fixed effect panel data model, we find a direct relationship between political competition and fiscal performance at local level. Municipalities with more fragmented (concentrated) councils show positive (negative) variations in general fiscal performance, especially in terms of self-resource generation and less national transfer dependence. These results are according to theoretical framework offer by the properties of competitive markets extrapolated to political markets.

Keywords: Political competition, Fiscal performance, Regional government.

## **1. INTRODUCTION**

In economics, the study of the feature of competitive markets has shown advantages in terms of social welfare in regards to monopolies and other structures with market power. The lack of competition in this context has consequently higher prices and fewer goods, allowing Rent-seeking. The same reality has been extrapolating toward political markets by economist and political science. From the seminal work of Stigler (1972), different theoretical models have shown how the lack of competition in political market can address lower public goods provision, inefficiency in government action and Rent-seeking (Barro, 1973; Becker, 1983).

The possible advantage of competition in political field, have motivated the comparative study of economic performance between countries with different political regimes, associated with more and less competition, this is the case of western democracies and totalitarian government (Wittman, 1989; Polo, 1998; Lake and Boum, 2001, Pinto and Timmons, 2005). These works have tested the theoretical advantages of political competition through economic outcomes, such as growth and level income, showing a significant positive effect.

However, the effect of political competition in economic outcomes is indirect, and takes place through the government performance (Besley and Case, 2003), thus, recent works

in the political competitions field have focused in the study of links between competition and different aspects of government performance in theoretical and empirical terms (Besley et al, 2010). This approach has moved the spotlight from inter-country to intra-country study, this by allowing to observe the effect of political competition under the same institutional context. In consequence, studies for the United States' states (Besley et al, 2010) and Italians' regions (Padovano and Ricciuti, 2009), have shown how political competition impacts the type of economic policies and the level of public debt, respectively, improving the economic performance.

In theory, high political competition level encourages the efficiency in public goods provision and dissuade Rent-seeking behaviors in the ruling party, otherwise, it would jeopardize their reelection odds. According to this, recent studies have shown the effect of political competition in the government performance for local levels<sup>1</sup>, specifically, this is the case of Boyne et al. (2012), Ashworth et al. (2014), and Sorensen (2014) for English, Flemish and Norwegian municipalities, respectively, finding a positive and significant effect of political competition in aspects as the productive efficiency of public goods provision.

This paper uses the framework exposed above to explore empirically the relationship between political competition and fiscal performance in Colombian municipalities. The proficiency of local government to generate incomes, allocated the expenditure and management of resource transfer from national governments is closely linked with the main aspects identified by the literature like channel through political competition affect government performance: public goods provision and rent seeking. Furthermore, fiscal performance is a key aspect in many different issues related with local government, such as decentralization and public finances.

Different studies have shown the effect of political competition in fiscal performance at a local level in developed countries. Reingewertz (2015) uses Israel municipalities information in a cross-section setting, finding different results according to ethnic characteristics of population. Jewish municipalities shown large fiscal deficit and public debt when political fragmentation was large. On the other hand, Muslim municipalities improve their fiscal performance when political power is allocated in different political parties. . Rodríguez-Bolívar et al. (2018) study the effect of political variables in financial sustainability in Spanish local government from 2006 to 2014. Using the generalized method of moments system, these authors find that political competition, and measurement through council fragmentation, increase financial profile risk. Recently, Suzuki and Han (2019) estimated the effect of citizen participation in fiscal performance for 807 city-level Japanese municipalities from 2006-2012 in a panel data setting. Lack of competition in local election because of the absence of candidates different to the majoritarian party affects the competitiveness of political

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<sup>1</sup> Also, De Paola and Scoppa (2011) show how political competition improvement the politician quality in the Italian municipalities.

environment in 20% of municipalities. The author finds a positive and significant effect of citizen participation in fiscal performance through increased political competition.

The result exposed above, pointed the complexity of the relationship between political competition and fiscal performance. The theoretical statement provided by the literature of Stigler's tradition claims that a positive effect of political competition on government performance is the incentive to improve the efficiency in the ruling party. Nevertheless, an opposed result could be arisen as consequence of political fragmentation. Large distribution of political power among different political parties could have negative effect over government performance due to the need to form a complex and unstable government coalitions (Perotti & Kontopoulos, 2002) limiting its power to carryout significant change in fiscal aspects. Furthermore, access of different interest groups, representing in political parties according to agency approach, to common pool of resources could stimulate increase in public expenditure without revenue support (Alesina & Drazen, 1991; Weingast, Shepsle, & Johnsen, 1981), affecting negatively the local fiscal performance. Consequently, the relationship between political competition and fiscal performance could follow any direction according to the weight of the opposed forces in conflict: efficiency effect and political fragmentation effect.

Study of fiscal performance at local level in Colombia also has explored the linkage with political variables. Bonet et al. (2014) assess the effect of legal change in local royalty allocation in fiscal performance at municipal level in 2012 in a quasi-experimental setting, using among their controls, local political competition variables. Sánchez and Pachón (2013) focused on the effect that national electoral competition has on fiscal effort at municipal level. In a hazard model setting, the authors estimated the probability of the local government to update the cadastral data to increase local revenue, finding that local political concentration has a negative effect in the probability to carried out this action. Similar results are reached by Ramírez et al. (2017) in a spatial regression setting and Martínez (2018) who explored the impact of different revenue sources in local government performance, using as controls different local political variables, finding a negative effect in government efficiency. Consequently, empirical research carried out by Colombian case shown a positive effect of political competition on fiscal performance, according to the efficiency effect approach.

Despite the use of some political competition variables in the study of different aspects of local fiscal performance in Colombia. This paper is the first, as far as we know, focused in the effect of political competition over fiscal performance, using ad-hoc model controlling by different aspects pointed out by literature as determinants of fiscal performance. In contrast to other papers, we use the local government period as a unit time of analysis and variation of fiscal indicators, not levels, as depended variables to overcome the structural nature of fiscal performance at local level in a fixed effect panel data setting. This alternative approach could improve our knowledge about the relationship of political environment and fiscal performance due to the direct inference of the impact of current political environment over fiscal changes, despite long term trends.

The rest of this paper is organized as followed; section 2 describes the institutional framework of fiscal and political decentralization in Colombia. Section 3 presents the empirical strategy proposed to estimate the effect of political competition in fiscal performance at local level. Section 4 shows the data and the main results are described in section 5. Conclusions are developed in section 6.

## 2. INSTITUTIONAL FRAMEWORK OF FISCAL AND POLITICAL DECENTRALIZATION IN COLOMBIA

Colombia for several decades of the twentieth century was characterized by having a centralized fiscal system, in which the national government was the main tax collector and provider of public goods and services (Iregui, Ramos, & Saavedra, 2001). However, this feature has been changing as a result of different reforms implemented in the country with the objective of giving territorial entities (departments or states and municipalities) greater autonomy, through the strengthening of own resources and transfers from the central government (Bonet-Morón, Pérez-Valbuena, & Montero-Mestre, 2018).

