

Three essays on local government performance and political institutions in Colombia



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Declarations

No part of this thesis has been submitted for another degree.

All chapters are exclusively mine.

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Summary

The process of decentralisation in many countries sought to empower local governments as part of a strategy to build state capacity, to reduce the distance between governments and their citizens, and to ensure increases in public goods provision. Although some countries successfully granted administrative and fiscal autonomy to subnational governments, political autonomy, especially competitive elections of mayors and councils, remains a major challenge, particularly in democracies of developing countries.

How do political conditions affect the economic performance of devolved local governments? This thesis revisits the theoretical debates and provides empirical testing on the effects of executive support in legislatures, term limits, and perceptions of performance and approval as determinants of different measures of local government performance.

Colombia, one of the oldest democracies in Latin America, established political and fiscal autonomy for municipal governments in the nineties and provides a relevant testbed for these relationships, with detailed election records, administrative data on public goods provision and its expenditures, and anticorruption audits in 1,122 municipalities. Survey data on citizens' perceptions of their government is also available for some major cities. Findings in Chapter 1 suggest that for municipal governments in Colombia a larger opposition in councils improves fiscal discipline and cost efficiency in public education provision. Chapter 2 finds that increasing municipal council re-election rates does not affect corruption at the local level. Lastly, the analysis of citizens' perceptions in Chapter 3 indicates that tax morale is positively affected by approval and performance of mayors in Bogotá.

Contents

Introduction	1
Chapter 1. Political alignment and fiscal performance: Evidence from local governments in Colombia.....	12
1.1 Introduction.....	13
1.2 The impact of executive majorities on fiscal performance.....	15
1.2.1 Party alignment and executive performance	15
1.2.2 Relationship with the empirical literature.....	17
1.3 Background and empirical strategy	20
1.3.1 Local governments and fiscal responsibilities	20
1.3.2 Data and descriptive statistics	21
1.3.3 General overview of the data	23
1.3.4 Empirical strategy	27
1.4 Empirical findings	28
1.4.1 Fiscal discipline	28
1.4.2 Cost efficiency	29
1.5 Conclusions	30
1.6 References	33
A.1 Appendix	39
A.1.1 Fiscal Performance Index.....	39
A.1.2 Cost Efficiency Functions	42
A.1.3 Regression Tables Fiscal Discipline.....	45
A.1.4 Regression Tables Cost efficiency in education.....	46
Chapter 2: Re-election and corruption: an analysis of local politics in Colombia	47
2.1 Introduction.....	48
2.2 Conceptual framework: theory and evidence	51
2.2.1 Theory	51
2.3 Institutional background and empirical strategy	57
2.3.1 Background	57
2.3.2 Data	59

2.3.3 Empirical strategy	62
2.4 Results	62
2.4.1 Robustness checks.....	64
2.5 Conclusions	65
2.6 References	68
A.2 Appendix	77
A.2.1 Corruption records.....	77
A.2.2 Tests for randomness in the sample	77
Chapter 3: Tax morale and government approval: An analysis of citizens' attitudes in Bogotá	79
3.1 Introduction.....	80
3.2 Tax morale: coercion or cooperation?.....	82
3.2.1 Citizens' perceptions and tax morale: some empirical findings	83
3.3 Citizen perception of the city government of Bogotá.....	85
3.3.1 Data and methodology.....	85
3.3.2 Empirical Model	92
3.4 Findings	92
3.4.1 Tax morale per government period and individual tax morale.....	95
3.5 Conclusions	96
3.6 References	99
A.3 Appendix	103
A.3.1 Description of variables.....	103
A.3.2 PCA for civic attitudes index.....	104
A.3.3 Estimation results for approval ratings	105
A.3.4 Estimation Results for perceived performance.....	106
A.3.5 Mayors' Approval Ratings on Individual Tax Morale	107
A.3.6 Perception of Mayors' performance on Individual Tax Morale.....	108
A.3.7 Analysis per government period: Approval	109
A.3.8 Analysis per government period: Perceived performance.....	110
Conclusions	111

List of Tables

1.1 Mayor's vote share ranges per period of government	24
1.2 Percentages of seat shares of mayor's party in council.....	25
1.3 Mean control variables	27
A.1.1 Categories for the Fiscal Performance Index	39
A.1.2 Descriptive statistics	42
A.1.3 Estimations of cost efficiency in education.....	43
A.1.4 Estimations for fiscal discipline.....	45
A.1.5 Estimations of cost efficiency	46
2.1. Descriptive statistics of re-election by gender	62
A.2.1 Origin of the corruption records in the sample.....	77
A.2.2 Tests for randomness in the sample	77
A.2.3 Estimations results for re-election and corruption.....	78
A.2.4 Estimations results for re-election and corruption.....	78
A.3.1 Variables included in the model and survey questions.....	103
A.3.2 Mayors' Approval Ratings and Tax Morale	105
A.3.3 Mayors' performance on Tax Morale.....	106
A.3.4 Mayors' Approval Ratings on Individual Tax Morale	107
A.3.5 Perception of Mayors' performance on Individual Tax Morale	108
A.3.6 Mayors' Approval Ratings on tax morale per government period	109
A.3.7 Perception of Mayors' performance on tax morale per government period	110

List of Figures

1.1 Distribution of fiscal performance measures.....	23
1.2 Education cost efficiency 2003–2011	24
1.3 Council composition and mayor’s vote in elections	26
1.4 Fiscal discipline estimates.....	29
1.5 Cost efficiency estimates.....	30
A.1.1 Additional kernel densities.....	44
2.1 Map of corruption costs per capita	60
2.2 Share of re-elected candidates per municipal councils	61
2.3. Re-election and corruption estimates.....	63
2.4. Re-elected for a second time and corruption estimates.....	64
2.5. Re-election and corruption estimates (CGR only)	65
3.1 Individual and Collective tax morale	87
3.2 Approval rates per mayor during the period of government	88
3.3 Mayors’ perceived performance during the period of government	89
3.4 Civic values questions 2001–2015.....	90
3.5 Time trends in tax morale, mayor performance and approval.....	91
3.6 Odds ratio estimates.....	93
3.7 Odds ratios for approval ratings for each mayor	95
3.8 Odds ratios for perceived performance for each mayor	96
A.3.1 Civic index and components	104

Introduction

Scholars in the social sciences have studied the determinants of government performance for centuries. Despite classical authors in political science and economics including Smith, Hobbes, Rousseau, and Schumpeter have analysed government intervention, their approach in addressing the question of why some governments achieve better results in economic development has been considerably different¹. Political scientists stress the importance of structural factors and how they shape the incentives faced by political actors. They analyse elements such as party competition (Sørensen, 2014), electoral systems (Chang and Golden, 2007), political trust (Abramson and Finifter, 1981), and accountability (Alt et al., 2011) among others. Economists build upon assumptions of cost-benefit analysis and maximisation of private benefit; examples include the individual expected utility for politicians and voters (Besley and Coate, 1997) and the optimal amounts of effort to achieve public good provisions (Lizzeri and Perisco, 1998) to mention a few. These studies aim to explain the behaviour of public officials and politicians, with predictable outcomes of rational calculations (Arrow, 1951; Barro, 1973; Besley and Stephen, 1998).

Both perspectives have contributed to identifying the determinants of government performance, yet their views provide only partial answers (Atkinson and Stiglitz, 1980). In this debate, authors of the new institutionalism argue that institutions² play a major role in solving collective action problems and creating social cooperation equilibriums (Hardin, 1971; Ostrom, 2000; Przeworski, 2004). Following this argument, a group of scholars working in comparative

¹ The political economy addresses this debate by relating the different types of actors - the Homo economicus, Homo sociologicus and Zoon Politikon - as parts of a whole body. The Homo Economicus and Homo sociologicus refer to different ways of understanding human actions. The first refers to an instrumental-rational individual that seeks to maximise her utility according to her preferences. The latter experiences transformations based on social life; thus, her behaviour will be subject to personal conditions such as education, occupation, and social status. Finally, the Zoon Politikon relates to the intrinsic motivations of human beings to have civic actions as a strategy to live in a society (Heap, 1992, pp. 62-63).

² There is no consensus on the definition of institutions as the concept presents several nuances. Authors have studied institutions solving problems such as social life dilemmas (Schotter, 1990), and market failures (Boudon, 1996) as an engine to work collectively (Elster, 1985). But the most common definition in the literature is from North (1991, p. 97) that defines them as "humanly devised constraints that structure political, economic and social interaction".

historical paths to development, state-building, and democracy, focus on the study of political institutions (Rothstein, 1996) and several authors such as Weingast (1995) and North et al. (2000) recognise a relationship between political institutions and economic outcomes. For instance, theorists such as Rawls (1993) emphasise the role of political institutions³ in achieving consensus among divergent views powering social progress. In the same line, Elster (1987) argues that the dynamic nature of political institutions creates collective identity, belonging, trust, and solidarity by influencing various groups in the society including political actors, civil society and interest groups that shape social and economic conditions. A contribution from Putnam (1993) validates that the civic spirit expressed in a dense organisational network of civil society explains why some regions have enjoyed higher economic growth than others.

The literature claiming that political institutions matter in explaining development began to emerge in the fifties, but it was only in the eighties when studies of comparative public policy confirmed empirically the actual role of political institutions. For example, the competitiveness of parties in elections helps to understand government fiscal outcomes (Aidt and Eterovic, 2011) or the administrative capabilities of government in several developed countries, including Sweden, Britain, and the United States, are crucial for explaining the distinct paths of social and labour market policies undertaken as responses to the Great Depression (Weir and Skocpol, 1985).

The failure of political institutions has serious implications for economic and social welfare. For instance, information asymmetries can create comparative advantages and monopoly power for specific groups, thereby weakening accountability (Bosch and Suarez, 2015). Based on this idea, Motinola and Jackman (2002) find that competitive, multi-party elections foster lower levels of corruption. Citizens, on the other hand, can perceive that their government cannot be trusted, finding ways to disconnect via abstentionism in elections and less interest to engage in cooperation for the common good (Braithwaite and Levi, 1998).

³ According to Levi (1990, p. 405) political institutions can be defined as “formal arrangements for aggregating individuals and regulating their behaviour through the use of explicit rules and decision processes enforced by an actor or set of actors formally recognised and possessing such power”.

As part of the state-building process, some national governments decided to initiate processes of decentralisation, seeking to expand state capacity and enhance economic development at the local level. The process aimed to empower politicians at the local level, making governments able to attend to and cater for local preferences and produce better results in the provision of public goods and services to meet their constituents' needs (Oates, 1972). For instance, governments in Latin America enhanced subnational layers of power, pushed reforms in the policymaking process, and carried out administrative and public finance reforms in the nineties. Regarding political decentralisation, many countries established elections for mayors and councillors that aimed to boost accountability since the rent seeking activities of politicians would then fall under tighter control (Lockwood, 2006).

As other economic and social reform progresses, decentralisation occurs sequentially. Changes in the fiscal, administrative, and political autonomy define the evolution of the intergovernmental (national versus local) balance of power. Even if countries establish local elections, actual political autonomy requires building the institutions of representative democracy, including a plurality of parties in representative bodies, accountability agencies, and citizens' compliance with rules. For many countries, actual political autonomy is substantially incomplete.

Among Latin American countries, Colombia has enjoyed continuous macroeconomic stability allowing its economy to have a sustained growth path (Luzardo, 2019). The decentralisation process started in the seventies with the transfer of additional resources to subnational governments and continued during the eighties when reforms established the popular election of governors and local administrative boards. Besides, the constitutional reform of 1991 assigned responsibilities to municipalities in the planning, financing and provision of public goods and increased government intervention in local economic and social issues (Faguet, 2008; Lozano et al., 2015; Chamorro and Urrea, 2016).

However, economic development remains one of the major challenges: progress in the provision of public goods and services, and poverty reduction are still lacking (Alesina, 2005). For instance, in 2019, around 350 municipalities had less than 25% of coverage in water and

sanitation; the situation in other public goods such as education is considerably better, yet there is still not full public education coverage in all the municipalities (Corredor et al., 2019).

If Colombia has experienced a considerable economic expansion, why has it not achieved better results in terms of development? Scholars studying Colombia address this question from several angles, including violence (Sanchez and Diaz, 2005; Alvarez and Rettberg, 2008; Cotte and Martinez, 2019), land tenure and distribution (Carlyle, 1961; Bejarano, 1998; Thomson, 2011) or drug trafficking (Garcia, 2005; Dion and Russler, 2008).

A growing body of literature has also identified that failures in political institutions affect economic development in the country, distorting the role of governments in aspects such as correcting market failures, distributing wealth, and providing public goods and services. Thus, divergences in local development paths are explained by differences in the evolution of political institutions at the local level. When studying economic development in Colombia, Acemoglu et al. (2007) find that political inequality understood as collective choices (voting outcomes), reflects the interests of a subsection of the society, with privileges for private gains and against the use of public resources for the common good. Therefore, institutional conditions such as political machines, lack of transparency in electoral processes and accountability in the office can generate an inefficient use of public monies, halting development. In this context, this thesis aims to understand the political causes of development or its absence. For this purpose, I focused on the decentralisation process given that it has been one of the main mechanisms from a legal and practical perspective to achieve development goals in countries across the world.

Colombia, as many developing countries, has made significant progress in recent decades to produce statistical data to understand and measure economic development and to build state capacity. However, there are important data limitations for retrospective analysis, for instance, there are not time series at the municipal level which precludes understanding the paths of economic development before and after decentralisation. As a result, this thesis uses proxy variables such as public good provision, or local public spending that provides initial insights on development levels. Within this framework, this thesis contributes to the literature on the

political economy by quantitatively assessing the effect of different political institutions on the performance of local governments. The three chapters of the thesis seek to understand how institutions act as constraints to local governments, delay the achievement of political autonomy, and influence economic development.

Across the chapters, the analysis adapts theories originally designed to understand national-level politics to a subnational setting. The historical roots of the current political system imply that these theories are suitable, from a theoretical perspective, to analyse the local setting. More precisely, the rules of the game at the subnational level enacted in the Colombian Constitution of 1991 have a similar structure than those for the national level. The constitution expanded the presidentialism logic to local authorities, delegating authority to the executive represented in governors and mayors. It also enacted the conformation of elected councils that operate as legislatures at the municipal level. Councils are empowered to balance the executive with the approval of government budgets, policymaking sanctioned in development plans, as well as sessions of accountability to ensure transparency of the executive's spending. In that sense, potential differences at the moment of applying the national level theories will arise as a result of difference in budgets' size or magnitude of the policies implemented, however, the incentives and constraints that politicians face are based on a similar type of rules.

Chapter 1 contributes to the debate of two competing theoretical views regarding governance and majorities of the party's executive in legislatures. On the one hand, one stance claims that there is a negative impact of bigger opposition for governance. A second stance highlights the importance of check and balances as necessary for good government economic performance. To contribute to this debate, I study the effects of the mayors' party majorities in councils on fiscal discipline and cost efficiency in public goods provision by local governments. My main findings show that a larger opposition in councils improves both measures of fiscal performance. However, statistical significance remains a challenge. A negative effect of majorities on spending performance carries implications for local development in developing countries, in which there are both weak electoral competitiveness and high variation in the quality of democratic institutions at the subnational level. The results partially confirm that the concentration of power adversely affects the efficient provision of public goods at local level and that it is

necessary to guarantee a minimum level of oversight. More specifically, a bigger opposition will contribute to achieve accountability and force the executive to deliver fiscal discipline and efficiency in managing public resources.

Chapter 2 discusses a distinctive theoretical standpoint contesting the idea that political turnover will “clean the house” because of voters’ willingness to choose the best representatives and “take the rascals out”. To do so, the chapter explores the effects of the re-election of council members on corruption in municipal governments. Using the audits of comptrollers at national and territorial level, my findings show there is not a clear relationship between corruption and shares of re-elected council members for Colombia. The case of Colombia illustrates that political turnover is not necessarily as effective as predicted in theory, and that it is important to look carefully at the implications of re-election in each setting and to consider potential impacts of this electoral rule on accountability and transparency of the democratic process.

From a theoretical perspective, Chapter 3 examines the limitations of the seminal contribution of Allingham and Sandmo (1972), considered the foundation of tax theory, by looking to the problem beyond the *homo economicus* rationale. The chapter stands on the idea that intrinsic motivations such as perceptions on performance and approval are also relevant to understand citizen’s incentives to comply with tax payments. In this regard, I analyse how citizens’ perceptions of approval and perceived performance of public resources management explain citizens’ intrinsic willingness to pay taxes: tax morale (Alm and Torgler, 2011). For the case of Bogotá, my results show that both, mayors’ approval ratings and perceived performance, present a significant positive correlation with tax morale. The chapter contributes to the literature by proposing and showing empirically that a broader framework to understand compliance is not only valid but necessary. Under this framework one has to consider that the decision to pay taxes transcends the monetary dimension and entails also a political statement in the citizen-government relationship.

The fact that this thesis is based on the local environment in Colombia is of interest for three reasons. First, political institutions may vary dramatically within each country and especially

so in Colombia. Therefore, most cross-country studies capturing political institutions are subject to broad simplifications and assumptions to include a large number of countries in their samples.⁴ Second, the thesis provides an interesting testbed for the relationship of political institutions and economic performance as the country provides different levels of development across municipalities, and an uninterrupted time series of electoral results for mayors and council members amid different levels of intensity of the internal civil conflict over three decades. Third, the consolidation of a rich variety of datasets from several government bodies that capture government performance and political institutions provides an opportunity to study different relationships that take place at the local level. These circumstances allowed the construction of novel measures, e.g., corruption or efficiency, providing an original contribution to the study of Colombian political institutions that could prove useful to analyse other cases in developing countries with similar institutional settings.

⁴ For more details of the advantages of the use of subnational units for comparative political analysis see Snyder (2001).

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Chapter 1. Political alignment and fiscal performance: Evidence from local governments in Colombia

Abstract

This paper studies the effect of mayoral majorities in councils on fiscal discipline and on cost efficiency in public goods provision by local governments. I provide empirical evidence based on data from 1,122 municipal governments in Colombia spanning a 12-year period. My estimates indicate that a larger opposition in councils improves fiscal discipline and cost efficiency in public education. However, statistical significance remains a challenge. A negative effect of majorities on spending performance carries implications for local development in developing countries, in which there is weak electoral competitiveness and high variation in the quality of democratic institutions at the subnational level. Moreover, this paper contributes to the debate on government devolution, showing that improving local public goods provision could benefit from strengthening competitiveness in elections.

Keywords: subnational politics, public spending, Colombia.

Political alignment and fiscal performance: Evidence from local governments in Colombia

“Without open electoral competition between political parties there is no democracy.”

Nohlen (1978)

1.1 Introduction

In the aftermath of the 2008 Great Recession, governments worldwide faced tight budgets. Large debts forced administrations to simultaneously slash expenditures and achieve policy goals to avoid political instability (Heckman et al., 2010; Alesina and Perotti, 1995). In Latin America, the fall in commodity prices caused further reductions in governments’ revenues and authorities had to adjust to new stringent budget conditions. When governments run out of money, they are pressed to improve fiscal performance, that is, they must either increase the efficiency of public funds (achieve the same public good provision at a lower cost), or improve fiscal discipline (balancing revenues, debt, and spending).

To understand differences in fiscal performance is not only necessary to comprehend the effect of economic factors but also the inextricable relation between economics and politics. Scholars have identified that fiscal performance is subject to political conditions, including electoral competition (Boulding and Brown, 2014), single-party majorities or coalitions (Roubini and Sachs, 1989), and constitutional changes (Persson and Tabellini, 2003). Among these elements, executive-legislative alignment appears as one key feature to explain fiscal performance given the prerogatives of legislators to hold governments accountable for their management (Mainwaring, 1999; Cox and Morgenstern, 2002; Siavelis and Morgenstern, 2008; Aleman and Tsebelis, 2016).

However, literature is inconclusive regarding the impact of executive and legislative alignment on governance. Some scholars posit that political alignment is a requirement: executives with scant support face government deadlocks that impact fiscal performance (Ames, 2001; Mainwaring, 1993). Challenging that conventional thinking, authors including Hankla (2013) argue

that legislative fragmentation is essential to guarantee separation of powers and expenditure accountability, inducing better fiscal performance.

Local governments are at the core of this debate because their immediate impact on the well-being of their citizens makes them key in public policy success (Faguet, 2004). Lockwood (2006) suggests that local governments need both fiscal and political autonomy to meet policy goals. In Latin American municipalities, despite budgets still heavily relying on resources transferred from national governments, local governments enjoy some prerogatives for budget allocation and policy orientation under local councils' approval.