The starting point of the road to decentralization was the Legislative Act 01 of 1986 opening the door to the popular election of mayors and municipal councilors, and therefore, to the deconcentration of power. Fact that constituted the beginning of the so-called process of "democratic openness" and political reform (Gaitán, 1988).

Subsequently, the Political Constitution of 1991 stated that Colombia is a state (...) organized in the form of a unitary Republic, decentralized, with autonomy of its territorial entities, democratic, participatory (...) (Const., 1991, Art. 1). In this sense, indicated that the services provided by territorial entities would be determined by law, by the initiative of the government, as well as the resources allocated to the attention and adequate provision of such services (Const., 1991, Art. 356). In addition, it gave them the power to impose taxes and parafiscal contributions (Const., 1991, Art. 338). Fiscal reforms that apparently were aimed at decentralizing national expenditure and to improve the coverage and efficiency in the provision of public goods (Iregui, Ramos, & Saavedra, 2001).

The arguments in favor of decentralization lay in the fact that the government is brought closer to the citizens, as a mechanism to better understand the needs and seek a more efficient targeting of social investments (Oates, 1999). In addition, Bird (2000) refers to the evidence about the greater prudence and efficiency in the use of resources by subnational governments, when they come from their own sources. On the other hand, there are arguments against it, considering the fiscal laziness that would bring the increase in transfers from the central government, the overflowing increase in public spending, and the greater indebtedness (Bardhan and Mookherjee, 2005). However, (Bonet-Morón, Pérez-Valbuena, & Montero-Mestre, 2018) found no evidence to support fiscal laziness of the municipalities of Colombia

Initially two mechanisms were used to transfer resources to territorial entities, The Situado fiscal and municipal participations<sup>2</sup>, but these mechanisms were reformed to become the General Participation System (GPS) since 2002 (Law 715, 2001). The resources of the GPS correspond to a percentage of the nation's current income which are transferred to territorial entities (states, districts and municipalities). The main changes made to the GPS since its creation correspond to the criterion of allocation of the amount that will be transferred from the central government to the territorial entities.

The General Participation System is made up of two allocation criteria: special assignments and sectoral distribution. The first group (4% of GSP) designate resources for indigenous reservations, riverside of the Magdalena River, territorial pension fund and school feeding; and the second group (96% of GSP) designate resources for education, health, drinking water and general purpose<sup>3</sup>, becoming these sectors as the main responsibilities of the municipalities.

Besides, with the growing importance of the country's mining-energy revenues, the National Royalty Fund was created and regulated the right of the State to receive royalties for the exploitation of non-renewable natural resources (Law 141, 1994). Lastly, the General System of Royalties was created, (Law 1530, 2012) it modified the criteria for distribution of resources and created funds for resource management<sup>4</sup>. GSR resources will be used to finance projects for social, economic and environmental development of local authorities; also for investments in science, technology and innovation; and to increase the general competitiveness of the economy, seeking to improve the social conditions of the population, among others.

The transfer system is a fundamental part of the financing structure of territorial entities. However, the municipalities haven't proven to be the most efficient organs to manage resources. Thus, the central government established some reglamentation for debts and fiscal sostenibility (Law 358, 1997), and maximum amounts to finance operating expenses (Law 617, 2000) that depends on the category of municipality<sup>5</sup>. Although this regulation, together with

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<sup>2</sup> The Situado Fiscal represented the resources that the central government allocated to the departments, the capital district and the districts of Cartagena, Barranquilla and Santa Marta in order to finance health and education. And the municipal participations represented the resources allocated to the municipalities to finance health, education, drinking water and basic sanitation, and housing (Art. 356 of CPC 1991; Law 60 of 1993).

<sup>3</sup> The distribution of resources to finance the education, health and drinking water sectors take into account the following criteria: the population that has been taken care of and the population that will have to be taken care of, the distribution of the urban and rural population, and administrative and fiscal efficiency.

<sup>4</sup> Science, Technology and Innovation; Regional Development; Regional Compensation; and Savings and Stabilization Funds.

<sup>5</sup> Law 617 of 2000 classifies territorial entities. For municipalities, it establishes categories that range from special category to sixth category, both for departments and municipalities, their category depends on the following variables: current income and population.

the fact that a significant percentage of transfers has a specific destination, it can be considered as a limitation to the autonomy of municipalities in the management of public finances.

### 3. EMPIRICAL STRATEGY

The estimation of the effect of the political competition level on the fiscal performance of Colombian municipalities uses the information of the periods of local government between 2000 and 2015. A data panel model with fixed effects is used to include of the differences in the variables of interest between municipalities and within them over time. Consequently, the proposed econometric specification follows the form presented in equation 1.

$$y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \varphi_i + \varepsilon_{it} \quad (1)$$

Where  $y$  represents the variable of fiscal performance of the municipality  $i$  in the period of local government  $t$ . On the other hand,  $X$  represents the variable of political competence and  $Z$  is a set of control variables, while  $\varphi$  captures the fixed effects by municipality. Finally,  $\beta_1$  represents the parameter that captures the impact of political competition level on the municipal fiscal performance index during the period of government and  $\varepsilon$  is the term of disturbance.

The choice of a Data Panel model with Fixed Effects is due to the need of control for the wide range of idiosyncratic phenomena typical of each municipality that can influence the variation in fiscal performance. It's expected that the fiscal performance local trajectory is affected by different factors like the degree of political competition, or to any of the demographic and socioeconomic aspects captured by the control variables, such as the characteristics of the economic activity and unobservable local institutional arrangements whose omission would lead to biases in the estimation of the parameter of interest. Therefore, the inclusion of municipality fixed effects is necessary.

Since the proposed research seeks to make inferences between the fiscal performance of Colombian local governments, the time unit used in the estimate proposed above (t) corresponds to the period of government indicated by Colombian legislation, as expressed in Figure 1.

The use of the government period as a unit of time makes the choice of the form of the fiscal performance variable a relevant issue. Since the different measures of fiscal performance, explained in detail in the subsequent chapter, can be observed in each of the years in the period 2000-2015, there are different alternatives about how to capture the local government's fiscal performance, with implications for the empirical strategy to be used. The first alternative corresponds to the use of level variables, it is, the value of fiscal indicators at a

specific time during the period of government, such as the second or last year of the term of office, or the average during the term of office. The second alternative corresponds to the study of the variations of the fiscal indicators, it is, the comparison between the value of the first and the last government year.

Figure 1. Analysis temporal structure



Source: Authors elaboration

Note: Article 314 of the 1991 Constitution states that: In each municipality there will be a mayor, head of the local administration and legal representative of the municipality, who will be popularly elected for periods of three years, not re-eligible for the following period. But this period was modified by Legislative Act 02 of 2002, which established a period of four years.

The most important aspect in choosing any of these alternatives is its link with the distribution of local political power. In this regard, the first consideration that must be taken into account is the special condition of the taxes in Colombian municipalities, characterized by the high dependence of most municipalities on the resources transfers from the national government, as well as acting under a legal framework that limits the scope of local authorities over their finances and the monitoring that the central government exercises over local public accounts, characteristics that make the value of the fiscal index shown by the municipalities obey structural conditions, more than the short-term political realities, while the variations of these indicators would be susceptible to these dynamics.

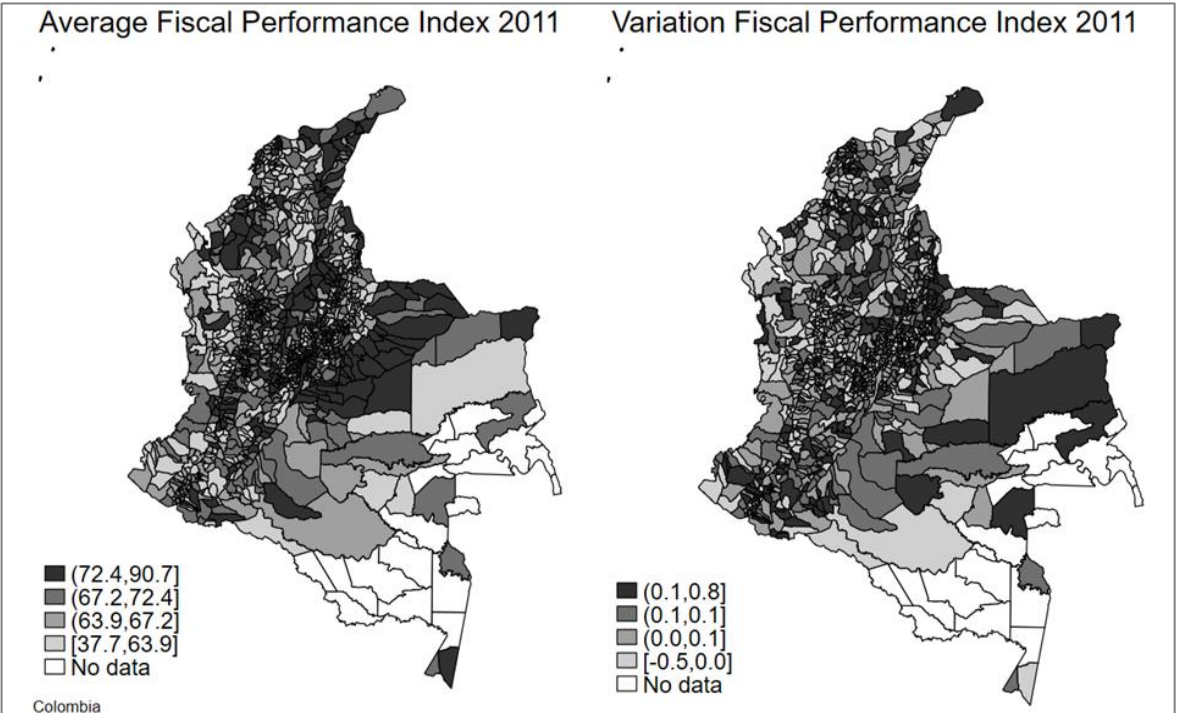
To analyze this issue, unit root tests on the average level of the tax system during the period of government are carried out, finding that these are temporary (see Appendix 1) unlike the variations. The other aspect to consider in this discussion is the possible spatial dependence of the variable we are interested in. In this regard, the calculation of Moran's I statistic shows a positive result for the average levels of the fiscal performance indices and not for their variation, being proof of the structural condition of the levels of the fiscal variable. Figure 2 shows the geographical distribution of the average level Fiscal Performance Index versus its variation for the period of government of the elected authorities in 2011 (variation between 2012 and 2015) (For more details see Appendix 2).

Taking into account the above, equation 1 is rewritten to give way to a specification based on the relative variation shown by the fiscal performance indicators during the observed government periods, as shown in equation 2.

$$\Delta y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \varphi_i + \varepsilon_{it} \quad (2)$$

Where  $\Delta y_{it}$  represents the variation of the fiscal performance indicator of the municipality  $i$  in the period of government  $t$  and the other elements correspond to the same exposed in equation 1. The use of the indicator variation, instead of its level, allows the estimation of parameter  $\beta_1$  through the use of a panel data model with fixed effects to be plausible, since the dependent variable does not follow an autoregressive and/or spatial dependence process that requires the use of an econometric specification according to these situations.

Figure 2. Level vs Variation of the FPI



Source: Authors elaboration



Finally, one of the most sensitive issues in an empirical exercise such as this is related to the possible existence of a two-way causality. The hypothesis in this research, in line with the literature on the effects of political competition on government performance, indicates that the distribution of local political power affects the fiscal performance of municipalities. However, it could be argued that a better fiscal performance is related to a greater provision of public goods such as education, which would favor the development of a more competitive political scenario. Therefore, it is important to note that, as shown in Figure 2, the configuration of political power and the management of the municipal treasury do not take place simultaneously. The fact that local authorities are elected in the year prior to the start of their management implies that it is impossible for the variation in local fiscal performance to affect the choice of the political agents that caused it.

#### 4. DATA

The present study uses the information of the Fiscal Performance Index (FPI) for the period 2000-2015 as a proxy for fiscal performance. The index is calculated by the National Planning Department based on the use of the Principal Components Analysis (ACP) method on six aspects of municipal public finances. These are: (i) percentage of current income destined for operation, (ii) magnitude of the debt, (iii) percentage of income corresponding to transfers, (iv) percentage of income corresponding to own resources, (v) percentage of total expenditure for investment and, (vi) savings capacity (see Appendix 3).

On the other hand, the electoral results of the mayor and members of the city council elections for the years 2000, 2003, 2007 and 2011, is provided by the Center for Economic Development Studies (CEDE) of Los Andes University, and it is used to construct different measures aimed at capturing the level of concentration (dispersion) of local political power. These are: (i) share of votes for the winning candidate in the total votes casted for the election of the mayor, (ii) share of the difference between the first and second most voted option in the total votes cast for the election of the mayor, (iii) share of the mayor's party in the total number of seats in the council, (iv) HHI for the distribution of votes for the mayor election, (v) HHI for the distribution of the seats of the municipal council<sup>6</sup>, (vi) Gini coefficient for the distribution of votes to the mayor's office and, (vii) Gini coefficient for the distribution of the seats of the municipal council.