Regarding political autonomy, reforms across the region¹ emulated the national government structure at the local level, that is, concentrating power on executives and overshadowing legislative power (Mezey, 1979; Linz and Valenzuela, 1994; Cox and Morgenstern, 2002). However, reforms also pursued an increase in representativeness, establishing mayoral and council elections to make authorities more responsive and stop the plundering of public resources (Geddes, 1994; Ferraz and Finan, 2011). They also emboldened councils as crucial democratic bodies to supervise public resource management and exercise accountability. For instance, a small opposition in Bogotá City council in Colombia was enough to halt the detriment to the city's public treasury² by sacking a corrupt mayor and his accomplices. Nonetheless, much work remains to be done within the fiscal and political dimensions.

Does council structure affect local government's fiscal performance? In this paper, I address this question looking at municipal party composition in Colombia, a South American country with an old democratic tradition. I focus my attention on alignment and the relationship it has with fiscal discipline and efficiency in public education provision. To test this, I examine

¹ In Perú (1980), Colombia (1968), Venezuela (1989) and Bolivia (1994). Many of these decentralisation plans were enshrined in new or recently reformed constitutions, though the actual resources and autonomy ceded to local authorities vary (Fox, 1994; Sabatini, 2003).

² "El carrusel de la contratación" ("contracts carousel") was a massive corruption scandal involving mayor Samuel Moreno in Bogotá in 2010 (See Escallon, 2014)

the impact of executive-legislative alignment on municipal fiscal discipline and efficiency in public goods provision³ in 1,122 Colombian municipalities from 2003 to 2015.

The main argument of the paper is that a mayor's political alignment with a council might distort the checks and balances structure of power, harming fiscal performance. If this argument is correct, it is necessary to promote a significant participation of the opposition that guarantees accountability and transparency of the executive, pressing in this way for better fiscal performance.

The findings suggest that there is a negative albeit not statistically significant relation between the share of seats of the mayor's party in council and fiscal discipline. On average, increasing the number of seats of a mayor's party in councils by 10 percentage points (pp) decreases fiscal discipline scores by 0.04 pp. Regarding cost efficiency, results suggest that, on average, increasing the number of seats of a mayor's party in councils by 10pp reduces cost efficiency scores in education by 0.14pp. If corroborated, my results have important implications for local politics in developing countries, where weak electoral competitiveness and high variation in the quality of democratic institutions have prevented real improvements in economic development.

The paper's outline is as follows. Section 1.2 introduces theoretical foundations, hypotheses, and relevant literature. Then, Section 1.3 presents the method and data sources. Subsequently, Section 1.4 provides a general analysis of the results. Section 1.5 concludes and summarises the main findings.

1.2 The impact of executive majorities on fiscal performance

1.2.1 Party alignment and executive performance

Some scholars in comparative legislative studies posit that the relative size of the president's party in legislatures explains the variation of the executive's performance in policymaking

³ Productively efficient governments can be defined as those that need fewer resources to generate a high level of public goods (Ashworth et al., 2014)

(Mainwaring and Shugart, 1997). Minority executives might cause unreliable coalitions and governance deadlocks, therefore, in the absence of party majorities, the executive relies on coalitions facing many veto players (Bawn and Rosenbluth, 2006; Ames, 2001). The lack of legislative majorities might benefit rent-seeking activities or corrupt practices assuring passage of bills for side payments⁴ (Morgenstern and Nacif, 2002, p. 268). Hence, fragmented political systems could cause short-lived governments as opposed to majoritarian parliamentary or presidential democracies, thereby increasing transaction costs, inducing budget deficits⁵ and depriving public goods provision.

Another group of scholars advocates that legislative opposition is a necessary condition to guarantee the principle of separation of powers (Lizzeri and Perisco, 2001; Persson et al., 1997). Party majorities in legislatures impede diversification of policy preferences and representation, therefore, single-party majorities belittle minor group interests, subordinating participation to political elites' preferences (Golder, 2006). This is especially true for developing countries where patronage structures exist. For instance, Teitelbaum and Thachil (2010) argue that fragmentation is a way to break traditional caste structures, providing space for programmatic politics in Indian states. Hence, the presence of several parties offers an opportunity for more inclusive legislatures and could transform politics into a more horizontal structure.

As O'Donnell (1993) expresses, the political scenario in Latin America, both at national and local levels, contains "several contrasts" between mere delegative democracies and more institutionalised democracies. Despite constitutions provide legislatures check authority over the executive, literature has found that legislative bodies are "reactive" regarding legislative activity (Cox and Morgenstern, 2002), serving as the executive's "rubber-stamp legitimizers" (Mezey, 1979) and with an insignificant role in policymaking (Linz and Valenzuela, 1994; Hellman et al., 2000; De la Garza, 1972).

⁴ Where legislators bid personal interest in exchange for legislative support; these relations are defined as parochial or venal in the sense that they result in legislators bidding for personal interest in exchange for legislative support (Mainwaring, 1993; Jones, 1995; Mainwaring and Shugart, 1997).

⁵ This idea has been empirically tested in several studies including Grilli, Masciandaro and Tabellini (1991), Persson and Tabellini (1999).

The absence of party fragmentation creates incentives for political clienteles, where legislative majorities ally with the executive to extract resources to pay their clientele giving in exchange subservient behaviour. According to Siavelis and Morgenstern (2008, p. 11), extraction is enhanced when members of the majority share the same party as the president. In terms of public policy, Geddes (1994) argues that executives that serve clienteles exhibit worse efficiency in public spending, therefore, majorities create agency losses where few veto players cannot ex-post monitor the provision of public goods.

The dynamics of the executive and legislative powers at the national level are maintained in local politics but have additional challenges, facing dominance of political bosses, and sometimes, non-competitive electoral conditions (Schedler, 2010). In such scenarios, majorities in councils do not reflect a healthy democracy, but the strength of political machines producing and maintaining power in subnational politics. At the local level, a strong system of political parties increases the chances for pluralist as opposed to elitist decision making. However, at the other end of the scale, very fragmented local councils induce frequent changes in governing coalitions, making implementation of long-term policies extremely difficult.

1.2.2 Relationship with the empirical literature

This paper connects two clearly identified empirical lines of work. The first line includes literature interested mainly in political conditions. These authors seek to understand the incentives of political actors and how their actions relate to fiscal outcomes. The second line of empirical research emphasises the measures of fiscal performance. It explores several econometric methods and data sources to understand different government performance measures of budget management and spending efficiency with much less detail on political dynamics. This section provides some of the most relevant contributions of these two lines, as well as some ideas of other relevant variables to consider in order to understand the effect of alignment on fiscal performance.

Authors interested in political conditions have analysed the effect of the number of parties in elections (Aidt and Eterovic, 2011; Ashworth et al., 2014; Boulding and Brown, 2014), polarisation (Sørensen, 2014) and multi-party coalitions (Van den Eeckaut et al., 1993). Most of

the studies find that fragmentation and fiscal performance are positively correlated. For instance, Aidt and Eterovic (2011), analysing a panel of 18 Latin American countries, find that constitutional arrangements that enhance political competition constrain the executive and limits the size of government.

At the local level, some authors test the relationship of expenditures in public goods and party competition. For instance, Ashworth et al. (2014) show that the number of parties competing in local elections affects positively productive efficiency by looking at total expenditures and public goods provided by local governments in Flanders (Belgium). Van den Boulding and Brown (2014) suggest that highly competitive local elections are associated with less social spending in municipalities in Brazil. Besides, Sørensen (2014) states that the lack of party competition reduces efficiency measured with a composite index of spending and outputs of welfare programmes in Norwegian local governments.

Literature emphasising the measurement of fiscal performance studies the effect of a few political variables, such as coalition parties or the monitoring of governments on public funds efficiency. For example, De Borger and Kerstens (1996) analyse the efficiency of local governments in Belgium using two non-parametric and three parametric models of the cost of producing several municipal services. They find that the number of coalition parties has no effect on cost efficiency. Afonso and Fernandes (2008) use Data Envelopment Analysis, a non-parametric technique to study input-output efficiency, and Tobit models to study the determinants of efficiency in Portuguese municipalities. They conclude that the effect on education as a proxy for citizen's ability to monitor governments has a positive effect on local government efficiency.

Literature for the Colombian case has considered different causes for inefficiency. For instance, Castellon (2017) finds that increasing the number of elected representatives in local governments would reduce the total level of public expenditure by improving accountability. However, the author acknowledges that there are other sources for this decrease, such as reductions in total revenues driven by fewer royalties or reductions in central government transfers. Regarding effects in public goods, Martinez (2017) compares the effects of accountability in public

goods provision analysing two different sources of local government revenues: tax and natural resources royalties. Studying exogenous variations in both sources, he concludes that higher local taxes have more noticeable effects in the provision of education, health, and water relative to higher royalties, possibly because of higher mayoral accountability after increases in the tax burden.

Finally, national-local political alignments seem to suggest some important results for Colombia. For example, Bonilla and Higuera (2017) find that politically driven transfers had no impact on local economic development. Regarding decentralisation in Colombia, scholars including Galvis (2014), Barrera and Gaviria (2003) and Cano and Ramirez (2007) have found that, despite the fact the process increased public goods provision, efficiency is far from the level required to improve health and education indicators.

More recently, the debate has shifted to analyse implications of gender in political support and alignments between mayoralties and councils. For instance, Fox and Schuhmann (1999) found that female mayors have greater consideration for budgetary constraints and also for citizen involvement in decision making than male counterparts. Moreover, Holman (2014) found that a female mayor increases both the level of expenditure and the citizen participation in total expenditures for social welfare. Moreover, the interaction of a female mayor and a higher share of female council members has a similar effect on this fiscal expenditure. Other authors look for the effects of female mayors in spending composition (Ferreira, 2014) or efficiency gains (Profeta, 2017).

This paper follows the detailed measurement of the efficiency of public funds of De Borger and Kerstens (1996) and Afonso and Fernandes (2008). However, an important improvement is that it considers a longitudinal dimension by introducing municipality fixed effects instead of relying on cross-sectional data. Additionally, I pay more attention to various measures of the local political process. One important aspect of the paper is that it presents the logic and implications pertinent to the study of local governments in the global south, making it comparable with existing literature for municipal governments in Europe.

1.3 Background and empirical strategy

1.3.1 Local governments and fiscal responsibilities

Since 1992, mayors and municipal councils in Colombia have been popularly elected. Mayors are the head of the public administration and highest planning authority in the municipality. Municipal councils⁶ on the other hand, are political and administrative corporations, empowered to discuss development plans, approve budgets, and hold mayors accountable. The government period is four years. Immediate re-election of mayors is prohibited, while council members can hold office for unlimited periods. Mayors are elected through vote of the citizens dwelling in the municipality according to the “first-past-the-post” principle. Candidates can be nominated by political parties and movements with valid legal status or alternatively by citizen’s groups supporting them with their signatures.

Despite certain fiscal autonomy, local governments remain dependent on purpose-made and heavily scrutinised national budget transfers. There is no discretionary budget authority for mayors because councils have the prerogative to approve income and expenditure reports, annual budgets, and create or change local taxes. The National Constitution of 1991 created an intergovernmental transfer system that is known as the “General Participation System” (SGP in Spanish). It funnels resources through transfers of the central government to the municipal governments⁷ for public spending in health, education, and basic sanitation.

SGP resources finance the payrolls of education and subsidised health insurance and provides subsidies in the water and sanitation service tariffs. Meanwhile, resources known as for General-Purpose that also come from transfers from the central government, can be used to achieve municipal development plan goals and reaffirm the local autonomy. The spending of these

⁶ Regularly composed of not less than 7 and no more than 21 members including the mayor, except in the case of Bogotá (45 council members).

⁷ In Colombia around 70% of the fiscal revenues are collected by the central government and the municipal revenues are highly concentrated in a few municipalities: Bogotá, Medellín, Barranquilla, and Cartagena collect two thirds of municipal revenue (Bonet and Ayala, 2015).

resources is subject to council's approval of the local government budget according to a development plan.

Another source of funds is royalties. This income comes from natural resource extraction of oil and mining. From 1995 to 2010, only territories with direct exploitation of minerals received income from royalties. In 2010 the national government created the National Fund of Royalties expanding the coverage of the funds to all municipalities. Royalties must be invested in tackling inequality and promoting development in sectors such as education, water, science and technology, infrastructure, housing, and agriculture (Cardenas, 2013).

With respect to built-in incentives of performance, the mayors could face prosecution for mismanagement and any spending that breaks the legal dispositions of the National Constitution (article 352) and the Organic Budget Law. The law empowers the General Comptroller of Colombia at the national and local level to supervise, analyse, and identify irregularities in public resources management and prosecute officials according to the evidence of the case investigation.

1.3.2 Data and descriptive statistics

To test the relation between political alignment and fiscal performance, I use data from three different sources. To calculate measures of mayor-council alignment I use electoral results from the National Electoral Authority (Registraduria Nacional) for three government periods: 2004–2007 (elected 26th October 2003), 2008–2011 (elected 28th October 2007) and 2012–2015 (elected 30th October 2011). Regarding fiscal performance, I use government's fiscal discipline and expenditure data⁸ provided by the National Planning Authority (DNP), education output data from DANE (the Colombian statistical authority) and health data from the Ministry of Health and Social Protection.

I calculate measures of fiscal performance for the mid-term years (i.e. years 2005, 2009, 2013), as this avoids potential reverse effects of performance in the election results and allows a two-

⁸ This data contains annual expenditures from 1992 to 2015 in current millions of pesos for 1,094 municipalities in eight categories: education, wages of teachers, school construction and maintenance, health, wages of medical personnel, medical equipment, and hospital construction.

year period for policy implementation. Lastly, the CEDE municipal dataset provides a comprehensive summary of geographical, economic, and social characteristics of Colombian municipalities used as control variables in the models.

The Budget Discipline Index (BDI_{it}) calculated by the DNP provides a general view of fiscal discipline at municipal level for each period of government based on six components: self-finance, debt service, reliance on transfers, own resources generation (taxation capacity), investment magnitude and current savings (creditworthiness). The index provides a score from 0 to 100 to classify municipalities in five financial categories: solvent (80 or more), sustainable (70–80), liable (60–70), at risk (40–60), and impaired (less than 40).⁹

BDI_{it} does not indicate how efficient spending is because of its emphasis on municipal leverage. For this reason, I propose a second variable based on parametric cost function estimates. The basic functional form of each cost function is a quadratic translog as depicted in Equation 1 where $\ln C_{git}$ is the log of reported real¹⁰ cost of public goods g in municipality i at time t , $\ln q_{git}$ is the log of public goods output, ν_{git} is a non-negative cost inefficiency term and η_{git} is a municipal idiosyncratic term. An efficiency index ce_{git} is obtained by adjusting ν_{git} to lie between zero to one where a higher value represents higher efficiency (Kumbhakar et al., 2015).¹¹

$$\ln C_{git} = \beta_0 + \beta_1 \ln q_{git} + \beta_2 (\ln q_{git})^2 + \nu_{git} + \eta_{git} \quad i = 1, \dots, n; \quad t = 1, \dots, T \quad (1)$$

With OLS η_{git} is assumed to be zero, the cost function is deterministic, and the residuals capture the value of inefficiency. To account for idiosyncrasies, a Maximum Likelihood estimation with distributional assumptions for η_{git} and ν_{git} is usually assumed. For this paper, efficiency measures are part of a second-stage estimation of mayor-council relations; therefore, OLS is used at this stage to avoid additional assumptions (See Appendix 1.2).

⁹ The index is based on DNP (2013). For further details on the methodology see Appendix 1.

¹⁰ Real values with 2005 as base year. For other years, the GDP deflator was used.

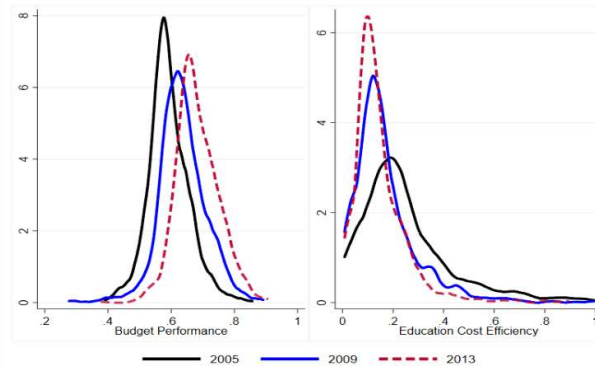
¹¹ To derive efficiency the procedure is as follows: after OLS estimation, residuals are calculated, and their first and last percentile is dropped due to the presence of outliers. Efficiency ce_{git} is calculated as $ce_{git} = \exp\left(-(\nu_{git} - \nu_g^{\min})\right)$ where ν_g^{\min} is the smallest residual (most efficient).

1.3.3 General overview of the data

Local fiscal performance in Colombia

As shown in Figure 1.1, despite Colombian municipalities have been improving in the Budget Discipline Index (BDI) with scores increasing on average from 59.2 in 2005 to 68.24 in 2013, disparities between municipalities have been increasing with standard deviations going from 5.7 in 2005 to 6.4 in 2013. On the other hand, cost efficiency has decreased. Efficiency in education¹² has been decreasing from an average score of 0.11 in 2005 to 0.063 in 2013.

Figure 1.1. Distribution of fiscal performance measures

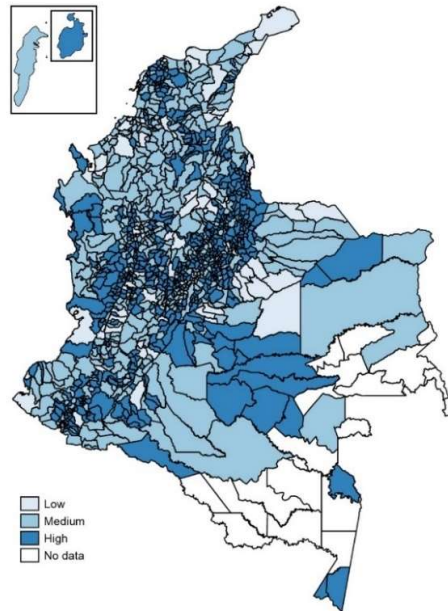


Source: Author's own elaboration

Figure 1.2 presents a map with the average education cost efficiency in municipalities. Relative to the most efficient municipality in providing education, the average municipality is achieving just 37 per cent of the output in education. Municipalities with the largest investments are not necessarily those with the highest levels of efficiency. However, there are some regional disparities, with higher efficiency for municipalities in the Andean region relative to the Caribbean or Orinoquia regions.

¹² A cost efficiency model for health and total efficiency of health and education was also considered. However, I focus only on education and relegate this additional estimation to the appendix (see Table A.1.3 and Figure A.1.1) for three reasons: 1) the sample size in years and municipal coverage is significantly smaller compared to the data in education; 2) with the information available, the cost function is not clearly identified for health provision (significance of the input-cost relation); 3) after the passing of Law 100 of 1993 a great deal of responsibilities for health policy has been given to the central government.

Figure 1.2. Education cost efficiency 2003–2011



Source: Author’s own elaboration

Mayor’s political support

Weaker mayors, less support from councils and an increase in the number of parties represented in councils have been the general trends for Colombian municipalities. As Table 1.1 illustrates, the number of towns with mayor’s vote shares ranging between 50 and 70 percent decreased from 57 per cent in 2003 to 48 per cent in 2011. In the same line, towns with mayor’s vote shares higher than 70 per cent declined from around 8 per cent in 2003 to 2.8 per cent in 2011. Consequently, vote shares between zero and 50 per cent have been increasing.

Table 1.1 Mayor’s vote share ranges per period of government

Ranges	2003	2007	2011
<30%	1.65%	3.74%	2.91%
30–40%	13.45%	18.71%	19.49%
40–50%	20.07%	27.09%	26.77%
50–70%	56.89%	45.89%	48.00%
>70%	7.94%	4.57%	2.83%

Source: Author’s own elaboration based on electoral data.

Note: These percentages comprise the mayor’s vote share among candidates.

A decrease in party support for mayors in council is another feature. The percentage of municipalities that have no council members belonging to the mayor’s party has been relatively

stable. However, councils with more than 50 per cent of their members belonging to the mayor's party show a dramatic decrease, representing 28.3 per cent of all municipalities in 2003 and only 5.6 per cent in 2011 (See Table 1.2).

Table 1.2 Percentages of seat shares of mayor's party in council per period of government

Ranges	2003	2007	2011
0	11.58%	7.94%	10.47%
<30%	23.59%	32.84%	44.45%
30-50%	36.49%	42.71%	39.52%
>50%	28.34%	16.51%	5.56%

Source: Author's own elaboration based on electoral data.

Note: These percentages comprise the mayor's vote share among candidates.