As specified in equation 1, other aspects of socioeconomic nature have an impact on the variation of the FPI, among these are (i) citizen participation in political processes, (ii) demographic characteristics, (iii) educational achievement, (iv) the incidence of violence, (v) the economic development level, (vi) the magnitude of the resources obtained by the municipality from the central government and (vii) the political alignment of the mayor with higher levels of government. The variables used to capture these aspects are explained below.

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<sup>6</sup> Borge, Falch, & Tovmo, 2008; De Paola and Scoppa, 2011; da Cruz & Marques, 2014.

As a proxy for citizen participation in local political processes (Borge, Falch, & Tovmo, 2008; Suzuki & Han, 2019), the electoral participation index is used for the four periods of government between 2000 and 2015. This variable is calculated based on the information provided by the national civil registry status and it is a recurring control in empirical studies on political competence and public management. A higher level of electoral participation is expected to contribute to a positive variation of the FPI.

The logarithm of the total population and the average rural habitation rate during the period of government are used to capture the demographic characteristics of the municipality. Information on these items is offered by CEDE and is expected a positive relationship between FPI variation and total population on account of the economic benefits that derive from a large domestic market (Ashworth et al, 2014; Boyne, James, John, & Petrovsky, 2012), and greater urbanization, respectively.

The average results in the evaluation tests of secondary education -Saber Pro 11- during the period of government in the municipality, are used as a proxy for local educational achievement. The literature indicates the level of education of the population as one of the major determinants of government management, affecting it positively (Boyne, James, John, & Petrovsky, 2012; Cruz & Marques, 2014; De Paola and Scoppa, 2011; Sorensen, 2014).

The prevalence of violence in Colombia and its effects on the different aspects of life in society, as well as its spatial heterogeneity, makes it necessary to consider this aspect when studying the variations of the municipal fiscal performance. Consequently, the Armed Conflict Incidence Index (ACII) built by the National Planning Department through the presence of illicit crops, the involvement of attacks made by illegal groups and the magnitude of crimes such as kidnapping, are used as a proxy for violence. Its effect on the variation of local fiscal performance is expected to be negative.

As a proxy for economic development, the logarithm of the night brightness intensity captured by satellite images is used. This variable has been used in other studies to obtain an approximation of the level of economic activity development in the absence of direct information on these aspects (Henderson, Storeygard, & Weil, 2011). It is expected that higher values of this variable are positively related to the FPI variation.

To capture the magnitude of the income received by local governments originated from the central government, the per capita value of transfers received by the municipality and the per capita value of royalties received by the municipality are used. The literature on the curse of natural resources indicates the existence of a negative effect on income from natural resources extraction in the government performance, consequently, an inverse relationship between royalties and fiscal performance could be expected (Faguet & Sánchez, 2014). On the other hand, the relationship between national transfers and local fiscal performance is not clear enough. Some studies argue that transfers discourage the fiscal effort of local governments, while other lines of literature highlight the positive effect that these have on the provision of

public goods, and through this channel, on a better performance in local governments (Borge, Falch, & Tovmo, 2008).

The coincidence of the mayor's political affiliation with the governors and the president's coalition is used as a proxy for political alignment. According to the literature, this alignment can negatively affect the fiscal performance of local governments by discouraging their effort to generate their own resources, given that their partisan ties with other entities can relax their budgetary restriction by allowing access to other sources of income different to their own restrictions.

Descriptive statistics of the variables used are presented in Table 1. The information on the control variables corresponds to the average of the variable during the period of local government, following the scheme described in Figure 1.

Table 1. Descriptive statistics

<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<b>Fiscal Performance Variables</b>					
Fiscal Performance Index	62,51	7,98	30,01	90,65	3722
Self-financing Operation Cost	62,78	16,41	12,9	198,53	3722
Debt Service	6,61	8,39	-5,12E-09	131,58	3722
Transfer	70,77	16,47	6,09	98,17	3722
Own Resource	29,02	22,66	0,12	99,26	3722
Investment Magnitude	62,78	16,41	6,06	98,17	3722
Saving	30,97	21,99	-283,53	87,76	3722
<b>Political Competition Variables</b>					
Votes of the mayor (%)	50,32	12,59	10,43	100	3722
Difference between option 1 and 2 (%)	16,41	16,25	0,01	100	3722
Share council of the mayor's party	34,18	22,96	0	100	3722
HHI - Mayor election	41,62	12,48	5,84	100	3722
HHI - Council election	34,09	16,09	11,05	100	3722
Gini - Mayor election	0,33	0,19	0,00005	1	3722
Gini - Council election	0,26	0,13	0	1	3722
Political hegemony			0	1	3722
Absolute political hegemony			0	1	3722
<b>Control Variables</b>					
Population	44295,16	270330	931	7878783	3722
Rurality rate	56,74	23,92	0,09	98,3	3722
Citizen participation	63,44	10,65	11,91	91,97	3722
Political alignment			0	2	3722
Incidence of armed conflict	1,8	3,07	0	61,29	3722
Night-time lights	1362,01	2659,78	0	41333,5	3722
Education quality (Saber-Pro score)	47,7	3,2	34	62,1	3722
Royalties per-capita (COP 2015)	95602,88	381896	0	8952188	3722
National Transfers per-capita (COP 2015)	493814,8	272408,4	79625,7	4315496	3722

Source: Authors elaboration

## 5. EMPIRICAL RESULTS

Results from estimating (2) for variation of the fiscal performance index (FPI) in a data panel model for the period 2000-2015 are given in table 2. The estimates from column I to IX use a different variable of political competition, but use the same control variables, both sets of variables explained in the previous section. In addition, table 3 presents the results of estimating the effect of political competition on the six variables that make up the fiscal performance index.

### Dependent variable: Variation of the Fiscal Performance Index (FPI)

The first factor to note from table 2 is that the political competition measured by the participation and concentration of the votes in the elections for mayor does not have a significant effect on the variation of fiscal performance during the period of government of the elected mayor. However, when evaluating political competition through the concentration of votes in the municipal council elections based on HH Index and the Gini coefficient, was found that a higher concentration of votes (less competition) has a negative and significant effect on the variation of fiscal performance.

Table 2. Fiscal Performance Index variation and Political competition.

Independent Variable	$\Delta$ Fiscal Performance Index								
	I	II	III	IV	V	VI	VII	VIII	IX
Votes of the mayor (%)	0,03687								
Difference between option 1 and 2 (%)		-0,0011							
HHI - Mayor election			0,03208						
Gini - Mayor election				-3,16865					
Share Council of the mayor's party					-0,02782				
HHI - Council election						-0,07408**			
Gini - Council election							-7,14297*		
Political Hegemony								0,21065	
Absolute Political Hegemony									-1,65144
Fiscal Performance Index (Baseline)	-0,62838***	-0,62969***	-0,62812***	-0,65101***	-0,63248***	-0,63851***	-0,63425***	-0,62980***	-0,63202***
Citizen Participation	-0,08635	-0,10365	-0,08975	-0,13645*	-0,11063	-0,12442	-0,09168***	-0,102	-0,11164
Education Quality (Saber-Pro Score)	0,37096	0,37981	0,37013	0,39488	0,37328	0,35353	0,42713*	0,38134	0,36453
Rurality Rate	-1,53003***	-1,52305***	-1,53181***	-1,58737***	-1,48613***	-1,38538***	-1,45026***	-1,52415***	-1,46399***
Political Alignment	-1,40690*	-1,37272*	-1,39798*	-1,26968*	-1,05217	-1,08016	-0,57184	-1,41375*	-1,17966
Incidence of armed conflict	-0,48923**	-0,48337**	-0,48972**	-0,52487***	-0,48349**	-0,43736**	-0,37903*	-0,48215**	-0,47634**
Night-time lights (ln)	1,97527*	1,95898*	1,97821*	2,08115*	1,91106*	1,81490*	2,04007*	1,96279*	1,88318*
Population (ln)	13,81685**	13,86563**	13,82030**	15,18100**	13,63057**	12,13675*	12,85919*	13,87359**	13,50373**
Royalties per-capita (COP 2015)	-0,00000	-0,00000	-0,00000	-0,00000	-0,00000	-0,00000	-0,00000	-0,00000	-0,00000
National transfers per-capita (COP 2015)	0,00001*	0,00001*	0,00001*	0,00001**	0,00001*	0,00001*	0,00001**	0,00001*	0,00001*
Constant	-28,09011	-26,22735	-27,28799	-32,57566	-23,88674	-10,7207	-23,23049	-26,57246	-23,76102
N	3722	3722	3722	3722	3722	3722	3722	3722	3722
R <sup>2</sup>	0,08292	0,0824	0,08276	0,08973	0,08332	0,0852	0,07566	0,08243	0,08353

Source: Authors elaboration

Furthermore, share of the mayor's party in the total number of seats in the council does not have a significant effect in the variation of the fiscal performance. However, when

evaluating the effect of political alignment, that is, of the relationship between the mayor and the leaders of higher levels of government, a significant and negative effect on performance was found in most of the estimates made.

Turning to the control variables, a number of observations can be made. First, the level of fiscal performance before the beginning of the period of the elected mayor affects negatively and significantly the variation of the fiscal performance of the municipalities of Colombia. So the higher the rate of fiscal performance, the smaller the FPI variation a government can achieve.

Second, when studying the effect of demographic variables such as population and rurality rate in the variation of fiscal performance, is identified that both variables are significant; and as expected, the population has a positive effect and the rurality rate has a negative effect.

Third, the incidence of violence in Colombia's municipalities has a negative and significant effect on fiscal performance behavior. This effect was expected due to the additional costs that a municipality may have with the incidence of the conflict, and its implications for social and administrative settings.

Fourth, the effect of the magnitude of the resources received by local governments from central government is not clear from the variables used. On the one hand, the effect of royalties per-capita is not significant. On the other hand, the effect of national transfers per-capita is significant but its magnitude is low.

Fifth, an unexpected result and contrary to the evidence in the bulk of the literature is the non-significant effect of educational achievement, because citizens with higher education have more capacity and willingness to monitor state official to efficiently provide public services. In the same sense, a significant effect of citizen participation in the variation of fiscal performance was not found.

### **Dependent variables: Variation of the categories of the FPI**

In order to estimate the effect of political competition on the behavior of each of the categories that make up the fiscal performance index during a period of government, a panel data model with fixed effects is also used. Likewise, the set of political competence variables and control variables are used. However, table 3 shows exclusively the effect of the competition variables.

The results show that the political competition variables significantly affect two of the six categories that make up the fiscal performance index. These categories are the generation of own resources and the participation of transfers in the total income of the municipality; variables that indicate how dependent a municipality is on transfers from the central

government, since to the extent that the generation of own resources is greater, its dependence on transfers is less. Therefore, it is not counterintuitive that political competition is significantly related to both variables.

Table 3. Fiscal Performance Index variation and Political competition.

Independent variables	Categories of FPI: Fixed Effect model						
	$\Delta$ Fiscal Performance Index	$\Delta$ Self-financing Operation Cost	$\Delta$ Debt Service	$\Delta$ Transfers	$\Delta$ Own Resource	$\Delta$ Investment Magnitude	$\Delta$ Saving Capacity
Votes of the mayor (%)	0,037	-0,061	-9,29e07	0,002	-0,59	-0,06	-20,24
Difference between option 1 and 2 (%)	-0,001	-0,03	-1,05e07	0,012	0,29	-0,02	-17,12
HHI - Mayor election	0,032	-0,051	-1,19e08**	-0,002	-1,32*	-0,063	-9,13
Gini - Mayor election	-3,169	-31,15	-8,11e07	6,73	158,08***	-23,29	-1973,24
Share Council of the mayor's party	-0,028	0,045	-2,20e07	0,08**	-0,66	0,03	-9,59
HHI - Council election	-0,07408**	0,11	-2,88e07	0,17***	-2,41***	0,05	35,38
Gini - Council election	-7,14297*	14,12*	-3,69e09	14,85**	-189,44***	7,94	-10431,79
Political Hegemony	0,211	-0,89	-1,91e08	3,49**	2,66	-0,68	-907,24
Absolute Political Hegemony	-1,651	2,50	-1,79e09	4,70**	-76,57***	1,97	238,94

Source: Authors elaboration

Specifically, results show that political concentration has a positive effect in dependence on transfers, while this setting has a negative effect in the generation of own resources. From the above, it can be inferred that a large part of the effect that political competition has on the behavior of fiscal performance, are addressed based on the effect presented by a competitive scenario in these two variables. Which in turn demonstrates that the political power limits the improvement in the fiscal performance of the municipalities, as it becomes the perfect scenario to reduce the effort of the current governors to improve their results, which can result in the so-called fiscal laziness.

## 6. CONCLUSIONS

This paper explores the effect of political competition in fiscal performance in Colombian municipalities, analyzing the four local government periods from 2000 to 2015, using a fixed effect panel data setting. Our result pointed a negative effect of political concentration, in general fiscal performance measurement through variations in the Fiscal Performed Index (FPI) and own-resource generation, making municipalities more dependent of national transfer. These findings are according to efficient effect exposed by literature of political competition and government performance.

Despite the large number of electoral results variables used as proxy of political competition, only the variables associated with seat distribution in the council are statistically significant to explain the variations of general performance (FPI). Municipalities with high levels of political concentration, measurement through HH index and Gini coefficient for the seats of the council across political parties, shown worst performance in terms of change in its fiscal index than municipalities with less concentration. Levels of political competition related

to the mayor election do not affect the dynamic of general fiscal performance (FPI), even the share of mayor party only result relevant when this reach the absolute majority.