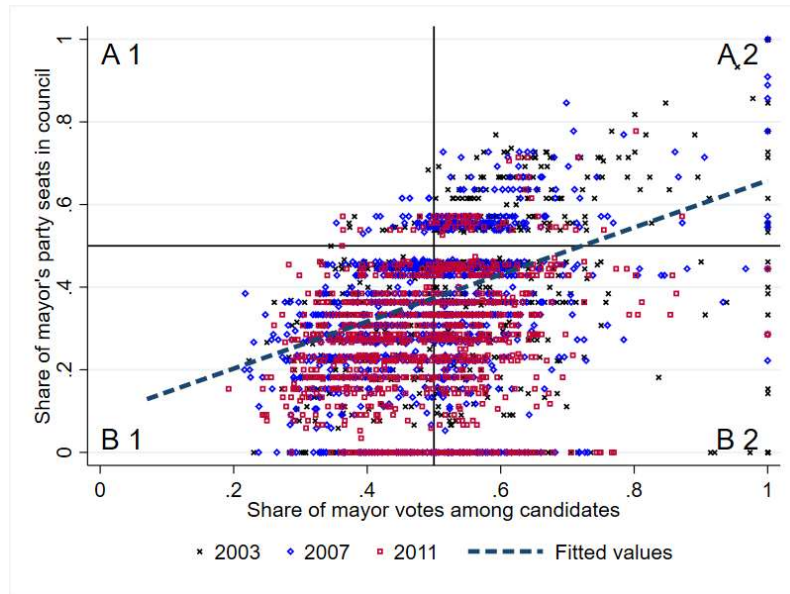
Regarding the council structure, Figure 1.3 illustrates different mayor's vote shares (SM) and the seat share of the mayor's party in council (SSC) in three government periods (2003, 2007, 2011). There is a positive correlation between mayor's vote shares and their power in councils in Colombia. Analysing trends in SM and SSC in Colombian municipalities using the executive-legislative theoretical postulates of Cox and Morgenstern (2002), three main types of Council-Mayor relations could be identified. The first category "subservient majorities"¹³ is related to situations where the mayor's party size in council is higher than 50 per cent (A). In this case, if the mayor also enjoys a high vote share, the mayor will be considered as dominant (A1).

The second category could potentially be defined as "parochial-venal". In this scenario, the seat shares of the mayor's party in council is lower than 50 percent (B), the support is less clear, and mayors are required to bargain with parties and guarantee government support through alliances. Thus, mayor's bargaining power will depend on his/her own performance in the election. Mayor's vote shares above 50 percent (B2) give some power of bargaining to these executives because, despite the mayor not having party support in council, high approval rates with citizens acts as a leverage to start building it.¹⁴

¹³ Cox and Morgenstern (2002) define the majorities as "subservient" in the sense that they are willing to approve essentially every single proposal that the executive makes.

¹⁴ Geddes (1994) posits that politicians concerned with their career future are willing to create an alliance with popular mayors.

Figure 1.3. Council composition and mayor's vote in elections



Source: Author's own elaboration based on electoral data

Finally, a third type of relation takes place when the mayor does not enjoy party support in council while, at the same time, the mayor's vote share is less than 50 percent (B1). This type of relationship takes place in very asymmetric situations in which the mayor is in a weak position (citizen support) and the opposition in councils is strong. In this case, it is expected that mayors will face strong opposition because policy or party distances are large, or in cases where mayors build alliances, these are based on political or economic benefits for council members. This is a very unusual relation; however, an important example is the case of an independent party's candidates being supported by civil movements that are able to win by a narrow margin but are not strong enough to gain support in councils.

Control variables

As discussed before, the gender of the mayor or council member plays an important role in the composition of spending. For this reason, a dummy variable indicating a female mayor is introduced. Another important control variable for the case of Colombia is the presence of conflict. In fact, many authors indicate that the internal conflict has been a continuous obstacle for municipal development (Osorio, 1998; Hincapie, 2017). In that sense, a violence dummy indicating if the municipality has experienced a terrorist attack to the population or buildings,

based on the Centre of Historic Memory database, is included. The evolution of these two variables is presented in Table 1.3. As expected, the share of female mayors has increased over time and the indicator of violence has decreased.

Finally, to control for the level of competitiveness of the municipality, I included the share of votes for mayors among all candidates as a control variable and different dummies for some of the alignment regions described in Figure 1.3. These variables are included given that they are likely to be correlated with political alignment and their omission will lead to bias in the estimation of the determinants of BDI and cost efficiency.

Table 1.3 Mean control variables

Year	Woman	Violence
2003	8.4%	14.2%
2007	9.1%	5.9%
2011	9.5%	5.1%

Source: Author's own elaboration

1.3.4 Empirical strategy

The main equation in the paper has the following specification:

$$FP_{it+2} = \gamma_0 + \gamma_1 MC_{it} + \alpha X_{it} + \theta Z_i + \delta t + \varepsilon_{it} \quad i = 1, \dots, n; \quad t = 1, \dots, T \quad (2)$$

In this model, FP_{it} is a variable capturing fiscal performance with one of two possible alternatives: 1) fiscal discipline or 2) education cost efficiency. MC_{it} captures alignment and could take one of two possible alternatives: 1) share of mayor's party seats in councils (SSC); 2) a dichotomic version¹⁵ of SSC with a 50% threshold (SSC50). Alternatively, I include a third independent variable: Effective Number of Parties (ENP) intrinsically related to the mayor's power in councils but not directly capturing political alignment.¹⁶ Lastly, X_{it} is a vector of control variables, where Z_i accounts for municipal specific heterogeneity in the sample and δ captures time fixed effects.

¹⁵ Following the empirical evidence that, in most democracies, single party majorities are an exception rather than the rule (Golder, 2006).

¹⁶ I also evaluated models using the Herfindahl-Hirschman Index (HHI) The findings of the two measures are essentially pointing in the same direction (See Appendix, Table A.1.4, Models 5 and 6).

The most important parameter in the model, γ_1 , captures the effect of changes in the measure of alignment or fragmentation at period t on fiscal performance in the mid-term period $t + 2$. A negative sign in γ_1 shows that increasing the executive's power in the legislature reduces fiscal performance and in the case of the ENP a positive sign implies that a higher number of parties results in higher fiscal performance. Lower fiscal discipline and cost efficiencies could arise because of councils' subordination to mayors in each municipality and the reduction of their accountability role as discussed before.

1.4 Empirical findings

1.4.1 Fiscal discipline

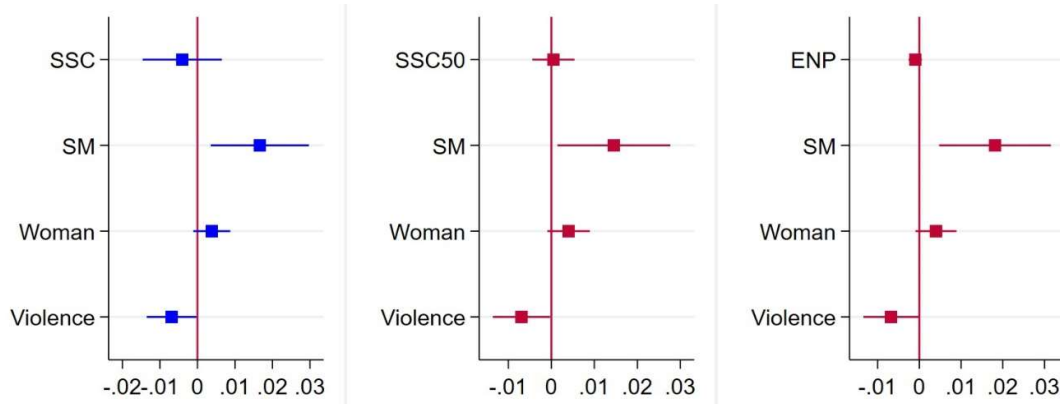
Results indicate that increasing opposition in the council improves both fiscal discipline and cost efficiency. Both effects are important in magnitude, albeit not statistically significant. Figure 1.4 reports a negative relation between the share of seats of the mayor's party in council and fiscal discipline.¹⁷ On average, increasing the number of seats of a mayor's party in councils by 10 percentage points (pp) decreases fiscal discipline scores by 0.04 pp. The magnitude of the effect is large at about half of a standard deviation of the FPI but is not statistically different from zero. On an alternative specification omitting time fixed effects, the marginal effect of the mayor's share in council is still negative and has a strong statistical significance (see Appendix 1.3). Alternative measures of alignment or fragmentation have an almost null effect on fiscal discipline.

For other variables considered, I found that female mayors increase fiscal discipline by 0.03 pp relative to their male counterparts. Despite the fact this result is not statistically different from zero, it is positive for most specifications and statistically significant in some of them (see Appendix 1.3). Municipalities affected by violence have on average a 0.06 pp lower fiscal discipline, with this result being statistically significant. Finally, a 10 pp increase in the vote

¹⁷ Appendix 3, Table A.1.4 provides details of several model specifications for estimations of fiscal performance and the seat of the mayor's party in council, HHI and ENP.

share of mayors increases fiscal discipline by 0.16 pp, with this result being statistically significant most of the time.

Figure 1.4 Fiscal discipline estimates
Point estimates and 95% confidence intervals



Source: Author's own elaboration

Note: Municipal and time fixed effects estimations with municipal clustered standard errors.

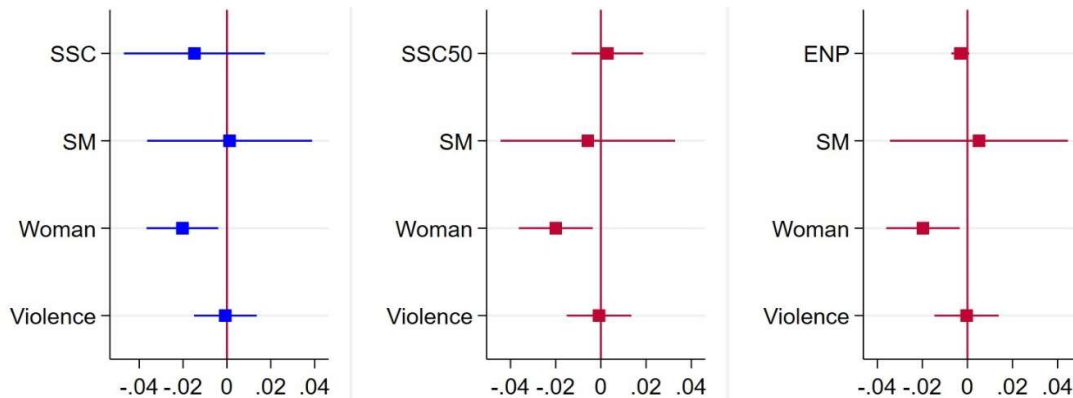
1.4.2 Cost efficiency

Figure 1.5 reports estimations that indicate a negative relation between the share of seats of the mayor's party in council and cost efficiency in education.¹⁸ On average, increasing the number of seats of a mayor's party in councils by 10 pp decreases cost efficiency scores in education by 0.14 pp. The result is important in magnitude, implying an effect of one standard deviation of cost efficiency in education, but is not statistically significant. Alternative measures of alignment or fragmentation have no important effect on cost efficiency estimates.

For other variables considered, female mayors decrease education cost efficiency by 0.2 pp relative to their male counterparts. This result departs from the effect of female mayors on fiscal discipline mentioned above, and departs from the previous literature findings, but it is invariably statistically significant. Municipalities affected by violence have no important differences in cost efficiencies relative to those that are not affected. Finally, the mayor's own result among candidates has no effect on the efficiency of the use of public funds.

¹⁸ Appendix 4 -Table 1.A5 in provides details of several model specifications for estimations of cost efficiency in education and the seat of the mayor's party in council, HHI and ENP.

Figure 1.5 Cost efficiency estimates
Point estimates and 95% confidence intervals



Source: Author's own elaboration

Note: Municipal and time fixed effect estimations with municipal clustered standard errors.

Estimates for cost efficiency seem to be not statistically significant, which is possibly explained by exogenous factors such as a scant autonomy, where mayors are subject to the national government decision making that they must follow by law, where budget allocation is centrally decided and shares for public goods are dictated, including health and education.

Other specifications of the models, following the discussion around Figure 1.3 and capturing the effect of the mayor's own results combined with their results in councils, gave no important insights or results.

1.5 Conclusions

Scholars studying local governments have emphasised the importance of economic variables to understand differences in fiscal performance. However, fiscal decision making takes place in highly political environments. This paper has stressed the importance of considering the effects of political conditions on fiscal performance by focusing on political alignment and trying to precisely measure government performance.

In line with the arguments of Geddes (1994), the case of Colombian local governments shows that fiscal discipline and efficiency in public spending might decrease as a result of a mayor's party having a majority in the council. The mechanism that drives this dynamic starts with an executive's dominant position that concedes extra privileges, vis-à-vis subservient council

majorities will unconditionally approve the executive's proposals, even those against the best use of public funds, allowing undisciplined budgets and low efficiency in public goods provision. Hence, opposition is a necessary condition to guarantee accountability of public resources, restraining approval of extra budgets to avoid overspending and pushing mayors to make the best use of endorsed budgets to carry out public policies.

However, strong opposition and fragmentation are not necessarily good scenarios either for fiscal discipline or cost efficiency. Mayors facing too many veto players require extra efforts, resulting in bargaining with several actors to achieve majorities and pass budgets in councils, and this can have a negative effect on government's spending performance.

Moreover, the study of local governments in Colombia provides additional nuances compared to the political dynamics in local governments in Europe. The Colombian party system has experienced dramatic changes since 2003 with an increasing presence of candidates, elected mayors and council members representing independent political parties in urban areas, whereas there is still political dominance of traditional parties (Conservative and Liberal) in rural areas. In that sense, there are big differences in political dynamics across the country.

My estimations on the effect of alignment on fiscal performance seek to improve on previous literature by taking a longitudinal approach, capturing both time and municipal fixed effects. I show that on average increasing 10 pp shares of the mayor's party in council decreases fiscal discipline by 0.04 pp and 0.14 pp in cost efficiency in education. Despite both results being important from a practical point of view, they are not statistically significant. Another relevant result is the impact of female mayors, as they increase fiscal discipline scores but decrease cost efficiency. Further research is needed to explore the potential determinants of gender differences in these two measures.

One limitation to understanding the relationship between economic performance and political conditions are the development disparities that are not easily captured by the data at hand. In fact, fiscal discipline and efficiency performance in local governments cannot be explained only by looking at the financial and management conditions, but possibly by also introducing variables such as education that are known in the literature to positively affect efficiency,

possibly as a result of higher citizen oversight of public duties if citizens have received tertiary education. Another additional feature not captured in the model is that municipal governments might be subject to different (unobserved) political configurations correlated with alignment. Future research projects should explore additional political variables but also the interplay of local development and public policy in the country.

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A.1 Appendix

A.1.1 Fiscal Performance Index

The Fiscal Performance Index $IDE_i \in [0,100]$ provides municipal scores based on deficit levels and good use of resources. It uses the principal components method to weight (α_q^*) the importance of each component (X_q) in Equation 1.

$$BDI_i = \sum_{q=1}^6 \alpha_q^* X_q \quad (1)$$

The six dimensions are: self-finance, assistance at debt service, transference index, own resources index, investment magnitude, and savings account index. The municipalities are clustered in categories as shown in Table A.1.1. These scores provide a global perspective of the municipal fiscal discipline, where values close to 100 show that the territorial entity attained positive results in its balance of fiscal performance, enough resources to accomplish development plans by abiding within spending limits, a good level of own resources (tax solvency) and high levels of investment, and current savings generation as a necessary condition to guarantee financial solvency. The remainder of this Appendix provides details of each index component.

Table A.1.1 Categories for the Fiscal Performance Index

BDI Performance	Solvent	Sustainable	Liabile	At Risk	Impaired
Rank BDI	≥ 80	≥ 70 and ≤ 80	≥ 60 and < 70	≥ 40 and < 60	< 40

Source: DNP (2013; p.14)

Self-finance $SFI_{it} \in [0,100]$, captures performance of the free destination budget that pays the payroll and the general operating expenses of the central administration. SFI is the ratio between free destination resources RF_{it} and government operating expenses GE_{it} (Equation 2). Under the condition of $RF_{it} = GE_{it}$ the municipality can cover the operating expenses with the free destination income.

$$SFI_{it} = \frac{RF_{it}}{GE_{it}} * 100 \quad (2)$$

The assistance at debt service index $DI_{it} \in [0,100]$ is the ratio between the Total Debt TD_{it} and the Disposable Income for Debt DID_{it} (Equation 3). The condition $DID_{it} = TD_{it}$ means that the disposable income covers debts. In situations where $TD_{it} > DID_{it}$ is the share of impaired debt, small values of this index will show a lower capacity of the municipal government to support the debt and low levels of this indicator will create fiscal liability compromising the administration's liquidity and payment of other expenses.

$$DI_{it} = \frac{TD_{it}}{DID_{it}} * 100 \quad (3)$$

The transference index $RI_{it} \in [0,100]$ shows the share of transfers in total income. Its magnitude reflects the weight of transfers and royalties in resources to finance territorial development. Formally, it is the ratio between the national transfers NT_{it} and the total income level of the municipality TI_{it} (Equation 4). If $NT_{it} = TI_{it}$ the municipality completely relies on the national transfers, and index values under 60% are expected.

$$RI_{it} = \frac{NT_{it}}{TI_{it}} * 100 \quad (4)$$

The own resources index $OI_{it} \in [0,100]$ shows the percentage of municipal resources that come from taxes and the level of autonomy without central government resources. Formally, it is the ratio between the tax income TAI_{it} and the total current income TCI_{it} (Equation 5). The OI_{it} indicator is important for assessing explicitly the territorial tax effort.

$$OI_{it} = \frac{TAI_{it}}{TCI_{it}} * 100 \quad (5)$$

The investment magnitude index $IM_{it} \in [0,100]$ measures the TI_{it} total investment against the TS_{it} total spending (Equation 6). If the value is above 50% it means that more than a half of the spending has been intended for investment. It is expected that over 70% of the spending needs to be destined to investment to have an impact in municipal development.

$$IM_{it} = \frac{TI_{it}}{TS_{it}} * 100 \quad (6)$$

The saving account index SI_{it} is the ratio between the current saving CS_{it} and the CI_{it} current income CI_{it} (Equation 7). This index is a measure of the creditworthiness of a territorial entity to generate its own surpluses that are destined to investment, complementarily to the use of transfers from the nation and the royalties. It is expected a positive effect of high levels of the index will show that the territorial entities can generate savings.

$$SI_{it} = \frac{CS_{it}}{CI_{it}} * 100 \quad (7)$$

A.1.2 Cost Efficiency Functions

Table A.1.2 Descriptive statistics

Model	Variable	Description	Obs.	Mean	Std Dev.
Education	Total education	Millions of pesos invested in education (in logs)	3,280	13.34	1.44
	Teachers	Number of teachers in public schools per municipality (in logs)	3,348	4.88	1.02
Health	Total Health	Millions of pesos invested in health (in logs)	3,276	14.78	1.12
	Health Personnel	Number of health personnel per municipality (in logs)	2,028	4.35	1.64
	Consulting rooms	Number of medical consulting rooms per municipality (in logs)	2,047	2.10	0.85
Total	Total	Millions of pesos invested in education and health (in logs)	3,280	15.24	1.25

Source: Author's own elaboration

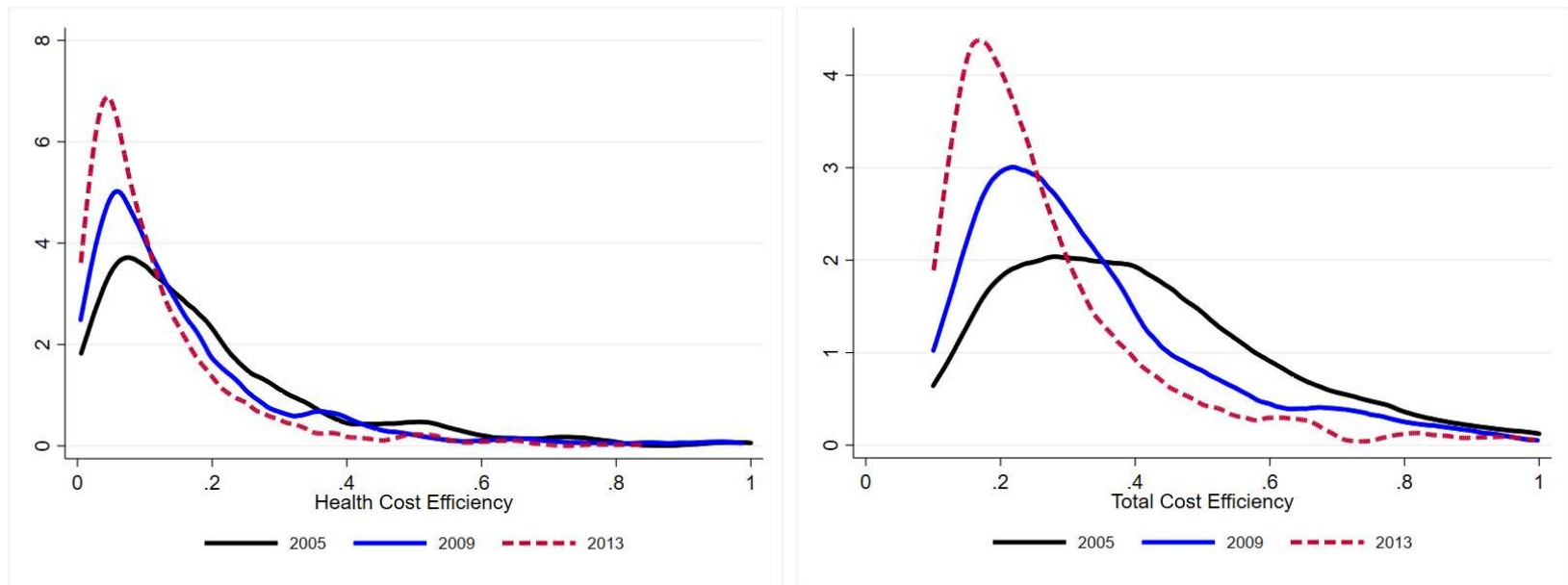
Table A.1.3 Estimations of cost efficiency in education

DV: Log (total spending education)

	Education	Health	Total
Log(teachers)	-1.547** (0.689)		-1.337*** (0.508)
Log(teachers) ²	0.199*** (0.0733)		0.187*** (0.0547)
Log(health personnel)		0.0238 (0.0609)	0.0401 (0.0523)
Log(health personnel) ²		-0.0270*** (0.00785)	-0.0283*** (0.00639)
Log(consulting rooms)		0.00564 (0.239)	0.0660 (0.169)
Log(consulting rooms) ²		0.0867 (0.0550)	0.0505 (0.0345)
Constant	15.96*** (1.604)	14.91*** (0.250)	17.00*** (1.170)
Observations	3,276	2,023	2,027
R-squared	0.011	0.084	0.095

Source: Author's own elaboration Municipal clustered Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Figure A.1.1 Kernel densities for cost efficiency in health and total cost efficiency in health and education



Source: Author's own elaboration

A.1.3 Regression Tables Fiscal Discipline

Table A.1.4 Estimations for Fiscal Discipline
Dependent Variable: Budget Discipline Index (BDI)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mayor's party seat share	-0.0692*** (0.00855)	-0.00405 (0.00538)						
Mayor's seat shares 50%			-0.0332*** (0.00346)	0.000482 (0.00249)				
HH Index					0.0221* (0.0127)	0.00837 (0.00711)		
Effective N. of Parties							-0.00919*** (0.00135)	-0.000975 (0.000810)
Vote share mayor's	-0.0238** (0.0106)	0.0166** (0.00666)	-0.0245** (0.0104)	0.0145** (0.00669)	-0.0432*** (0.0106)	0.0175*** (0.00666)	-0.0199* (0.0113)	0.0181*** (0.00682)
Woman	0.00546 (0.00412)	0.00383 (0.00251)	0.00627 (0.00413)	0.00402 (0.00252)	0.00713* (0.00412)	0.00402 (0.00251)	0.00758* (0.00407)	0.00399 (0.00251)
Violence	-0.0345*** (0.00499)	-0.00688** (0.00338)	-0.0331*** (0.00501)	-0.00694** (0.00339)	-0.0356*** (0.00504)	-0.00682** (0.00337)	-0.0338*** (0.00497)	-0.00679** (0.00338)
Municipal fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Time fixed effects	N	Y	N	Y	N	Y	N	Y
Observations	3,101	3,097	3,099	3,095	3,101	3,097	3,101	3,097
Adjusted R-squared	0.0691	0.6216	0.0701	0.6213	0.0381	0.6218	0.0581	0.6217

Source: Author's own elaboration

Note: Fixed effects estimations with robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

A.1.4 Regression Tables Cost efficiency in education

Table A.1.5 Estimations of cost efficiency
Dependent Variable: Cost efficiency in education

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mayor's party seat share	0.0527*** (0.0179)	-0.0148 (0.0164)						
Mayor's seat shares 50%			0.0396*** (0.00870)	0.00291 (0.00805)				
HH Index					-0.0168 (0.0266)	0.0133 (0.0214)		
Effective N. of Parties							0.00821*** (0.00244)	-0.00313 (0.00205)
Vote share mayor's	0.0638*** (0.0217)	0.00120 (0.0192)	0.0537** (0.0216)	-0.00576 (0.0197)	0.0790*** (0.0217)	-0.000321 (0.0195)	0.0579** (0.0228)	0.00512 (0.0201)
Woman	-0.0218** (0.00948)	-0.0203** (0.00835)	-0.0222** (0.00946)	-0.0200** (0.00834)	-0.0232** (0.00946)	-0.0198** (0.00832)	-0.0235** (0.00944)	-0.0198** (0.00833)
Violence	0.0392*** (0.00770)	-0.000733 (0.00729)	0.0369*** (0.00774)	-0.000812 (0.00729)	0.0398*** (0.00775)	-0.000611 (0.00729)	0.0380*** (0.00773)	-0.000369 (0.00728)
Municipal fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Time fixed effects	N	Y	N	Y	N	Y	N	Y
Observations	3,016	3,016	3,014	3,014	3,016	3,016	3,016	3,016
Adjusted R-squared	0.0247	0.264	0.0328	0.264	0.019	0.264	0.0242	0.264

Source: Author's own elaboration

Note: Fixed effects estimations with robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Chapter 2: Re-election and corruption: an analysis of local politics in Colombia

Abstract

A group of scholars argue that term limits provide incentives for opportunistic behaviours, whereas re-election helps to institutionalise and create more influential legislatures. However, other scholars indicate that, under weak rule of law, re-election creates incentives for corruption because voters are not able to hold politicians accountable. This paper finds no evidence to support any of these expectations. Using a panel of 1,122 municipalities during five periods of government and an objective measure of corruption, namely, prosecutions of malfeasant and other irregular uses of public funds after audits of comptrollers, I found that municipal council re-election rates do not decrease or increase corruption at the local level in Colombia.

Keywords: Corruption, re-election, local governments, Colombia.

Re-election and corruption: an analysis of local politics in Colombia

“The desire of re-election
constrains the greed of politicians.”

Rose-Ackerman (1999)

2.1 Introduction

Corruption is one of the most preeminent political and economic problems. It distorts the best social use of public resources, lowering economic growth, decreasing investment levels (Mauro, 1995), and maintaining income inequality (Gupta et al., 2002; Abed and Gupta, 2002) with further impacts in developing countries where resources to tackle poverty and improve living standards are scarcer (Ambraseys and Bilham, 2011; Gould and Amaro-Reyes, 1983). Besides, it is a destabilising factor for the political system (Farzanegan et al., 2017) and creates fewer incentives for citizens to respect the authority and fulfil civic duties such as the payment of taxes (Rothstein, 2000; Rose, 2014, pp. 126).

The illegal nature of corrupt activities presents a major obstacle to tracing their causes and understanding the actors, mechanisms, and types of relationships that maintain corrupt networks (Ackerman, 2000). Political scientists and economists have suggested a variety of variables that might explain corruption including legal systems (La Porta et al., 1999), historical factors and geography (Goel and Nelson, 2010) and culture (Yeganeh, 2014), among others.

The theoretical literature in political science has stressed the importance of political institutions shaping corruption patterns (Kunicova and Rose-Ackerman, 2009). Some scholars including Scott (1972) and Nelken and Levi (1996) claim that the primary connection between corruption and politics is the misuse of political advantages to increase political power. In this sense, an important question is whether there is a relation between corruption and re-election. Political scholars since Madison (1787) have argued that term limits provide incentives for opportunistic behaviours, whereas re-election helps to institutionalise and create more influential legislatures (Myerson, 1993; Besley, 2006; King and Zeng, 2000; McKelvey and Reizman, 1992). Under this

premise, legislators' performance is influenced by electoral motivations and therefore they will act in their voters' interests.

Another set of literature has focused on how incumbents decide the amount of rent seeking activities considering the probability of different electoral outcomes. One reason why this could be particularly important in developing countries is that under a weak rule of law and the presence of political elites,¹ the likelihood of being detected and prosecuted for misconducts is low, increasing the expected utility of rent extraction (Okonjo-Iweala, 2018; Nwabuzor, 2005). Therefore, politicians have incentives to build clientelist networks and misappropriate public resources to hold office for longer periods (Geddes, 1994; Barro, 1973; Austen-Smith and Banks, 1989). Hilgers (2012) claims that in developing countries the formal rules of democracy were superimposed on highly unequal societies, thus personal relationships such as clientelism are preferred to the uncertainty of formal processes. This preference could be especially important at the local level, where institutional arrangements are ineffective in providing fair elections. Local government elections in Latin America are known to be pervaded by clientelist practices; for instance, in Colombia, "caciques electorales" (electoral chiefs) have been able to sustain political power for long periods using them.

Another strand of literature has focused on the value of 'turnover', paying attention to gender. Some authors argue that women are often excluded from power and patronage. Consequently, when they are elected, women act as outsiders breaking clientelist networks (Esarey and Chirillo, 2013; Branisa and Ziegler, 2011). Empirical studies find that greater representation of women in government is associated with less perceived corruption (Swamy et al., 2001; Dollar et al., 2001). However, this relationship is far from conclusive.

In this context, this paper enquires into the relation between re-election of council members and corruption in local governments in Colombia. This country is an interesting case for study: despite the fact it is one of the oldest democracies on the continent, it is also a notorious example of failed institutional arrangements, being in the group of countries with a weaker adherence to

¹ Pareto (1916) defined political elites as organised minorities enjoying inherited advantages, wealth, and family connections. They use force or persuasion to govern.

the rule of law (World Justice Project, 2018). Moreover, the country established regional and national comptrollers that since 1996 have been working to improve transparency and accountability in the use of public resources, opening cases of malfeasant and other irregular uses for public funds, as well as random audits to local governments across the country. Hence, the analysis of the Colombian context provides elements to understand trends in corruption in developing countries and whether the influence of certain political conditions can potentially explain why corruption is more persistent in some contexts than in others. The country also has the relevant data, typically not available to researchers, to test this relationship.

The main argument of the paper is that re-election is positively associated with corrupt practices. The mechanism behind this idea is that politicians pay back the support they received during the re-election campaign with public resources. Voters on the other hand, do not punish politicians that take personal profit because incumbents create personal trust and loyalty from their voters.

To test these ideas, I construct a panel for candidates competing in local council elections in Colombia based on electoral results from 1998 to 2015. I calculate re-election rates at the municipal level and test how they affect the likelihood of corruption, captured by reported prosecutions after audits based on regional and national comptrollers' registers that include cases of allegations of malfeasant and other irregular uses for public funds across the country.

From my empirical results, it is not possible to directly identify a relationship between corruption and re-election of council members in local governments in Colombia. Results of a Linear Probability Model (LPM) indicate that increasing 10 percentage points (pp) in the number of council members re-elected increases corruption by 3.8 pp, but the coefficients are not statistically significant from zero. This result is invariant to different measures of corruption, subsamples of audits, and several specifications of the equation of interest. Moreover, contrary to several studies that claim a negative relationship between corruption and women in power my findings suggest that increasing 10 pp in the share of female council members increases corruption by 36 pp.

The paper is comprised of five sections, including this introduction. Section 2.2 presents the main theoretical debate and empirical evidence of other studies on re-election and corruption. The

institutional background, data, and empirical strategy are presented in Section 2.3. Section 2.4 presents some facts concerning local governments in Colombia and the main results. Finally, Section 2.5 provides some concluding remarks.

2.2 Conceptual framework: theory and evidence

2.2.1 Theory

There is no theoretical consensus on the effects of re-election on corruption. Some scholars claim that term limits break electoral incentives, and this could potentially increase opportunistic behaviours and corruption. Conversely another group of authors indicate that under weak rule of law, re-election might divert incentives for politicians, where they are more likely to engage in corruption and clientelism to maintain power. This section first provides an overview of definitions of corruption and later presents arguments of potential positive or negative relations between re-election and corruption. Overall, it tries to highlight the nuances of corrupt behaviours in democracies in developing countries.

Despite corruption features saliently in the economics and political science literature, there is not an authoritative definition but many competing ones (Johnston, 1996). For instance, the organisation International Transparency and institutions such as the World Bank define corruption as “the abuse of entrusted power for private gain” (International Transparency, 2006). Scholars such as Hellman et al. (2000) propose a classification of actions ranging between state capture, that is, the use of power to obtain long-term benefits for a group of people, and administrative corruption, that is, actions related to mismanagement of public funds. For the remainder, I follow Hellman et al. (2000) and refer to administrative corruption, this being the definition conceptually closer to the problem at hand, as it accounts for actions such as embezzlement and overpayment in public contracts, among others, that I am able to capture in the data.

In principle, well performing democratic systems will endow societies with equality and universalism, giving all their citizens the same chance to govern (Rogow and Lasswell, 1966, pp. 132–33). Elections in turn become a mechanism for voters to retain competent incumbents whose performance improves through experience (Ashworth, 2005; Ashworth and Bueno de Mesquita, 2008);

re-election increases the value of office, allowing politicians to perform better in their functions and creates professionalisation of legislators (Kayser, 2005).

Moreover, longer tenure periods make politicians more familiar with the workings of political power and increase their chances of raising their leadership, ultimately benefiting their voters (Persson, Tabellini and Trebbi, 1997; Treisman, 2000).

Legislators' performance is influenced by electoral motivations and, acting as rational agents, they establish long-term relationships with constituents, where legislative production is a solid strategy to trigger recognition by voters, party leaders and interest groups. In this line of reasoning, corruption will only harm a politician's re-electoral prospect (Miller and Stokes, 1963) and this or other opportunistic behaviours are curtailed through the possibility of re-election (Ferejohn, 1986; Besley and Case, 1995). As Myerson (1993) indicates, the basic premise is that if an incumbent seeks to be re-elected after incurring corrupt behaviours, voters will make him accountable and elect another candidate as punishment.

Public choice scholars emphasise that in the principal-agent relation between voters and elected politicians, voters do not know about an incumbent's type: corrupt or noncorrupt. Politicians could try to reveal a noncorrupt type by acting sufficiently often in their voters' interests, which in turn could give them merits to be re-elected (Ferraz and Finan, 2011, Besley, 1995). However, politicians, as any other rational agents, maximise their expected payoffs and consider institutional constraints when making their decisions of whether to use public funds for private gain or not (Kunicova and Rose-Ackerman, 2009). In some contexts, a weak rule of law implies that voters cannot hold incumbents entirely accountable as described in the ideal setting described above, and this is because of asymmetries of information on government corrupt behaviours.

A weak rule of law also produces incentives to gain power by any means, including the misuse of public resources by incumbents for pork barrel. Besides, re-election decreases the likelihood of future sanctions for incumbents because staying in office allows them to continue buying loyalties and increasing their power (Barro, 1973; Austen-Smith and Banks, 1989; Pereira et al., 2009). If political competition is low, incumbents will be more able to capture rents because of the lack of political

rivals that could make corrupt incumbents accountable (Erikson, 1971; Lassen and Alt, 2000; Dick, 1993). Lastly, one has also to assume that politicians are not only “single minded seekers of re-election” (Mayhew, 1966, p. 5). Theories of legislators’ behaviour portray a wider range of motivations including pursuing higher office (see Schlesinger, 1966; Botero and Rennó, 2007) and explicit rent seeking. If this is the case, the re-election of politicians is not necessarily associated with increasing corruption.

Other authors indicate that even relatively informed voters could re-elect corrupt politicians. Under the principal-agent setup described above, incumbents could provide voters with private goods that are valued more than the utility of electing a noncorrupt outsider (Manzetti and Wilson, 2007). In the same manner, if voters’ ideal points, either ideological or religious, are far away from a noncorrupt politician but close to a corrupt one, they could prefer the latter (Persson and Tabellini, 2003).

Another group of scholars suggests that increasing the representation of women will lower the extent of corruption. A straightforward mechanism that explains this relationship is that typically women come to participate in politics through social movements that work against corruption (Rodriguez, 2003). Besides, politics have been highly based on male-dominant networks for cultural and financial reasons, with scant opportunities for women to be part of those networks. However, some authors indicate that although it takes time for women to be part of networks, once they adapt – and get re-elected – the “women effect” might vanish through time (Esarey and Chirillo, 2013; Swamy et al., 2001; Branisa and Ziegler, 2011).

The literature of political economy indicates that on average women are more risk averse than men (Croson and Gneezy, 2009). Moreover, voters hold female elected officials to a higher standard compared to men, increasing their chances of being detected if corrupt (Esarey and Schwindt-Bayer, 2018). Both factors reduce their expected utility of involvement in malfeasant activities.

2.2.2 Existing empirical evidence

Corruption is not a generic one-dimensional problem; thus, empirical evidence of the relationship between corruption and re-election faces several challenges. In this endeavour, analysis has been based on subjective measures (perceptions), cases reported by newspapers or watchdog agencies

(actual records), or variables such as politicians' wealth accumulation or uncompetitive procurement contracts (proxies).

Regarding the studies that use actual records, Ferraz and Finan (2011) is the paper more in line with my own research as it uses administrative data and studies the effect of re-election on corruption. Studying the relationship between mayors' corrupt behaviours and re-election in local governments, they use data of an anticorruption programme in Brazil, where the main dependent variable is the proportion of federal funds received by each mayor that was misused. Using a cross-sectional sample for Brazilian municipalities, the authors find that there is significantly more corruption in municipalities where mayors are in their second term relative to those where mayors are in their first term.

This result arises because only the latter are eligible for immediate re-election. Results are more marked in municipalities with less access to information and, also, where the likelihood of judicial punishment is lower. Lastly, using a corruption indicator that only includes minor offenses (which are harder to be known by voters) shows no systematic differences in corruption between first and second period mayors. This last result reassures that the possibility of re-election is what drives first time mayors to being less corrupt, at least regarding the more directly observable uses of public funds.

Party incumbency on re-election by relating an "incumbency disadvantage" has been claimed as a novel approach to analyse corruption. Klašnja (2015) examines the causal effect of corruption in local mayoral elections in Romania analysing wealth accumulation of incumbents and expensive public procurement contracts as proxies. He employs a regression discontinuity design and by comparing close winners and losers and sharp jumps in mayoral salaries, he finds that corruption decreases the chances of re-election. In the same vein, Pereira and Bhavnani (2008) analyse the conditions under which voters re-elect corrupt incumbents. The authors analyse three sources of corruption data based on special audits for municipalities of the state of Pernambuco in Brazil: third party denouncements, normal audits, and special audits during electoral years. The authors conclude that corruption decreases the electoral success of incumbents, but that higher public expenditure could increase the share of votes of corrupt incumbents.

On the group of papers studying corruption using subjective measures, Lederman et al. (2005) employ an index that captures the likelihood that government officials will demand or accept bribes using surveys delivered to three population groups: a worldwide network of experts, firms, and citizens. Using a cross-country panel, the authors find that factors such as democracy and the freedom of press index reduce perceptions of corruption, whereas presidential systems opposed to parliamentary systems increase corruption.

Scholars particularly interested in corruption in Colombia have analysed its relationship with poverty and political concentration. Gamarra (2005) analyses the relationship between corruption and poverty looking at a transparency index for Department (states) Comptrollers. The author finds that departments with comptrollers whose transparency index are low also present more poverty measured by a deprivation in basic needs index. Additionally, Gamarra (2006) analyses the determinants of corruption in Colombia using the International Transparency Index and cost efficiency measures in health, education, water, and sanitation following the Golden & Picci (G&P) methodology. From the G&P measure the author concludes that less efficient Departments also have lower transparency index values.

Ortiz (2018) assesses the effect of political conditions on the work of territorial audits at the Department level. The author provides empirical evidence that certain political conditions influence the level of enforcement of territorial comptrollers compromising the transparency of audits. Moreover, Ortiz and Calixto (2018) propose a set of measures of administrative corruption in Colombia at the Department level. The authors conclude that the audit and judicial organisms do not work in a coordinated manner to investigate and sanction corruption cases. In this context, it is possible that the ineffectiveness of justice encourages corruption.

Gallego (2018) explores the causal effect of natural disasters on party survival in Colombia, taking advantage of the worst rainy season in Colombia in recent history (2010–2011) and the local elections of 2010. Using a difference in difference estimator, the author compares party survival between municipalities with different degrees of impact from the disaster. The author finds that for the Colombian case, contrary to common belief, citizens do not necessarily punish incumbents in the aftermath of a natural disaster, but they could reward them. The author discusses that this

phenomenon might be explained by the presence of clientelist practices where even if incumbents overall provide inefficient results handling the crisis, they could resort to pork barrel politics during the crisis to be re-elected.