Individual analysis of the six categories of fiscal performance evaluated by central government in Colombia shown how the effect of political competition takes place through the fiscal effort of local government. Within the set of variables analyzed, only own resource and transfer-dependence variable are affected by level of political competition, both council and mayor competition. Local governments formed in political environment with high levels of concentration, and consequently less competition, shown worst performance in terms of increase of own-resource funding, making more dependent of transference.

Relevance of council representation respect mayor competition emphasizes the key role played by this institution in local administration. Despite the presidential tradition in Colombia, and its extrapolation at municipal level, fragmentation of political representation in the council is the main determinant of fiscal performance of local administration.

According with our result, political environments characterized by high levels of concentration, affected fiscal performance of local governments through fiscal effort. These results could be interpreted as representation issue. According to agency theory, political party represent the preferences of interest group in the society respect to generation of public goods. Consequently, lack of representation could be diminishing the pressure for public goods perceived by rulers, shrinking the incentives to increase the municipal revenue through local sources. Nevertheless, the causes behind fiscal effort are beyond of scope of this paper, consequently more research about interaction between political environment and fiscal effort in developing societies setting is needed in the future.

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## APPENDIX

Appendix 1: Unit root test in Fiscal Performance Index (FPI)

Method	LEVELS			VARIATIONS ( $\Delta$ )		
	Statistic	z	p-value	Statistic	z	p-value
Harris-Tzavalis (rho)	0,594	10,06	1,0000	-0,44	-43,99	0,0000
Breitung (lambda)	16,36		1,0000	-13,22		0,0000

H0: All panel contain unit roots

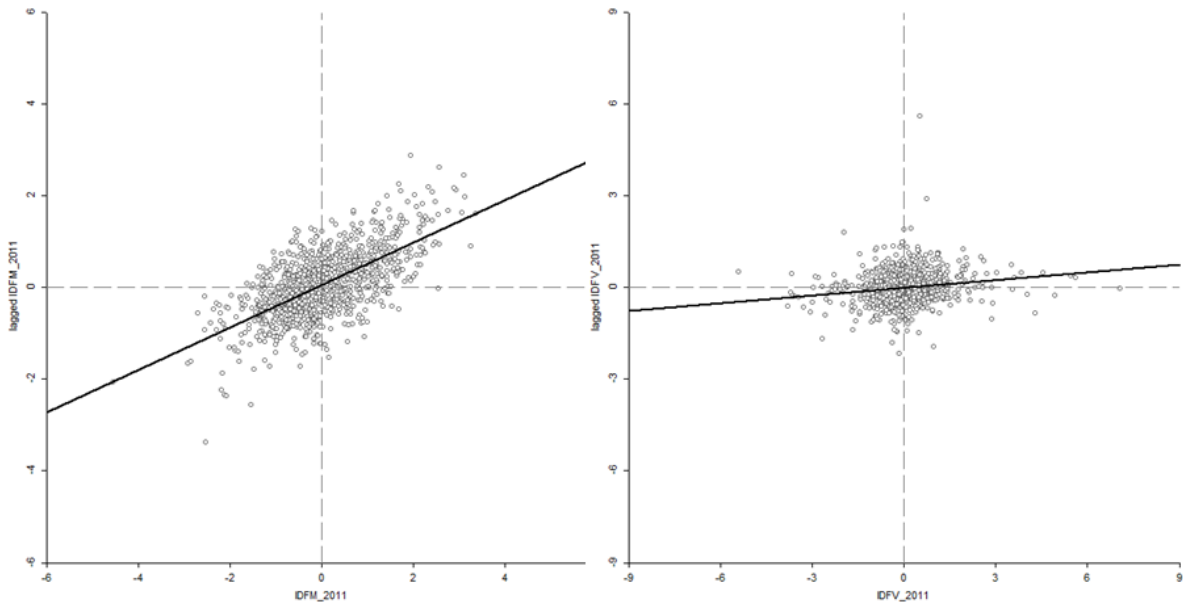
Ha: At least one panel is stationary

Appendix 2: Spatial dependence of Fiscal Performance Index (FPI)

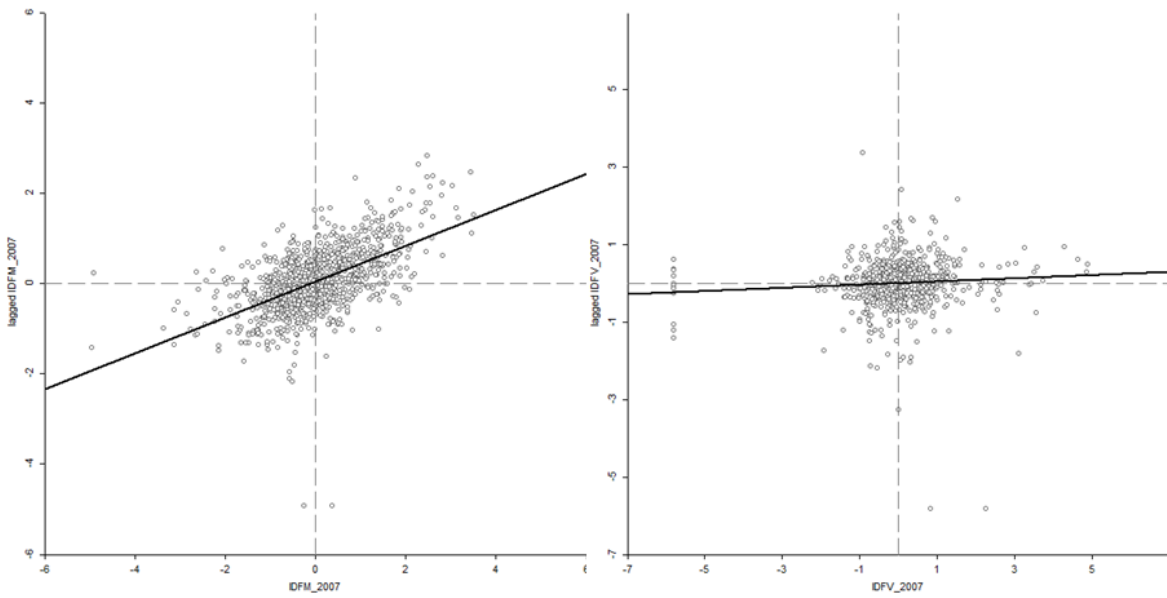
Statistic	Year	FPI (LEVEL)	FPI ( $\Delta$ )
MORAN I.	2000	0,34	0,04
	2003	0,35	0,004
	2007	0,39	0,04
	2011	0,46	0,06

Source: Authors elaboration

Moran scatter plot 2011 (levels vs variations)