Finally, scholars have not reached a consensus regarding the effect of women in politics and corruption. Some studies suggest that increasing participation of women in politics could serve to mitigate corruption. Conversely, other studies find positive or null effects of increasing female participation in government and corruption.

Regarding positive effects, Dollar et al. (2001) examine female participation in legislatures and citizens' perception of corruption in 100 countries. The authors use survey data and measure corruption as the perceived likelihood that high government officials will demand bribes. The authors find that increasing the proportion of female representatives in legislatures decreases the level of perceived corruption.

Conversely, Cheung and Hernandez-Julian (2006) study the relationship between a state's corruption and the representation of women. Using state level panel data in the US, they test the effects of the share of women state legislators on the fraction of officials convicted for corruption. Their results show little evidence of a relationship between gender and corruption concluding that these effects are likely to be overstated in the literature.

The present paper links with two lines of research: first it connects with studies measuring corruption based on administrative records, specifically with audits such as Ferraz and Finan (2011), and thus it distances from subjective measures that are the most common way to analyse corruption. The advantages of this approach are that it overcomes the biases of citizens' perceptions or asymmetries of information that divert the perception from actual corruption.

Second, it connects with studies particularly interested in Colombia, providing a contribution to this literature by exploring municipal instead of state level data (Gamarra, 2005, 2006; Ortiz, 2018; Ortiz and Calixto, 2018). The paper is aligned with the hypothesis by Gallego (2018) that Colombia as a case study does not provide evidence that re-election prospects incentivise the professionalisation of politicians; instead, the author stresses that mayors are re-elected via electoral machines

instead of being punished for bad performance. Besides, given the conflicting empirical evidence on the impact of gender on corruption I test this relationship for Colombia to compare with other studies in this line of work.

2.3 Institutional background and empirical strategy

2.3.1 Background

In Colombia, elections for mayoralities and councils occur every four years. Voters can choose individual candidates for councils on party lists or closed lists under proportional representation. The district magnitude is established according to municipal categories and population size. Bogotá, Colombia's capital, has the largest district magnitude with 45 seats. Intermediate cities have 17–21 seats, large towns have 11–15 seats, and small towns 7–9 seats. The law establishes that council members could be immediately re-elected for an indeterminate number of periods. Mayors require one period out of office to re-run for elections for a second and, in the case of winning, final period. For this reason, I focus exclusively on re-election on councils, despite it being known that mayors have more power in local politics.

The case of Colombia is a relevant case to study corruption. The country was in the group of countries with a weaker adherence to the rule of law (World Justice Project, 2018). Ergo, Colombian citizens are aware of the pervasive effects of corruption in society, with a national referendum in 2018 where 11.7 million citizens voted for the toughest punishment for corrupt politicians. The country is one of the oldest democracies in Latin America with the presence of clientelism through electoral bosses² (“caciques electorales”) pervasive support of candidates' political power for long periods, challenging the logic of democracy being able to “throw the rascals out” (Riker, 1983, p. 244).

The 1991 Constitution established regional and national comptrollers to exercise control and accountability of public resources management. In Colombia, there are 67 comptrollers: 32 at

² Political bosses are a type of “power dealer” that use strategies to pay for political support with personal favours instead of providing public goods. Santa (1967) describes them in the following terms: “[they] give away and take back jobs, get scholarships and recommend promotions for those who follow their political lead”.

department (state) level, 30 at the municipal level, 4 at district level, and the National General Comptroller (CGR) who is based in Bogotá but also responsible for monitoring the 1,122 municipalities across the country (CGR, 2013). Therefore, the CGR operates at national and local levels, especially in the absence of sub-national comptrollers. After an audit, if the comptrollers determine an apparent mismanagement of public funds, legislation establishes that they must start a process of fiscal responsibility.³

Moreover, legal provisions in 2011 specify the mechanisms for sanction, prevention, and investigation of the corruption allegations, establishing specific sentences for those who are prosecuted after allegations. The sanctions range from barring those involved from making contracts with the state or from holding public office to imprisonment. Moreover, the law establishes very strict processes to elect auditors and public servants working in those organisations, as well as legal responsibilities for those who represent comptrollers and perform audits, especially for the CGR. Henceforth, the incentives to act in favour of third parties seem to be very low, increasing confidence in the use of audit data.

Despite the current challenges of the system, especially regarding clear boundaries of action between the general and territorial comptrollers, the work of these agencies – especially the CGR – has been usually recognised as clean and fair. In that sense, the use of audit information in this paper is under the assumption that there are not biases in political or private interests in the records and that they provide the best possible source of potential and prosecuted cases of corruption in the municipalities audited.

It should be noted that, given the institutional setting described above, I will be interested in the effect of gaining re-election on the corruption observed during the additional term in office, in a similar spirit to Ferraz and Finan (2011). However, immediate re-election is forbidden for mayors, and therefore I focus on council members. In this case, as indefinite re-election is allowed, the proposed framework is not trying to capture the effects of the prospects of re-election on corruption, as in Ferraz and Finan (2011), but the effects of gaining government experience on future

³ The process of fiscal responsibility is defined as “a group of administrative actions carried out by comptrollers in order to establish responsibility of public servants and others when exercising fiscal responsibilities cause by action or inaction intentionally or guilty harm to public resources”, Law 610 of 2000.

corruption. Future corruption could be a possible outcome because, assuming a weak rule of law, council members learn the mechanics of power during their first term and could increase rent extraction afterwards. Furthermore, council members could end up paying back to private interests the help received on the re-election campaign.

2.3.2 Data

Corruption

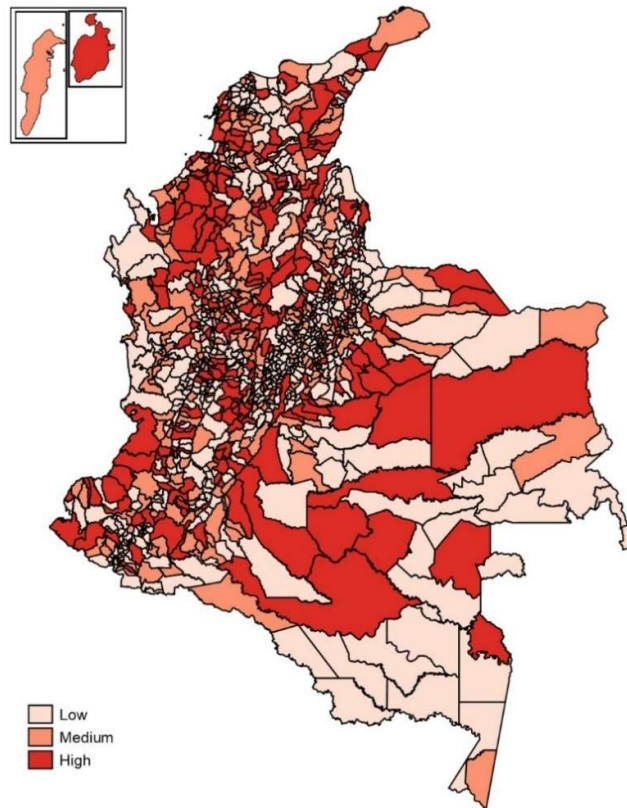
To examine corruption, the data comes from the National General Comptroller (CGR) and territorial comptrollers that establish records of the allegation and prosecuted cases. The data comprises 47,016 reports. From the data, 32.7 per cent (15,141 reports) comes from the CGR, 3.27 per cent (1,536 reports) comes from Bogotá's comptroller, 46.07 per cent comes from departmental comptrollers (21,422 reports), and 17.96 per cent from city and municipal (8,445 reports). Despite the data also including other sources of processes, such as Special Operations (ACES) or citizens' complaints among others (see Appendix 1), for this study, I only consider the processes that come from the audits⁴ to avoid sample selection.

For each process, the date for the occurrence of the alleged corruption event and the date of the verdict are recorded. For this paper, I considered the date of the occurrence of the event because it is directly related to a specific government and processes could take years to conclude. With this information, I calculate the sum of cases and value of misappropriation or embezzlement per government period.

Moreover, I tested that the value and number of cases per municipality are not correlated with the share of seats of the mayor's party in council to guarantee that these audits are not correlated with political processes. The results indicate that there is not a recognisable pattern which would indicate that the process that generates it is significantly non-random (see Appendix 2). Hence, there is no evidence that weak or strong mayors are facing more/fewer cases.

⁴ The audits follow the same procedures as other cases. They are specially designed to identify corrupt activities.

Figure 2.1 Map of corruption costs per capita



Source: Author's own elaboration. The value for each municipality results from pooling the data for the period 1998-2016

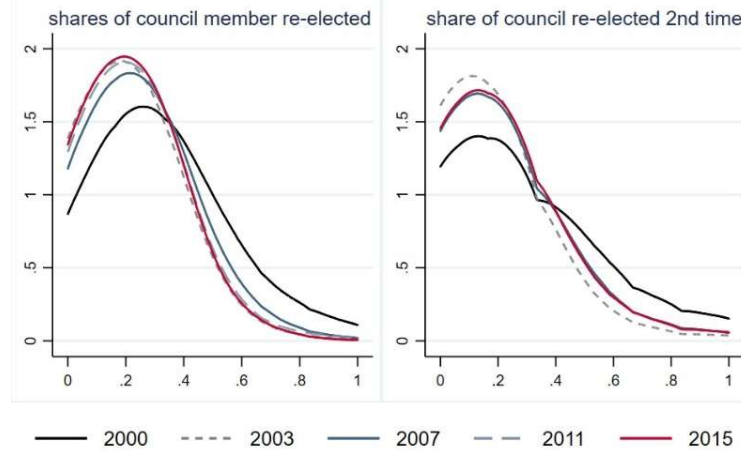
Figure 2.1 shows at the municipal level the values of the distribution of the corruption prosecuted of the average value per capita across the country in three equally sized categories: high, medium, and low. There is a great deal of heterogeneity of each of the three costs of corruption groups around the country with no clear regional pattern.

Municipal council re-election rates

I calculate measures of re-election at the local level based on electoral data from the Colombian Electoral Authority (Registraduría Nacional del Estado Civil). This data has records for the full names of all candidates to councils in Colombian municipalities in 1997, 2000, 2003, 2007, 2011, and 2015. Based on the name, I created a politician identifier to compute the number of times the politician was re-elected. Summing together the number of candidates, it was possible to create shares of re-elected council members per municipality for each government period starting at 2000.

To account for politicians who were re-elected for more than one government period, I calculated a cumulative share of re-election measure.

Figure 2.2. Share of re-elected candidates per municipal councils



Source: Author’s own elaboration

Figure 2.2 presents the distribution of the share of re-elected council members for the 1,122 municipalities. There are not any dramatic changes in this share across periods. High shares of re-election are rare and most of the cases are between 0 and 40 percent of re-elected council members. Second re-elections are even rarer, with most of the councils showing between 0 and 20 percent of council members re-elected for a second period: politicians have career ambitions and might not have incentives to serve for more than two periods in municipal councils. Alternatively, earnings for council members in small and middle-sized towns are relatively low, and this could dissuade politicians to seek re-election and could incentivise opportunistic behaviours.

Control variables

To test for the effect of women in councils on corruption, which could be correlated with re-election shares, I compute shares of female council members in each municipality. As depicted from Table 1, despite 29% percent of candidates to municipal councils are women, only 18% are elected once and a fewer 14% are re-elected. These trends are in line with the findings of authors including Swamy et al. (2001) and Esarey and Chirillo (2013) that indicate that male-dominant networks explain their higher chances of being re-elected, whereas women who do not enjoy the same connections will have fewer re-election rates compared to men.

Table 2.1. Descriptive statistics of re-election by gender

	Candidates	Elected only once	Re-elected	Difference
Male	71.44%	81.9%	85.6%	79.4%
Female	28.56 %	18.1%	14.4%	20.6%

Source: Author's own elaboration

The country presents a great heterogeneity between municipalities. To account for the effects of this heterogeneity on my estimates I include municipality fixed effects and also a set of control variables including population. It is expected that as the population size increases, the amount of public resources spend by each municipality will increase. Hence, I standardised the variables related with cases and amounts to per capita values.

2.3.3 Empirical strategy

The hypothesis of this paper is that increased mismanagement of resources at the local level could be observed after increases in re-election of council members. To test the hypothesis, I define the model of Equation 1:

$$C_{it} = \gamma_0 + \gamma_1 R_{it} + \alpha X_{it} + \theta Z_i + \delta t + \varepsilon_{it} \quad (1)$$

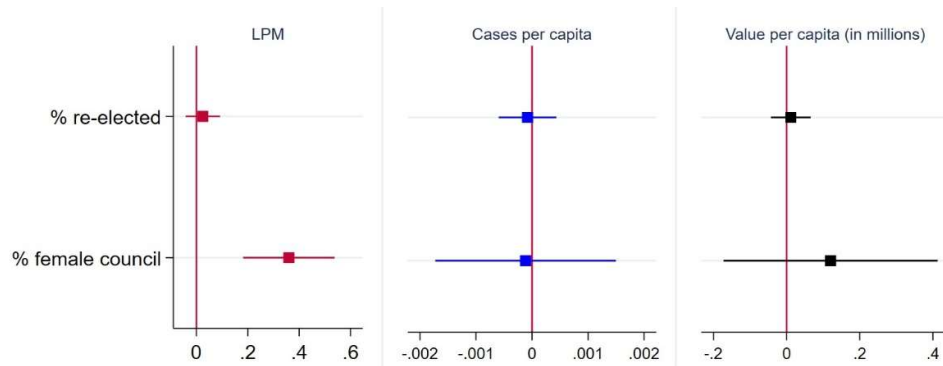
Where t is one of each election periods starting at years $t = \{2003, 2007, 2011, 2015\}$ and i is one of each 1,122 municipalities in Colombia. C_{it} represents the corruption measure that can be expressed as cases per capita, the value of total mismanaged funds per capita or a dummy variable that takes the value of 1 when the municipality presented corruption prosecuted cases and 0 otherwise. C_{it} captures corruption for the entire government period starting at t . R_{it} represents the share of council members re-elected at time t . X_{it} is a vector of control variables, Z_i is a municipal fixed effect and the parameter δ captures time fixed effects.

2.4 Results

The main results of the paper are presented in Figure 2.3 and indicate that increasing the share of re-elected council members has no apparent effect on the number of corruption cases per capita or

on the value of the public funds lost. In these alternative models, the effect of women’s participation in councils is positive but not statistically significant.

Figure 2.3. Re-election and corruption estimates. 90% CI
Prosecution corruption cases all comptrollers



Source: Author’s own elaboration

Note: Fixed effects estimations with municipal clustered standard errors.

LPM: Linear Probability Model DV: 1 if there are corruption cases, 0 otherwise.

Cases per capita: DV: number of corruption cases per capita per government period.

Value per capita: DV: value in millions of pesos of prosecuted cases per government period.

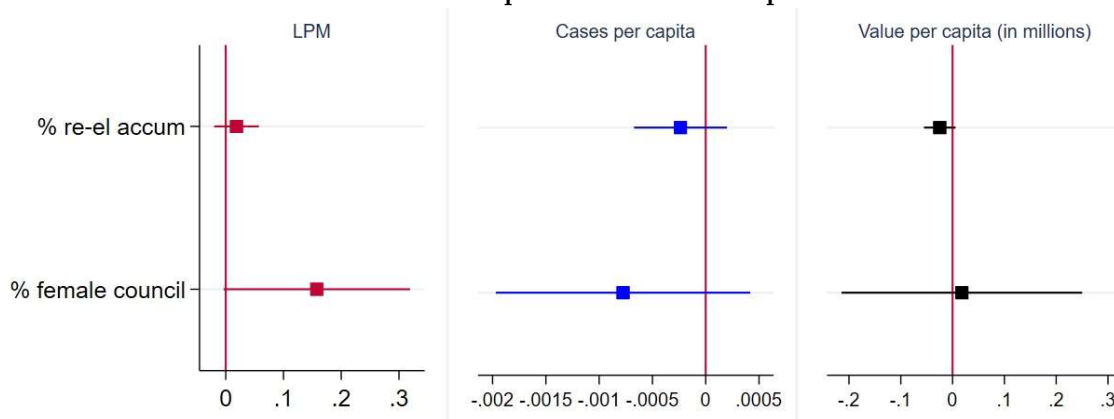
For details of the estimation coefficients see Appendix 3.

The Linear Probability Model (LPM) indicates that increasing the number of council members re-elected by 10 percentage points (pp) increases the probability of corruption by 2.5 pp. However, this result is not statistically different from zero. Increasing 10 pp the share of women in council increases the probability of corruption at a local level by 36 pp. This result is statistically significant but is opposite to the general rationale of women and corruption literature and empirical studies including Dollar et al. (2001) and Goetz (2007).

A possible explanation could be that, despite the evidence itself showing that women face several barriers to becoming involved in politics, for the case of Colombia the Quota Law has established that 30 per cent of senior public officials’ positions must be held by women. Hence, political networks might endorse female candidates such as sisters, daughters, or spouses of political bosses to take advantage of this legal framework. Following the women and corruption rationale, these women are not “out of the network” members in politics and probably reinforce corruption practices.

The results indicate that the share of council members that get re-elected in councils for more than one period have similar patterns to the single period share of re-election. For instance, the Linear Probability Model (LPM) shows that increasing re-election by 10 pp increases by 5.9 pp the probability of corruption. Moreover, increasing by 10 pp the share of female council members increases by 32.6 pp the probability of corruption.

Figure 2.4. Re-elected for a second time and corruption estimates. 90% CI
Prosecution corruption cases all comptrollers



Source: Author's own elaboration

Note: Fixed effects estimations with municipal clustered standard errors.

LPM: Linear Probability Model DV: 1 if there are corruption cases, 0 otherwise.

Cases per capita: DV: number of corruption cases per capita per government period.

Value per capita: DV: value in millions of pesos of prosecuted cases per government period.

For details of the estimation coefficients see Appendix 3.

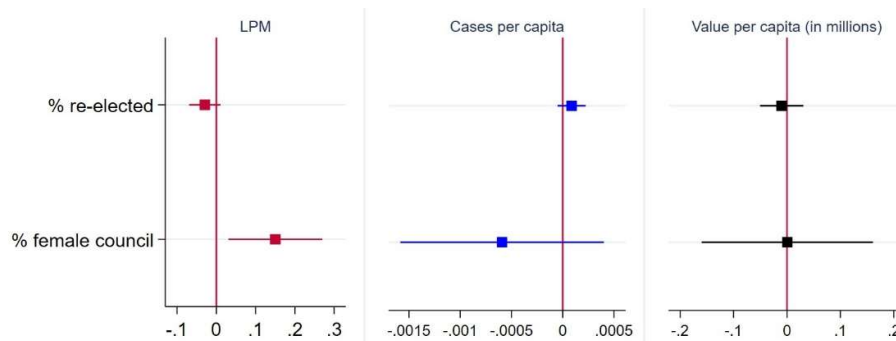
With respect to cases per capita, increasing 10 pp in accumulative re-election share decreases by 0.002 pp the number of corruption cases per capita. The share of female council members shows that increasing 10 pp decreases corruption cases by 0.004 pp. Turning to the value of prosecuted audits, results are in the same direction: increasing 10 pp share of re-elected council members for a second time decreases corruption by 1.54 pp. Increasing the share of female council members by 10 pp increases corruption value by 20.2 pp.

2.4.1 Robustness checks

Ortiz and Calixto (2018) suggest that territorial comptrollers might be co-opted by corrupt networks and are less effective at fighting corruption. In order to test for differences between all comptrollers and CGR audits, I estimate models only considering the National Comptroller data.

As depicted in Figure 2.5, the results change sign but are still statistically insignificant as previous models with all comptrollers.

**Figure 2.5. Re-election and corruption estimates)
Prosecution corruption cases CGR only**



Source: Author's own elaboration

Note: Fixed effects estimations with municipal clustered standard errors.

LPM: Linear Probability Model DV: 1 if there are corruption cases 0 otherwise.

Cases per capita: DV: number of corruption cases per capita per government period.

Value per capita: DV: value in millions of pesos of prosecuted cases per government period.

For details of the estimation coefficients see Appendix 4.

The Linear Probability Model indicates that increasing by 10 percentage points (pp) the share of re-elected council members decreases prosecuted cases of corruption of the CGR by 2.9 pp, and the model indicates a positive effect on gender, as an increase of 10 pp share of female council members decreases corruption by 15 pp.

Alternative estimates that try to control for potential differences in the rule of law at local level, and which use as proxies for this variable groups of municipalities by size or income, give inconclusive results as well.

2.5 Conclusions

This paper empirically addresses the debate on the effects of re-election on corruption, looking at shares of re-election in local councils in Colombia and corruption measured by prosecuted audits. There is no theoretical consensus of the relationship between re-election and corruption. For some authors – especially those studying the legislative power in developed countries – politicians who seek re-election do not have incentives to engage in corrupt activities under the assumption that informed voters will punish politicians who participate in corrupt activities. Conversely, some

authors claim that the incentives are different for democracies in developing countries, with clear challenges in the rule of law, where corrupt politicians are able to avoid justice when facing corruption allegations and voters can be willing to vote for them, despite allegations and even prosecution for corrupt actions, because they value more the private gains received from incumbents than the eventual benefits of noncorrupt challengers.

Since 1991 the Colombian government established institutions to oversee the use of public funds and enable them to audit central and local governments; the information collected by these comptrollers provides a useful opportunity to understand corruption in the country. In fact, most of the literature approaches corruption based on survey information capturing perceptions, thus corruption data from audits from the comptrollers provides an alternative and more objective measure of this phenomenon. For this paper, I focus on the prosecution resulting from audit processes. However, the data also provides information on allegations as a result of citizens' complaints; thus, in future research it might be interesting to explore mechanisms that motivate this type of report and the type of corrupt activities reported by citizens.

Despite the Linear Probability Models suggesting that there is a potential positive relationship between corruption and re-election, the results are not statistically significant. Moreover, the sign of my coefficient of interest varies wildly between different model specifications. Hence, I cannot argue that there is a relation between council re-election and corruption for the additional period of government. Inconclusive results could arise because the simple estimation framework presented is not able to capture the complex dynamics between local elections and corrupt behaviours.

Alternatively, these results could be potentially explained by a learning by doing process in which incumbents can rely on more sophisticated networks of corruption, following Klašnja (2015), where re-election allows politicians to become professional enough even to cover malfeasance and corruption practices. Thus, these practices will be more difficult to identify and report, creating further challenges for corruption studies to track and understand these behaviours. In that sense, future research projects could be based on administrative records of citizen complaints.

Regarding the idea that regional and local comptrollers present clear differences with national comptrollers, the models show that – at least for re-election – there are not significant differences

when testing for the two samples. The models also challenge the argument that increasing the number of female politicians decreases corruption, as broadly claimed in several studies including Dollar et al. (2001), Goetz (2007) and Bjarnegård (2013). However, it is important to note that most of the coefficients were not statistically significant to explain corruption in the models tested.

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A.2 Appendix

A.2.1 Corruption records

Table A.2.1 Origin of the corruption records in the sample

Origin	Number of cases	Share
Audit Process	23,838	71.47
Preliminary Investigation	4,404	13.21
Citizen Complaints	4,159	12.47
ACES	144	0.43
Exceptional Control	121	0.36
Accountability Sessions	264	0.79
GRI	43	0.13
Official Reports (Oficio)	9	0.03
Others	369	1.11

Source: Author's own elaboration based on the General National Comptroller (CGN) Database.

A.2.2 Tests for randomness in the sample

Table A.2.2 Tests for randomness in the sample
DV: Number of cases of corruption per municipality

SSC_50	(1)	(2)	(3)	(4)
Allegations general comptroller	-2.19e-05 (1.36e-05)			
Prosecution general comptroller		-9.06e-05 (0.000100)		
Allegations all comptrollers			-0.00048*** (0.000180)	
Prosecution all comptrollers				-9.33e-06 (8.88e-06)
Constant	0.0834*** (0.00551)	0.0827*** (0.00548)	0.0873*** (0.00577)	0.0827*** (0.00548)
Observations	2,528	2,528	2,528	2,528
R-squared	0.001	0.000	0.003	0.000

Source: Author's own elaboration

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

A.2.3 Estimation tables

**Table A.2.3 Estimations results for re-election and corruption
DV: Corruption cases prosecuted all comptrollers**

	(1)	(2)	(3)	(4)	(5)	(6)
Share re-elected	0.0253 (0.0407)		-8.34e-05 (0.000342)		-0.00514 (0.0345)	
Share re-elected Cu- mulative		0.0590* (0.0346)		-0.000253 (0.000358)		-0.0154 (0.0243)
Share of female council members	0.360*** (0.108)	0.326** (0.137)	0.000235 (0.00107)	-0.000432 (0.00105)	0.136 (0.194)	0.202 (0.277)
Constant	0.178*** (0.0286)	0.451*** (0.0300)	0.000198 (0.000238)	0.00114*** (0.000365)	-0.0102 (0.0424)	0.0306 (0.0581)
Observations	5,358	4,105	5,085	4,105	5,085	4,105
Adjusted R-squared	0.28050	0.3545	0.00547	0.0060	0.00678	0.0066
Time fixed effects	Y	Y	Y	Y	Y	Y
Municipality fixed effects	Y	Y	Y	Y	Y	Y

Source: Author's own elaboration

Note: (1) Linear Probability Model for share re-election, (2) Linear Probability Model for share re-election for a second time, (3) Cases per capita for share re-election, (4) Cases per capita Model for share re-election for a second time, (5) Value per capita in millions for share re-election, (6) Value per capita in millions re-election for a second time *** p<0.01, ** p<0.05, * p<0.1

**Table A.2.4 Estimations results for re-election and corruption
DV: Corruption cases prosecuted only CGR**

	(1)	(2)	(3)
Share re-elected	-0.0292 (0.0242)	8.70e-05 (8.30e-05)	-0.00999 (0.0246)
Share of female council members	0.150** (0.0727)	-0.000591 (0.000603)	0.000608 (0.0975)
Constant	0.0545*** (0.0183)	0.000110 (9.74e-05)	0.00294 (0.0238)
Observations	5,358	5,358	5,358
Adjusted R-squared	0.09188	0.00383	0.00208
Time fixed effects	Y	Y	Y
Municipality fixed effects	Y	Y	Y

Source: Author's own elaboration

Note: (1) Linear Probability Model, (2) Cases per capita, (3) Value per capita in millions *** p<0.01, ** p<0.05, * p<0.1

Chapter 3: Tax morale and government approval: An analysis of citizens' attitudes in Bogotá

Abstract

This paper seeks to explain how citizens' approval of their governments and their performance translates into willingness to pay taxes. I argue that there is a positive relationship between approval, perception of performance rates and collective tax morale. Based on the citizens' perception survey "Bogotá Como Vamos" that identifies the socioeconomic conditions of 27,793 citizens from 1998 to 2016, I estimate an ordered logit model to analyse this relationship. Results indicate that both variables are positively correlated with tax morale: passing from disapproving to approving makes the odds of being in a higher category in tax morale 1.07 times higher. Besides, a similar increase in the perception of performance makes the odds of being in a higher category in tax morale 1.02 times higher. This article contributes to the tax morale literature in two ways. First, it examines the concept of tax morale in the institutional setting of a developing country. Second, the Bogotá survey data overcomes data limitations in the socioeconomic, demographic, and civic dimensions of national level surveys. This omission could confound the relation between tax morale and approval.

Keywords: Tax morale, trust in government, government performance perception

Tax morale and government approval: An analysis of citizens' attitudes in Bogotá city

“We all bring our own value judgments,
life experiences, prejudices,
hopes and values to all aspects of tax.”
Murphy (2015)

3.1 Introduction

Despite every government has made efforts to encourage compliance and deter evasion and avoidance,¹ acceptable levels of tax revenue loss have been elusive (Williams and Martinez, 2014). For instance, in 2017 the estimated tax loss worldwide was around US\$500 billion. Low compliance indicates that there is a limited understanding of citizens' incentives to pay taxes (Cobham and Jansky, 2018). The general assumption in most theoretical tax models is that people loathe taxes. More formally, the marginal utility of paying taxes is never positive because the public goods provided with taxes do not usually increase citizens' utility. Under this strong assumption, rational agents will evaluate the risk of non-compliance and governments should increase the expected loss resulting from non-compliance to avoid tax losses.

Notice also that, even if public goods are valued by citizens (Deci and Ryan 1985; Frey 1997; Torgler 2002, 2005; Alm and Torgler, 2011), other intrinsic motivations to compliance are completely neglected because the “maximizing utility” framework is an extremely narrow view of human actions. Instead, one can propose a more natural scheme based on reciprocity and trust in governments as core motivations, where tax morale is understood as a voluntary commitment to comply with paying taxes (Alm and Torgler, 2011) which captures nonpecuniary and intrinsic motivations for tax compliance (Levi, 1988; Fukuyama, 1995; Kaufmann, Kraay and Zoido-Lobaton, 1999; Rose-Ackerman, 1999).

What explains tax morale? In an effort to test theories of political behaviour, I address this question exploring the relationship of this variable with approval and perception of the executive's performance. If an executive act in a trustworthy manner, it is expected that citizens will behave alike

¹ While tax evasion refers to breaking the law by eluding taxes, tax avoidance is the legal underrepresentation of financial information to ease tax burdens. This paper will focus on the broader concept of tax that includes evasion and avoidance.

in their duty to pay taxes. Moreover, government's performance has a positive effect on tax reporting behaviour, as the perception that taxes are used for socially desirable purposes increases (Roth et al., 1991). This could be important for tax revenues in developing economies, as earlier studies in Latin America found that on average 32.4 per cent of respondents expressed a view that "taxes are ill-spent" as the main reason for people to evade payment (Torgler, 2005).

The main hypothesis of this chapter is that there is a significant impact of intrinsic motivations on citizen's willingness to pay taxes (tax morale). Hence, citizens comply not only because they fear punishment of their government but also, because they create their own perceptions about government's performance in the use of taxes and based on this, they have incentives – or disincentives – to comply.

Bogotá provides an interesting case to test these ideas because the city has experienced important variations in the mayors' perceived performance and approval. Moreover, the survey "Bogotá Como Vamos" has captured information about four different governments since 1998 allowing us to explore the concept of tax morale with a rich set of covariates, including socioeconomic variables and civic attitudes, overcoming the limitations of the national perception of corruption surveys.

My results show that both the mayors' approval ratings and perceived performance present a significant positive correlation with tax morale: passing from disapproval to approval, increases the odds of being in a higher category in tax morale relative to a lower category by 1.07 times. Besides, increasing the perception of performance by one unit makes the odds of being in a higher category in tax morale 1.02 times higher.

The paper has five sections and is structured as follows: in Section 3.2, I present a general overview of the main theoretical and empirical literature in tax compliance and tax morale. Then, Section 3.3 provides a descriptive analysis of the main socioeconomic and geographical features of my data and a close examination of the responses on tax morale, mayors' approval rates, and perceived performance based on Bogotá Como Vamos' data. Subsequently, Section 3.4 presents empirical evidence based on ordered logit models. Finally, the conclusions offer some closing remarks.

3.2 Tax morale: coercion or cooperation?

For half a century, policies seeking to increase tax compliance have focused on outbalancing non-compliance through fines for evaders following the theoretical economic model of tax evasion of Allingham and Sandmo (1972). This model assumes that taxpayers conform with the Von Neumann-Morgenstern utility axioms. Under this principle, taxes are an unavoidable burden² and taxpayers make a rational calculation to pay fewer or no taxes at all, while minimising the likelihood of detection. The rational choice assumption of tax policies faces several setbacks. First, the model has its foundations in the economic theory of crime (Becker, 1968) that is why the theory underestimates the fiscal and tax policies at the core of society's social contract, where citizens allow the state to collect revenues and provide public goods. Frey (1997) posits that a high punishment level is a signal of distrust in the government and low tax morale, and thus empirical studies such as Torgler (2005) find the effect of the fear of detection on the likelihood of paying taxes is insignificant.

Secondly, the model underpredicts the number of honest taxpayers. It has been empirically demonstrated that compliance levels under low coercion environments are higher than the ones that Allingham and Sandmo's framework would predict (Mueller, 1989; Torgler, 2007). Hence, the model omits the theory of human nature to follow rules based on experience (such as filling in a tax form every year) that might explain the cooperative behaviours of taxpayers, rather than acting in the line of the standard economic rational choice theory of cheating.

Sandmo (2005) revisits the model he designed with Allingham and enquires to what extent rational choice mechanisms explain compliance. The author concludes that a "stronger extrinsic incentive to truthful reporting reduces the intrinsic incentive to behave honestly" (Sandmo, 2005, p. 650). Other authors including Kiser and Ostrom (1982) and Ostrom (2000) state that intrinsic relations such as trust or beliefs will create better state-citizen relations, thus participatory behaviours are stable and require fewer enforcement measures.

² The famous quote from Benjamin Franklin's letter to Jean-Baptiste Leroy in 1789 illustrates this idea "[...] in this world nothing can be said certain, except death and taxes" (Smyth, 1907, p. 69)

Among the intrinsic motivations that authors name as important are civic duty fulfilment (Luttmer and Singhal, 2014) and sense of belonging (Margolis, 1982). Tax morale, understood as voluntary commitment to comply with paying taxes (Alm and Torgler, 2011), captures nonpecuniary and intrinsic motivations for tax compliance. From the political economy perspective, tax morale might depend on the type of institutional settings and the degree of trust of the citizens in the government. In that sense, tax morale is a consequence of the trust that citizens reveal to their rulers. Levi (1988) argues that efforts for enforcement are necessary when taxpayers do not perceive their governments as trustworthy. Hence, the study of the determinants of tax morale provides a perfect scenario to understand the gap between formal institutions (legal rules) and informal institutions (socially shared rules not officially sanctioned) where a wide gap between the two corresponds to low levels of tax morale (Williams and Horodnic, 2016).

3.2.1 Citizens' perceptions and tax morale: some empirical findings

Tax morale has gained relevance in the literature as it has proven useful to understanding taxpayer's behaviour. Its findings offer applications to improve compliance (Daude, Gutierrez and Melguizo, 2012). In terms of data, surveys constitute the most common approach to analysing tax attitudes. Previous studies at cross-country and regional level have explored variation in the level of tax morale using surveys such as the World Values Survey (Torgler, 2003; Daude et al., 2012), the European Social Survey (Lago-Peñas and Lago-Peñas, 2010), Latinobarometer (Torgler, 2003, 2005), and Afrobarometer (D'Arcy, 2011) among others.

At the national level, there are contributions for the cases of Italy (Barone and Mocetti, 2011), Germany (Torgler and Werner, 2005), and Russia (Yew et al., 2014). Studies at the city level are scant, however, with two relevant contributions that capture individual attitudes and perceptions of the government performance and public good provisions from Bahir Dar in Ethiopia (Tehulu and Dinberu, 2014) and the city of Hue in Vietnam (Jahnke, 2015).

The empirical relation between tax morale and trust in governments provides important insights to understand the way states relate with their citizens. Torgler (2003) studies the determinants of tax morale in transition countries in the late nineties. The author examines Central and Eastern European countries using the World Values Survey analysing questions of attitudes towards taxes.

Using ordered probit regressions that include demographic factors, marital and employment status, the findings show that trust in the legal system and government have a significant positive effect on tax morale.

Moreover, Torgler (2005) seeks to identify systematic factors that affect tax morale based on trust in the president using data from Latinobarometer and the World Values Survey in 18 Latin American countries. Estimating a weighted ordered probit regression model, findings suggest that trust in the president and officials and perception of law abidance have a positive effect on tax morale. Besides, the author finds that tax burden, lacking honesty and corruption also affect tax morale.

Other authors explore contextual and socioeconomic determinants of tax morale. For example, Lago-Peñas and Lago-Peñas (2010) find that tax morale varies systematically with socio-demographic characteristics, personal financial experiences as well as political attitudes. Using a multi-level regression model with the European Social Survey data the authors conclude that there is a positive association of tax morale and trust in politicians.

Similarly, Daude et al. (2012) revisit willingness to pay taxes in Latin American countries based on the World Values Survey. Based on an OLS regression estimate, the authors find that socioeconomic and personal conditions including religion, ethnic background and satisfaction with democracy are relevant to understand tax morale. Additionally, the authors discuss the role of public policy performance showing that greater dissatisfaction with public services such as education or health care leads to lower tax morale.

Country specific studies, such as the one conducted by Barone and Mocetti (2011), find that motivations towards paying taxes are higher for governments that are efficient in public spending. By looking at tax morale in Italian municipalities, the authors use OLS regression models based on a specially designed survey to capture tax morale and balance sheets of local governments to measure performance. Interested in understanding the implications of public policy performance on tax morale, Torgler and Werner (2005) study how fiscal autonomy affects the latter in Germany. Using survey data, the authors estimate a weighted ordered probit model and find that higher fiscal autonomy in federal states and municipal governments leads to higher tax morale.

Yew et al. (2014) examine individual tax morale in Russia based on survey data of the World Values and European Values Survey. Using a probit regression model, the authors concluded that the introduction of a flat tax did not change tax morale in Russia; instead, socioeconomic, and demographic variables, trust in government and the legal system, and national pride are significant determinants of tax morale.

Finally, Tehulu and Dinberu (2014) identify factors that determine tax compliance in the city of Bahir Dar in Ethiopia. The authors design a survey to capture attitudes towards tax morale and perceptions of the city government performance when facing audits. The study concludes that there are nonsignificant impacts of audit probabilities on tax compliance. Moreover, old people will comply less if they perceive unfair conditions in fuel and electricity prices. Jahnke (2015) explores the effects of reciprocity from government and other taxpayers on tax morale. Using a consumer survey conducted in the city of Hue in Vietnam, he finds that there is a significant negative correlation between tax morale and the perceived number of other Vietnamese citizens that cheat taxes.

3.3 Citizen perception of the city government of Bogotá

3.3.1 Data and methodology

“Bogotá Como Vamos” is a civic society programme that aims to study the evolution of public policies, analysing citizens’ perception of the local government’s public management and key public agenda issues to improve the quality of life in the city. “Bogotá Como Vamos” has surveyed Bogotá’s citizens covering questions on public goods satisfaction, community engagement, and political perceptions, among others.

The dataset interviewed 27,793 citizens from 1998 to 2016. Women represent 51.2% of the sample, and age groups are homogeneously distributed as follows: 18–25 (19%), 26–35 (20%) 36–45 (19%), 46–55 (17%), 55+ (25%). Most of the sample are from socioeconomic strata 2 and 3 (52%), while

10% are in strata 1 and 12.8% in strata 5 and 6. The sample is homogeneously distributed in all the 19 city wards.^{3 4}

Most of the people interviewed classified themselves as workers (48%), 8.3% are students, 12.45% report unemployment, 22.7% are housekeepers, and 8.6% are retired, while 51.4% of the households declared to having children. With respect of the household economic situation, 27% declared that the situation has improved, 45% of the respondents declared that the situation remains the same, 28% expressed that the situation has worsened.

Individual and collective tax morale perceptions in Bogotá

In the survey, there are two questions regarding tax morale. On the one hand a module about civic duties enquires about the way citizens perceive other co-citizens' behaviours, asking: "how do you perceive inhabitants of the city regarding their responsibility in paying taxes?"⁵ I define this question as relating to collective tax morale because it indicates the perception of others. However, the variable indirectly captures the respondents' own tax morale, as most citizens base their beliefs about others on their own actions. A second section of the module asks, "how do you perceive your responsibility in paying taxes?" (individual tax morale). Although the wording of the first question is not bias-free, it helps to capture a citizen's tax morale preference that might be unexpressed by using more explicit wording.

This is because, as suggested by the survey methodology theory, when asking about topics that are sensitive and private in nature (and tax payment is one of them) people will feel social pressure from the interviewer and not reveal non-compliance. Moreover, authors including Blair et al. (2014) suggest that, in these cases, people tend to reveal their true preferences only in an indirect questioning setup. In that sense, my empirical analysis is mostly based on collective tax morale for methodological and sample size reasons: the individual tax morale question was included in the

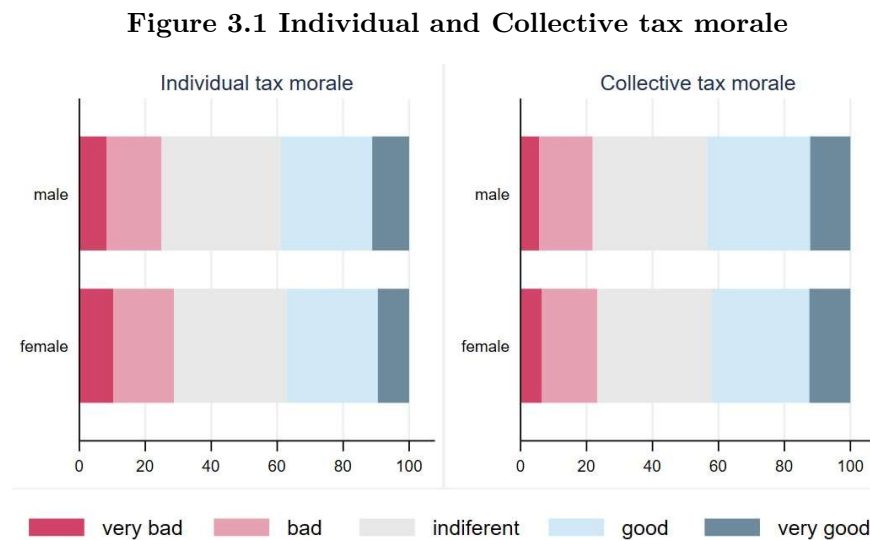
³ Socioeconomic strata are an official classification method to divide population according to social and economic characteristics of the properties or houses people dwell. The classification is divided in six categories: 1: low-low, 2: low, 3: medium-low, 4: medium, 5: medium-high, 6: high.