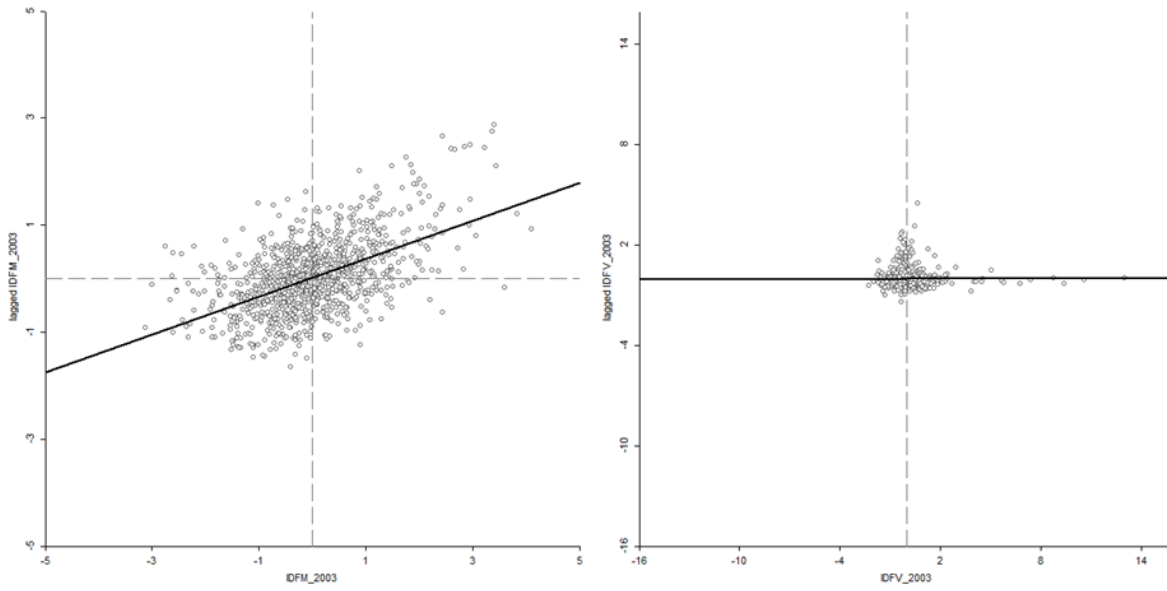


Moran scatter plot 2007 (levels vs variations)