⁴ The survey reports dedicate a section specifying, among other points, that the sample distribution is representative of the population, thus there are not doubts regarding sample selection bias.

⁵ The question in Spanish is: ¿cómo cree Usted que se comportan los habitantes de Bogotá en su responsabilidad en el pago de impuestos?

surveys for 2013 and 2014 only, while the sample size for the collective tax morale is considerably larger because it covers all government periods.

As expected, the mean value of individual tax morale (4.14) is higher than collective tax morale (3.26).⁶ As it can be seen, in Figure 3.1 there are not any significant differences in the tax morale rates of male and female responses. This result differs from the experimental studies, including not only from Baldry (1987) and Alm, Jackson and McKee (2006) that found greater tax compliance among women, but also from Andreoni and Vesterlund (2001) and Brown and Hummels (1993) that found higher contributions to charities and public goods for the female group.



Source: Author’s own elaboration based on the survey “Bogotá Como Vamos”, 1998-2016

Note: The question of tax morale presents a change only for the year 2009 in the series explained by a change in the wording of the options from “very bad” to “very good” options to “very important” to “not important at all”.

Vote shares, programmes of government and approval rates

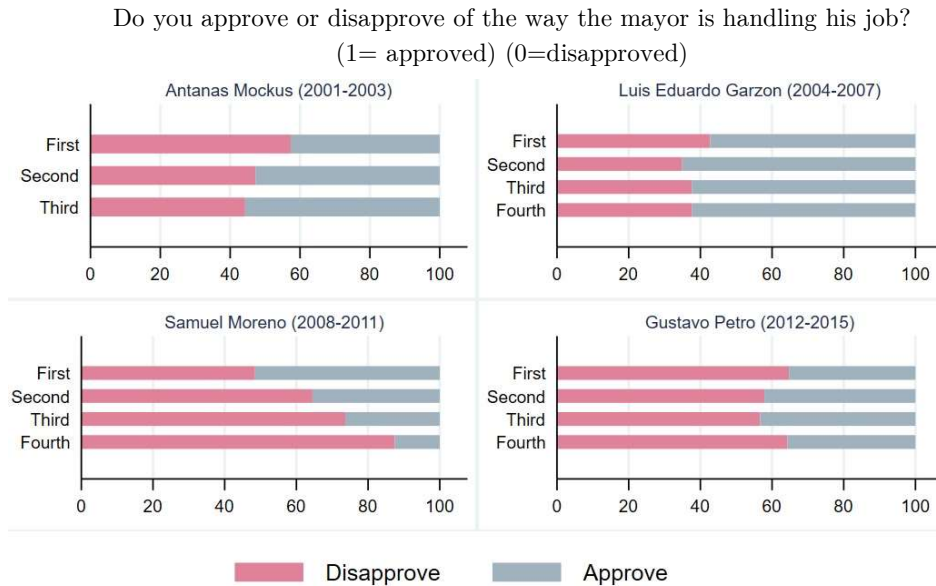
For the period analysed, the elected mayor’s vote share is an important predictor of approval rates in the first years of governments. Moreover, Figure 3.2 shows that some mayors increase their approval rates, whereas for others the approval rate was lower each consecutive period. Implementation of specific policies can explain possible variations in approval through the period of

⁶ For both questions there are five possible answers recorded as integer values 1 to 5.

government; therefore, the next section presents the main policies implemented alongside the historical approval.

Mockus represented a civil society coalition⁷ and his government policies implemented campaigns of good citizenship. He won with 43.7% of the votes and increased approval rates during his government with an average 50.3% approval rate. Luis Eduardo Garzon had the highest average approval rate (61.7%) of the mayors analysed. He won his election with 46.2% of the votes representing the leftist party Polo Democrático Alternativo; at this point, this was the highest office a member of the party and the left had achieved in its history. Garzon’s government priority was wealth redistribution.

Figure 3.2 Approval rates per mayor during the period of government



Source: Author’s own elaboration based on the survey “Bogotá Como Vamos”, 1998-2016

Samuel Moreno was the second mayor elected representing Polo Democrático Alternativo with 43.7% of the votes. Moreno aimed to continue the social programmes started in Garzon’s administration. Despite an initial approval rate of 51.5%, Moreno experienced dramatic drops in approval rates facing corruption allegations,⁸ ending with the lowest approval in decades. Gustavo Petro won the mayoralty of Bogotá with the lowest vote share among the mayors analysed (32.2%)

⁷ Independent Social Alliance - ASI, Association of Users of UPAC loans - ANUPAC and the Visionary Movement.

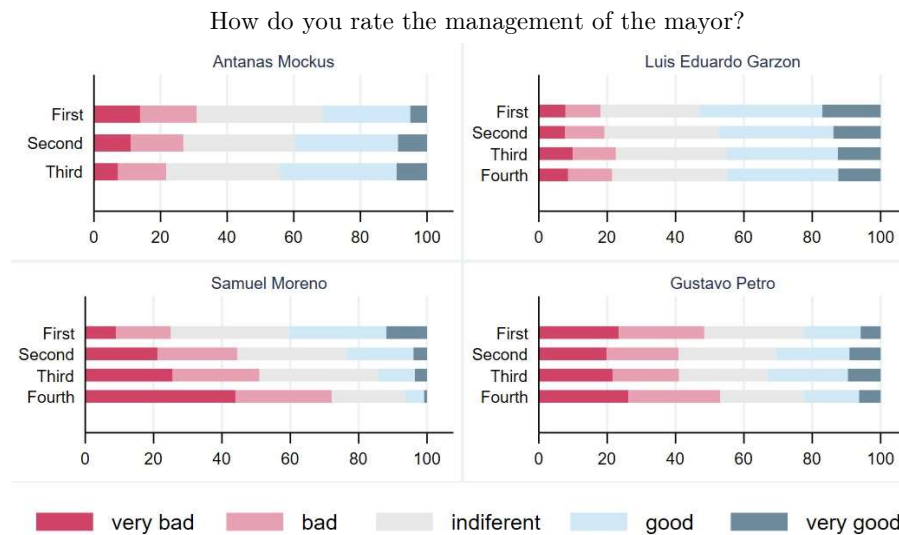
⁸ Moreno was prosecuted during the spring of 2019 for embezzlement of public funds of massive infrastructure projects in the city.

representing the independent but leftist party Progresistas.⁹ Petro’s administration continued with social programmes and expanded them to new initiatives such as a 6m³ free water service for low-income households. Petro’s average approval rate was 39.1%, and these low approval rates remained invariant during his government.

Citizens’ perceptions of performance

There is a great variation in perceived performance rates within administrations. For instance, 38.3% of interviewed citizens rated Mockus’ administration as good or very good, 35% were indifferent and 26.4% declared his perceived performance as bad or very bad. Furthermore, while the percentage of citizens that gave a bad or very bad rating in the first period declined, the share of good and very good rates increased through time. This result might suggest that public opinion was not initially aligned with Mockus’ views but, as he implemented his programme of government, the perception of his performance improved.

Figure 3.3 Mayors’ perceived performance during the period of government



Source: Author’s own elaboration based on the survey “Bogotá Como Vamos”, 1998-2016

In the case of Garzon, for all the government period, 47.4% of the citizens interviewed rated his perceived performance as good or very good and 20.3% as bad or very bad. As shown in Figure 3.3, his performance ratings are stable across the period of government. Conversely, Moreno’s

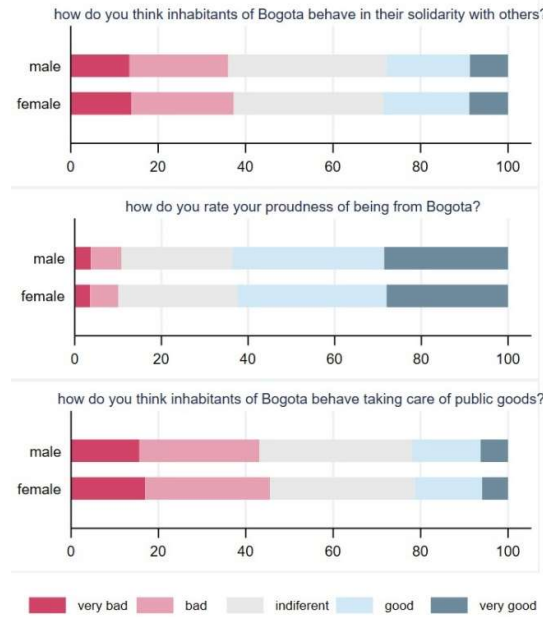
⁹ Despite Petro was elected under the label Progresistas he was for most of his previous political career a member of Polo Democrático Alternativo.

perceived performance consistently got worse through time. For instance, 40% of the citizens perceived his performance as good or very good in 2008, while only 1.35% provided a rating as good or very good by the end of his government.

Control variables: Socioeconomic characteristics and civic values

As mentioned before, “Bogotá Como Vamos” has a rich set of demographic and socioeconomic variables at individual level that could be correlated with mayors’ approval ratings or perceived performance and that are included as controls.

Figure 3.4 Civic values questions 2001–2015



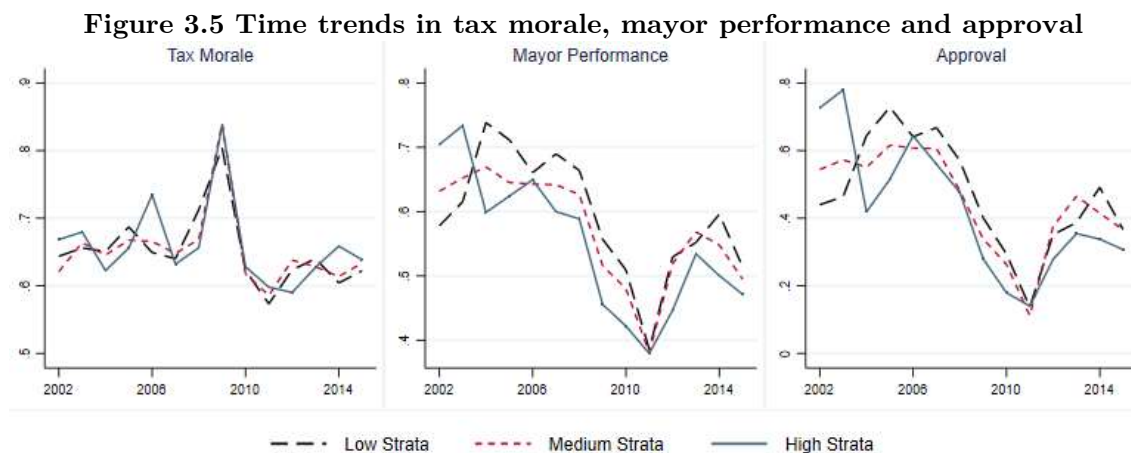
Source: Author’s own elaboration based on the survey “Bogotá Como Vamos”, 1998-2016

To analyse the civic attitudes of citizens, I take advantage of a complete module designed to capture the way how citizens report behaviours such as solidarity, pride and looking after public goods. These variables have been important in previous literature. For instance, Orviska and Hudson (2002) evaluating the British Social Attitudes Survey in 1996 indicate that civic perceptions have an impact on opinions of whether tax evasion is right or wrong. In this sense, I created a continuous index of civic attitudes ranging from 1 to 5 based on a weighted average of the responses of solidarity, pride and public good provision using principal component analysis to determine the optimal weights (see Appendix 3.2 for discussion).

Overall, citizens in Bogotá are proud of the city but felt that others lack solidarity and do not look after public goods. For instance, between 2001–2015, 63.3% of the citizens surveyed in Bogotá declared being proud or very proud of the city and only 9.18% answered they were not very proud or not proud at all. The variable solidarity provides a different picture, with 28.1% rating Bogotans as solidary and 36.2% considering Bogotans as not solidary. Close to 44% of Bogotans have a negative opinion of the way other citizens look after public goods, with only 5.77% considering that citizens' behaviour is good and very good in this regard. Figure 3.4 illustrates these trends by gender, demonstrating that the mean value and distribution in categories between male and female respondents do not present significant differences.

An overview of the main relationship

For the case of Bogotá, Figure 3.5 provides a general view of the trend of tax morale and the mayors' perceived performance and approval in the four government periods studied and for three socioeconomic strata groups. Perceived performance and approval can be potential determinants of tax morale. For instance, in the period 2008–2012 when the Samuel Moreno scandals happened both approval and the mayor's performance can be seen to fall dramatically, and a similar trend could be observed for tax morale.



Source: Author's own elaboration based on the survey "Bogotá Como Vamos", 1998-2016 Note: The question of tax morale presents a change only for the year 2009 in the series explained by a change in the wording of the options from "very bad" to "very good" options to "very important" to "not important at all".

As depicted from Figure 3.5, approval, perceived performance, and tax morale trends go in the same direction for some government periods. They are also relatively similar for different socioeconomic strata. However, this is not enough evidence to establish a relationship. To test the relationship, I calculate ordered logit estimates as described below.

3.3.2 Empirical Model

To test the relationship between tax morale and the mayors' approval ratings or perceived performance, I estimate an ordered logit model given the discrete nature of the responses. I assume that the perceived citizens' responsibility for paying taxes is a latent variable TM_i^* of tax morale for which I observe a variable TM_i with ordered discrete answers in the interval (1,5), with 5 being the maximum rate. Its relationship with approval and perceived performance rates are modelled by equation 1. To minimise omitted variable bias, I add the control variables suggested before. Finally, it is important to mention that all the models estimated consider year dummies to control for time effects identical to all citizens.

$$TM_i^* = \beta' \mathbf{Rating}_i + \delta_t + CV + \varepsilon_i$$

$$\text{where } TM_i = \begin{cases} 1 \text{ (very bad)} & \text{if } TM_i^* < \mu_1 \\ 2 \text{ (bad)} & \text{if } \mu_1 < TM_i^* \leq \mu_2 \\ 3 \text{ (indiferent)} & \text{if } \mu_2 < TM_i^* \leq \mu_3 \\ 4 \text{ (good)} & \text{if } \mu_3 < TM_i^* \leq \mu_4 \\ 5 \text{ (very good)} & \text{if } TM_i^* > \mu_4 \end{cases} \quad (1)$$

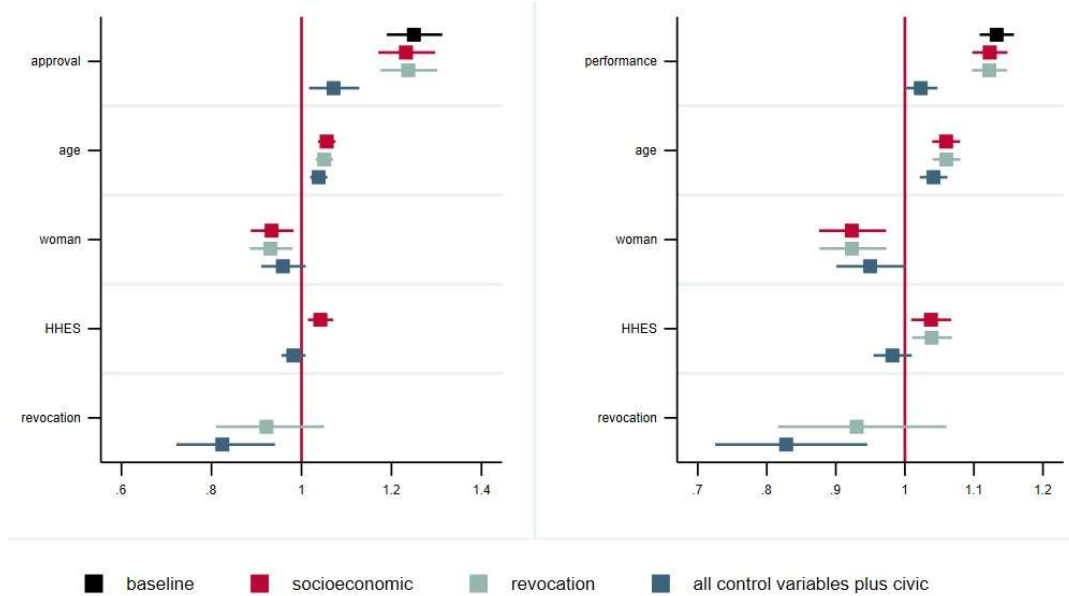
In equation 1, $Rating_i$ is rates of approval or perceived performance, the parameters $\mu_1 \dots \mu_4$ are endpoints of the question categories, δ_t are time fixed effects, CV represents several control variables, and the error term is ε_i .

3.4 Findings

Figure 3.6 summarises the main results. The first model indicates that there is a positive and significant relation between a mayor's approval rate and tax morale. A similar result is found for perceived performance in the right-hand side of the graph. The odds ratios in model 1 shows that

passing from disapproving to approving makes the odds of being in a higher category in tax morale relative to a lower category 1.23 times higher.

Figure 3.6 Odds ratio estimates
Point estimates and 95% confidence intervals



Source: Author's own elaboration Note: Baseline: No controls. Model 2: Socioeconomic control variables: strata, age, woman, occupation, children, Household Economic Situation (HHES). Model 3: age woman occupation children revocation HHES. Model 4: all control variables plus civic. All models have year fixed effects (see Appendix 3.3).

Including socioeconomic control variables (models 2 and 3) results in slightly lower marginal effects of approval on tax morale. For other covariates, results indicate that the older the citizen interviewed, the higher the collective tax morale: increasing age by one year makes the odds of being in a higher category in tax morale 1.06 times higher. There is also a positive relation between declaring a good economic situation and the chances of being in a higher category in tax morale. As proposed by many authors, there is a positive and important in magnitude relation between civic attitudes and tax morale: model 4 illustrates that increasing one point the civic index increases the odds of being in a higher category in tax morale 2.7 times relative to be in a lower category of tax morale.

The inclusion of the civic index decreases further the effect of approval on tax morale, indicating that civic attitudes was highly correlated with approval. In this last estimate, that passing from disapproving to approving makes the odds of being in a higher category in tax morale relative to a

lower category 1.07 times higher. A similar result is obtained for performance, increasing perceived performance by one unit out of five, makes the odds of being in a higher category in tax morale relative to a lower category 1.02 times higher.

Models of perceived performance and tax morale show a positive relation: better perception of a mayor's performance is associated with higher levels of tax morale. This result is consistent with other studies such as Daude, Gutierrez and Melguizo (2012). Model 1 shows that increasing one unit out of five in the perception of performance makes the odds of being in a higher category in tax morale relative to a lower category 1.13 times higher.

Including socioeconomic variables, the results are similar to the estimations for approval. In age the results are positive, significant, and similar to the estimations for approval. Being a woman increase the odds of being in a high category of tax morale by 0.923, that is, it reduced the odds. Perceived household economic situation has a positive relation with tax morale, and this result is significant for models 2 and 3 and is not significant only in model 4, indicating that the variable is correlated with civic attitudes. The coefficient of civic attitudes is significant and indicates that increasing one point in the index increases the odds of being in a higher category in tax morale by 2.69.

The results of the variable woman are in line with some previous studies, showing women have lower tax morale¹⁰ (D'Arcy, 2011; Torgler, 2005; Daude and Melguizo, 2010). However, literature is not unequivocal on the effects of gender; for instance, a group of empirical studies including Alm and Torgler (2011) and Williams and Horodic (2016) posit that tax morale is higher for women.

As mentioned, the self-perceived economic situation has a positive relation with tax morale in both models of approval and perceived performance. This result is coherent with Levi and Stacks' (2009) finding that individuals who declare satisfaction with their financial position do not defend tax evasion. However, this variable is context sensitive. For example, Gaviria et al. (2007) discuss that for the Latin American, those with higher incomes tend to declare lower tax morale, opposing redistributive policies.

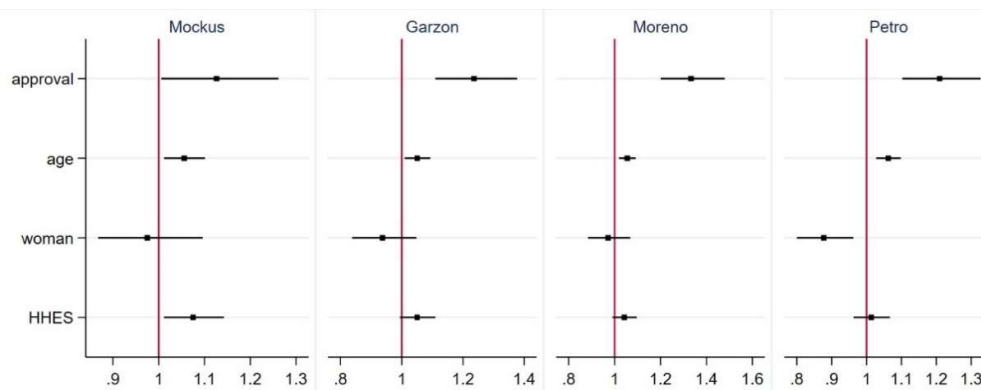
¹⁰ For details of the coefficients see Appendix 3.3

The result in age is relatively consistent with the literature. Studies in the same direction include Jahnke (2015), Torgler (2005) and Hug and Spörri (2011). The effect might suggest that older people have met their material needs and are prone to contribute towards their communities' welfare.