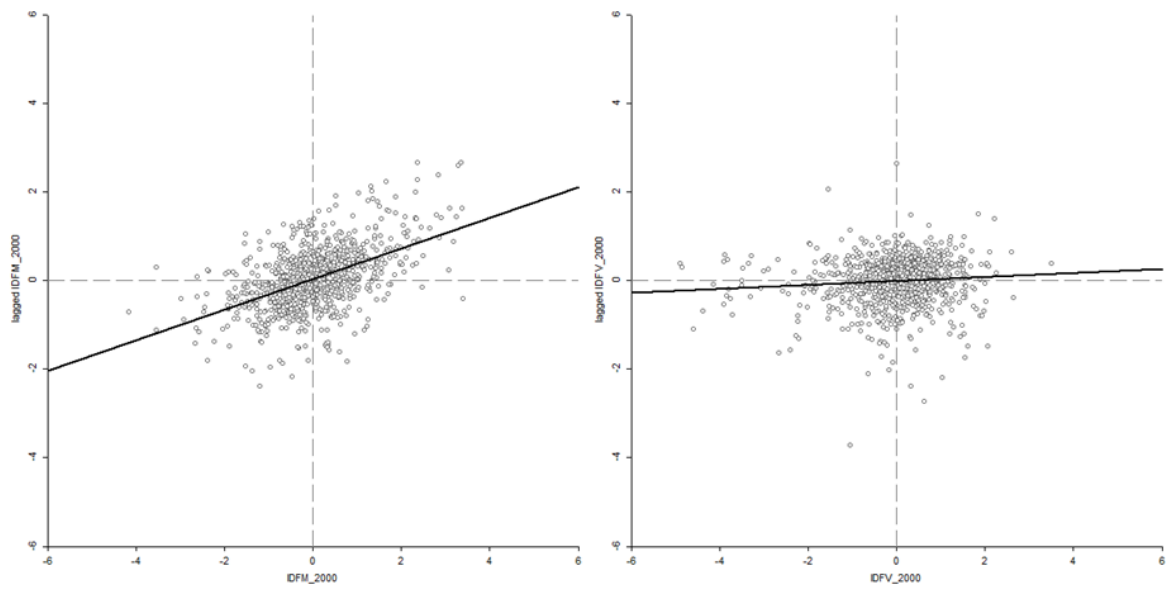


Source: Authors elaboration

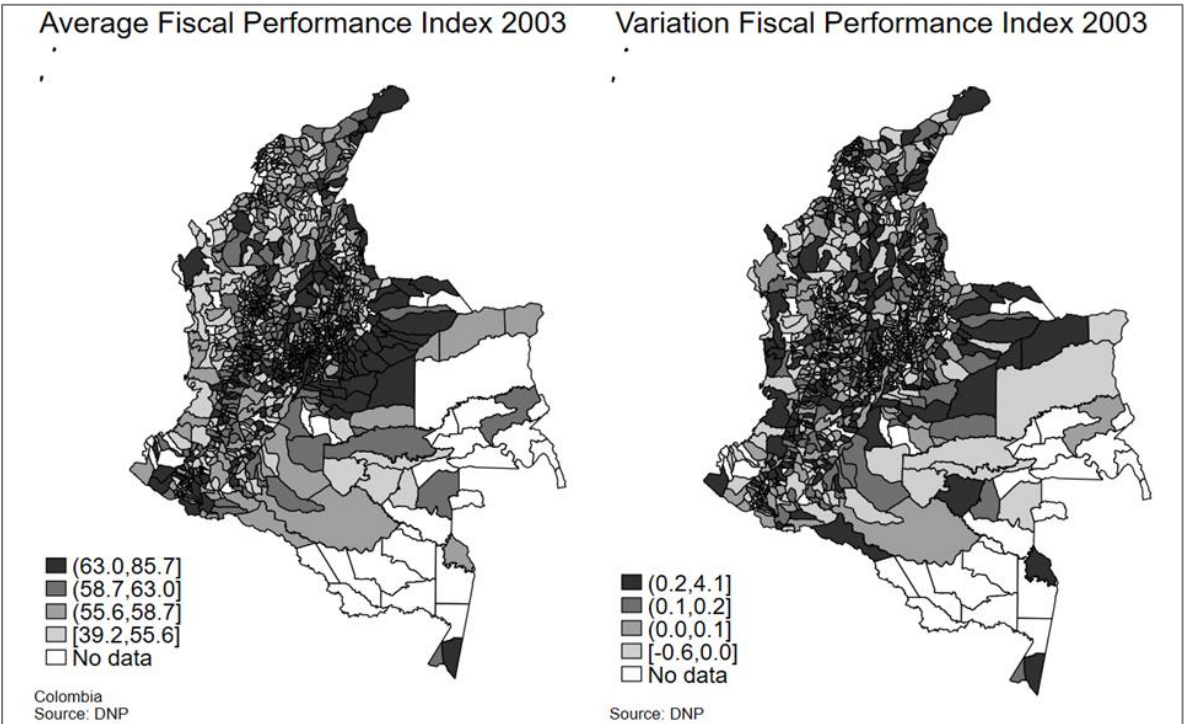
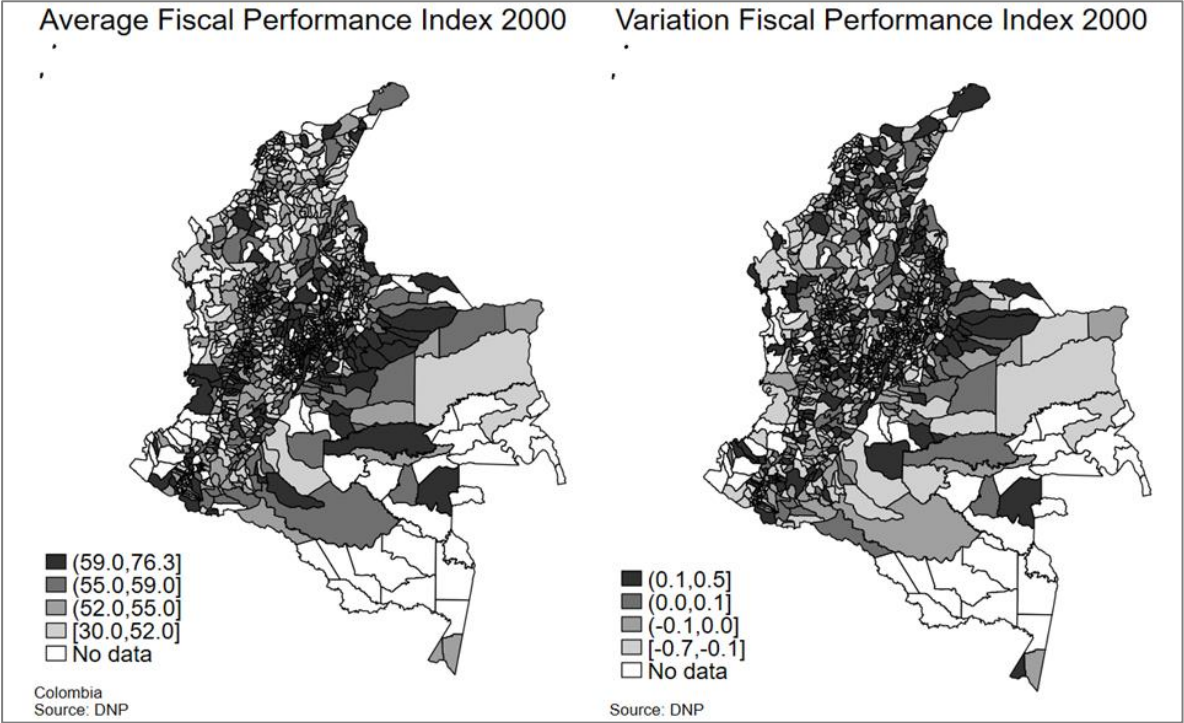
Moran scatter plot 2003 (levels vs variations)



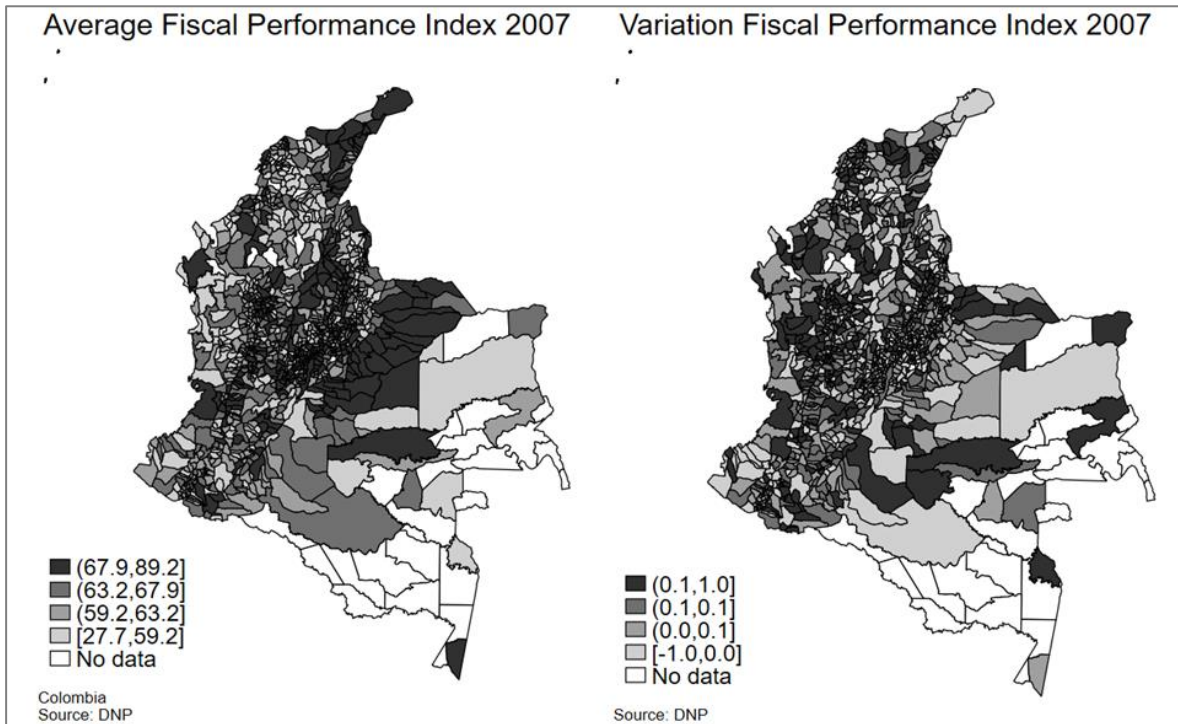
Moran scatter plot 2000 (levels vs variations)



Source: Authors elaboration



Source: Authors elaboration



Source: Authors elaboration

### Appendix 3: Fiscal Performance Index categories

- Self-financing operation cost  
 $(\text{Operation Cost} / \text{Free destination budget}) * 100$
- Debt services  
 $(\text{Debt Services} / \text{Disponible Income}) * 100$
- Dependence on transfers  
 $(\text{National Transfer} / \text{Total Income}) * 100$
- Own resource  
 $(\text{Tax Income} / \text{Current Income}) * 100$
- Investment magnitude  
 $(\text{Investment} / \text{Current Income}) * 100$
- Saving capacity  
 $(\text{Current Saving} / \text{Current Income}) * 100$