3.4.1 Tax morale per government period and individual tax morale

These findings are robust to a number of other specifications. For instance, the models were tested for separate government periods to see if there was change under different types of administration. Although this analysis cannot be directly associated with political preferences, it gives a sense that mayors of right and left parties are all subject to changes in their approval and perceived performance. Also, the socioeconomic control variables show a similar pattern.

Figure 3.7 Odds ratios for approval ratings for each mayor
Point estimates and 95% confidence intervals

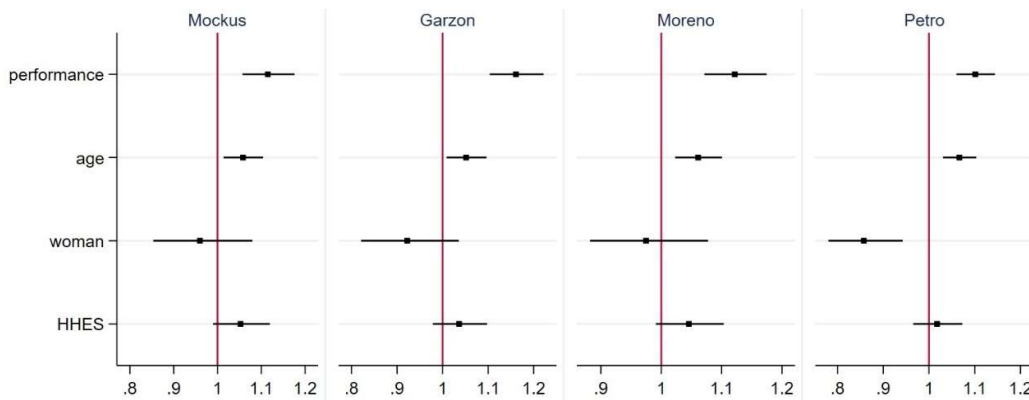


Source: Author's own elaboration Note: All the models have time fixed effects. For detail of estimations, see Appendix 7, Table A.3.6.

In line with previous findings, estimations per government period show a positive relationship between approval rates and collective tax morale. Figure 3.7 provides a comparative summary of the coefficients per mayor. The odds ratio in estimation in Appendix 3.7, show that passing from disapproving to approving increases the odds of being in a higher category in tax morale relative to a lower category, for the respective mayors: the results are 1.26 (Mockus), 1.23 (Garzon), 1.33 (Moreno) and 1.21 (Petro) times higher. For other covariates, the results are in the same direction: increasing one year of age increases the odds of being in a higher category of collective tax morale, whereas female respondents decrease the odds of being in a higher category of collective tax morale.

Besides, perceptions of better economic status increase the odds of being in a higher category of tax morale. With respect to perceptions of government performance, the results per government period are also in the same direction as the findings presented previously, showing a positive and significant relationship between perceptions of performance and collective tax morale. As observed in Figure 3.8, increasing the perception of performance by one unit out of five increases the odds of being in a higher category in tax morale relative to a lower category: the individual mayor's results are 1.26 (Mockus), 1.23 (Garzon), 1.33 (Moreno) and 1.21 (Petro) times higher.

Figure 3.8 Odds ratios for perceived performance for each mayor Point estimates and 95% confidence intervals



Source: Author's own elaboration Note: All the models have time fixed effects. For detail of estimations, see Appendix 8, Table 3.A7.

Finally, it is worth mentioning that approval and perceived performance have no statistically significant effect on individual tax morale in any of the several specifications proposed (see Appendices 5 and 6). This could be a result of the reduced sample size but more likely of the direct nature of the tax compliance question. As discussed before, there are important differences in answers to both individual and collective tax morale questions, with most of those interviewed affirming they were very responsible with their own tax payments.

3.5 Conclusions

This paper addresses the potential relation between government approval and tax morale. The latter concept, as an argument in taxpayers' decision-making, has attracted little consideration in tax revenue policies seeking higher compliance. Instead, coercive strategies have been in place assuming a battle of taxpayers and government revenue agencies. The ineffective policies highlight

the complexity of the problem and the importance of choosing correct policy options, where intrinsic motivations are core elements in taxpayers' compliance decision-making. However, understanding people's behaviour when facing tax payment responsibilities is still an unexplored area of research.

This paper enquires about the determinants of tax morale in Bogotá. It considers the roles of government approval and perceived performance and their impact on tax morale. This paper approaches the theoretical problem of co-operation explained by North (1991) to understand what conditions explain voluntary co-operation outside the Hobbesian solution of coercive strategies by the state to create co-operative behaviours. Using data from the "Bogotá Como Vamos" survey, I found that better approval and perceived performance of public management have a positive relation with tax morale. Regarding socioeconomic conditions, the models show that people who declare to be in a better economic situation also have higher levels of tax morale. Moreover, older citizens are more likely to have higher tax morale, as are housekeepers and retired people. Civic values such as solidarity, city pride and care of public goods have a positive relation with tax morale.

These results offer an interesting insight for good governance because they consider the taxpayers' expectations regarding the taxes they have paid. Since the main funding source for governments are taxes, whether the perception of public management is good or not will create a pressure for mayors to provide the public goods and services that they are supposed to deliver; otherwise, citizens will be less willing to cooperate, feeling like unvalued customers who are not getting a decent service in return for payment.

Empirical analysis considers attitude questions; however, including socioeconomic and demographic characteristics and a variety of mayors in the sample reduces subjective components. One key element for future research is to consider the objective measures of taxation and compare them with tax morale measures. In this case, Bogotá is also an interesting example because since the year 1998 it has implemented a voluntary contributions programme. The city government has received \$2.6 million dollars between 2000 and 2017 from this contributions scheme that has been used in public goods such as parks, cycle paths and city infrastructure.

The findings indicate that the approval and perception of performance affect different types of administrations and ideological positions in a similar way. This is a positive result for democracy because all political positions are apparently subject to the same level of accountability.

For future research projects, civic attitudes present important opportunities to explore tax morale. The data for Bogotá shows that despite citizens revealing that they are proud of the city, there are bad ratings in attitudes such as solidarity and care of public goods. This might suggest a disconnection between attempts to create identity and civic values and motivations to translate those intentions into concrete actions. This aspect motivates future studies to understand such disconnection and provide some insights for public policies to address those trends.

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A.3 Appendix

A.3.1 Description of variables

Table A.3.1 Variables included in the model and survey questions

Variable	Type	Question	Scale
Tax Morale	Dependent	How do you think inhabitants of Bogotá behave in their responsibility for paying taxes?	1: Very bad 5: Very good The person can choose between 1 to 5
Perceived performance	Independent	How do you rate the management of the mayor?	1: Very bad 5: Very good The person can choose between 1 to 5
Approval	Independent	Do you approve or disapprove of the way the mayor is handling his job?	1: approves 0: disapproves
Strata	Control	What is your socioeconomic strata?	1 to 6
Age	Control	In which age range are you?	1: from 18 to 25 years 2: from 26 to 35 years 3: from 36 to 45 years 4: from 46 to 55 years 5: more than 55 years
Woman	Control	Gender	1: female 0: male
Occupation	Control	What is your occupation?	1: worker 2: student 3: unemployed 4: housekeepers 5: retired
Children	Control	Are there children between 0 to 17 years old in this household?	0: no children 1: children
Household economic situation	Control	During the last year, describe the economic situation of your household	1: it has gotten much worse 2: it has somehow got worse 3: it stayed the same 4: it has somehow improved 5: it has improved a lot
Year	Control	Year of the survey	From 1998 to 2016
Localidad (ward)	Control	Ward of the city surveyed	1: Usaquén, 2: Chapinero, 3: Santafé, 4: San Cristóbal, 5: Usme, 6: Tunjuelito, 7: Bosa, 8: Kennedy, 9: Fontibón, 10: Engativá, 11: Suba, 12: Barrios Unidos, 13: Teusaquillo, 14: Los Mártires, 15: Antonio Nariño, 16: Puente Aranda, 17: Candelaria, 18: Rafael Uribe, 19: Ciudad Bolívar
Revocation	Control	Whether the mayor faced or not a revocation process during his mandate	1: yes 0: no

Source: Author's own elaboration based on Bogotá Como Vamos Survey Questions

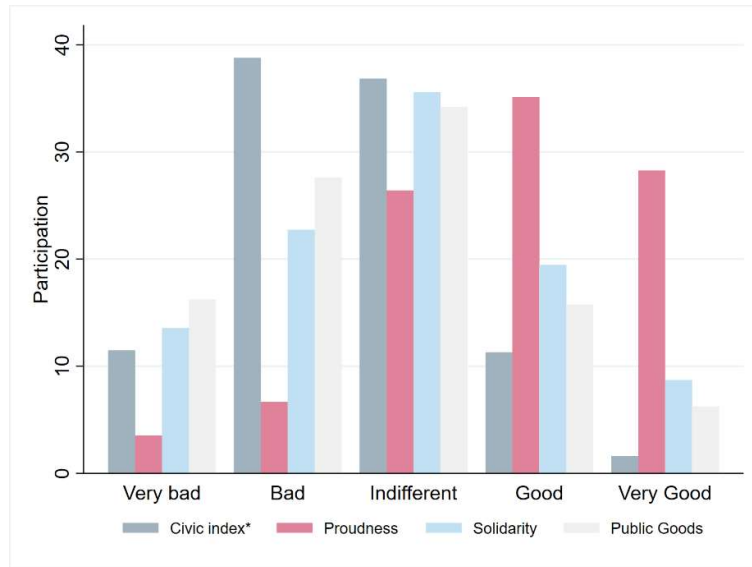
A.3.2 PCA for civic attitudes index

I compute the principal components for the variables: solidarity, proudness, and public goods care. These components are three additional variables that capture the same variability observed in the original variables. The correlation between the three variables and the first principal component gives us an idea of the relative importance of each variable. My results indicate that the highest weight is for solidarity followed by proudness and public goods care. The index is described in the equation A.3.1:

$$\text{civic index} = 0.411\text{solidarity} + 0.17 \text{ proudness} + 0.410 \text{ pg care} \quad (\text{A.3.1})$$

Figure A.3.1 illustrates that proudness is the category with the highest share of responses in good and very good. For solidarity and public goods care the high marks are relatively lower. However, considering the weights from the calculation of the principal components depicted in equation 3.A1, solidarity and public goods care are more important in the index than proudness, thus the civic index shows the highest rates in the categories of bad and indifferent.

Figure A.3.1 Civic index and components



Source: Author's own elaboration

* the civic index was rounded towards the smallest integer for this graph.

A.3.3 Estimation results for approval ratings

Table A3.2 OLM Estimations effects of Mayors' Approval Ratings on Tax Morale
Dependent Variable: Tax Morale

	(1)	(2)	(3)	(4)
Approval	1.250*** (0.0315)	1.232*** (0.0322)	1.237*** (0.0322)	1.071*** (0.0284)
Strata		1.009 (0.0101)		0.991 (0.00998)
Age		1.056*** (0.00991)	1.051*** (0.00968)	1.038*** (0.00986)
Woman		0.934*** (0.0243)	0.931*** (0.0242)	0.959 (0.0252)
Occupation		1.033*** (0.00987)	1.031*** (0.00981)	1.018* (0.00985)
Children		1.025 (0.0266)	1.016 (0.0257)	1.025 (0.0269)
HHES		1.042*** (0.0143)		0.982 (0.0137)
Revocation			0.922 (0.0611)	0.824*** (0.0557)
Civic				2.737*** (0.0507)
/cut1	0.0724*** (0.00395)	0.101*** (0.00831)	0.0868*** (0.00565)	0.986 (0.0917)
/cut2	0.328*** (0.0163)	0.464*** (0.0367)	0.399*** (0.0243)	5.035*** (0.460)
/cut3	1.612*** (0.0791)	2.281*** (0.181)	1.960*** (0.119)	28.75*** (2.685)
/cut4	9.574*** (0.498)	13.65*** (1.112)	11.73*** (0.745)	203.5*** (19.92)
Observations	22,891	21,424	21,430	21,390
Controls	N	N	Y	Y
Year FE	Y	Y	Y	Y

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

A.3.4 Estimation Results for perceived performance

Table A.3.3 OLM Estimations effects of Perception of Mayors' performance on Tax Morale

	Dependent Variable: Tax Morale			
	(1)	(2)	(3)	(4)
Performance	1.133*** (0.0126)	1.123*** (0.0130)	1.122*** (0.0130)	1.023* (0.0121)
Strata		1.011 (0.0104)		0.991 (0.0103)
Age		1.060*** (0.0103)	1.060*** (0.0103)	1.042*** (0.0102)
Woman		0.923*** (0.0248)	0.924*** (0.0248)	0.950* (0.0258)
Occupation		1.032*** (0.0102)	1.031*** (0.0101)	1.020* (0.0102)
Children		1.024 (0.0275)	1.017 (0.0266)	1.025 (0.0278)
HHES		1.038*** (0.0148)	1.039*** (0.0147)	0.982 (0.0142)
Revocation			0.930 (0.0621)	0.828*** (0.0560)
Civic				2.699*** (0.0520)
/cut1	0.0936*** (0.00583)	0.127*** (0.0113)	0.122*** (0.0101)	0.988 (0.0969)
/cut2	0.423*** (0.0245)	0.584*** (0.0502)	0.564*** (0.0445)	5.030*** (0.485)
/cut3	2.106*** (0.122)	2.913*** (0.251)	2.808*** (0.222)	28.93*** (2.850)
/cut4	12.66*** (0.769)	17.70*** (1.569)	17.07*** (1.397)	206.6*** (21.30)
Observations	21,566	20,099	20,099	20,069

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

A.3.5 Mayors' Approval Ratings on Individual Tax Morale

Table A.3.4 OLM Estimations effects of Mayors' Approval Ratings on Individual Tax Morale

Dependent Variable: Individual Tax Morale				
	(1)	(2)	(3)	(4)
Approval	0.988 (0.0673)	0.980 (0.0677)	0.975 (0.0669)	0.954 (0.0665)
Age		1.229*** (0.0316)	1.212*** (0.0307)	1.226*** (0.0315)
Woman		0.865** (0.0606)	0.870** (0.0608)	0.871** (0.0611)
Strata		1.128*** (0.0309)		1.125*** (0.0309)
Occupation		1.021 (0.0268)	1.008 (0.0263)	1.019 (0.0268)
Children		1.010 (0.0721)	0.939 (0.0652)	1.008 (0.0720)
HHES		1.099** (0.0433)		1.087** (0.0430)
Civic				1.144*** (0.0520)
/cut1	0.0119*** (0.00196)	0.0403*** (0.00997)	0.0190*** (0.00350)	0.0551*** (0.0148)
/cut2	0.0393*** (0.00397)	0.133*** (0.0281)	0.0626*** (0.00826)	0.183*** (0.0431)
/cut3	0.221*** (0.0143)	0.761 (0.150)	0.356*** (0.0384)	1.047 (0.236)
/cut4	1.294*** (0.0750)	4.677*** (0.933)	2.158*** (0.231)	6.453*** (1.468)
Observations	3,025	3,025	3,025	3,025

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

A.3.6 Perception of Mayors' performance on Individual Tax Morale

Table A.3.5 OLM Estimations effects of Perception of Mayors' performance on Individual Tax Morale

Dependent Variable: Individual Tax Morale				
	(1)	(2)	(3)	(4)
Performance	0.995 (0.0278)	0.990 (0.0281)	0.982 (0.0278)	0.973 (0.0282)
Age		1.228*** (0.0326)	1.223*** (0.0324)	1.225*** (0.0325)
Woman		0.884* (0.0639)	0.893 (0.0644)	0.891 (0.0645)
Strata		1.135*** (0.0320)		1.134*** (0.0320)
Occupation		1.030 (0.0281)	1.018 (0.0276)	1.028 (0.0281)
Children		0.995 (0.0734)	0.922 (0.0662)	0.994 (0.0734)
HHES		1.098** (0.0452)	1.109** (0.0456)	1.085** (0.0449)
Civic				1.153*** (0.0548)
/cut1	0.0141*** (0.00250)	0.0427*** (0.0112)	0.0279*** (0.00682)	0.0579*** (0.0163)
/cut2	0.0454*** (0.00548)	0.138*** (0.0314)	0.0901*** (0.0187)	0.187*** (0.0468)
/cut3	0.247*** (0.0227)	0.765 (0.164)	0.498*** (0.0958)	1.044 (0.249)
/cut4	1.436*** (0.126)	4.696*** (1.018)	3.022*** (0.583)	6.433*** (1.552)
Observations	2,840	2,840	2,840	2,840

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

A.3.7 Analysis per government period: Approval

Table A.3.6 OLM Estimations effects of Mayors' Approval Ratings on tax morale per government period

	Dependent Variable: Collective Tax Morale			
	Mockus	Garzon	Moreno	Petro
Approval	1.126** (0.0651)	1.236*** (0.0680)	1.333*** (0.0709)	1.210*** (0.0572)
Strata	1.026 (0.0234)	0.980 (0.0216)	1.017 (0.0190)	1.015 (0.0184)
Age	1.056** (0.0228)	1.050** (0.0214)	1.055*** (0.0185)	1.062*** (0.0181)
Woman	0.975 (0.0581)	0.937 (0.0536)	0.972 (0.0469)	0.877*** (0.0413)
Occupation	1.032 (0.0228)	1.038* (0.0219)	1.011 (0.0178)	1.047*** (0.0181)
Children	1.087 (0.0628)	0.980 (0.0545)	1.027 (0.0500)	1.009 (0.0485)
HHES	1.075** (0.0334)	1.050* (0.0296)	1.042 (0.0270)	1.014 (0.0265)
/cut1	0.0944*** (0.0150)	0.0954*** (0.0154)	0.0636*** (0.00924)	0.139*** (0.0199)
/cut2	0.476*** (0.0709)	0.424*** (0.0649)	0.362*** (0.0493)	0.547*** (0.0760)
/cut3	2.722*** (0.406)	2.150*** (0.329)	1.777*** (0.241)	2.387*** (0.332)
/cut4	19.53*** (3.055)	12.69*** (2.000)	9.689*** (1.347)	14.18*** (2.042)
Observations	4,419	4,721	6,125	6,159

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

A.3.8 Analysis per government period: Perceived performance

Table A.3.7 OLM Estimations effects of Perception of Mayors' performance on tax morale per government period
Dependent Variable: Collective Tax Morale

	Mockus	Garzon	Moreno	Petro
Performance	1.115*** (0.0303)	1.161*** (0.0301)	1.122*** (0.0263)	1.115*** (0.0303)
Strata	1.018 (0.0232)	0.978 (0.0225)	1.032 (0.0204)	1.018 (0.0232)
Age	1.058*** (0.0230)	1.052** (0.0224)	1.061*** (0.0198)	1.058*** (0.0230)
Woman	0.960 (0.0575)	0.922 (0.0546)	0.975 (0.0498)	0.960 (0.0575)
Occupation	1.029 (0.0228)	1.031 (0.0226)	1.013 (0.0189)	1.029 (0.0228)
Children	1.079 (0.0626)	0.972 (0.0562)	1.019 (0.0524)	1.079 (0.0626)
HHES	1.053 (0.0331)	1.036 (0.0304)	1.046 (0.0287)	1.053 (0.0331)
/cut1	0.111*** (0.0189)	0.124*** (0.0230)	0.0792*** (0.0131)	0.111*** (0.0189)
/cut2	0.565*** (0.0903)	0.570*** (0.102)	0.432*** (0.0681)	0.565*** (0.0903)
/cut3	3.252*** (0.521)	2.920*** (0.522)	2.171*** (0.341)	3.252*** (0.521)
/cut4	23.39*** (3.923)	17.68*** (3.251)	12.00*** (1.931)	23.39*** (3.923)
Observations	4,377	4,365	5,499	4,377

Source: Author's own elaboration

Note: Odds ratios. Standard errors in parenthesis *** p<0.01, ** p<0.05, * p<0.1. cut 1...cut 4 are respectively the intercepts for the second, third and the fourth and fifth category, with the intercept for the lowest category being normalised to zero.

Dependent Variable: Tax morale. Regressions include controls as follows. *Model 1*: Baseline (No controls). *Model 2*: Socioeconomic control variables: strata, age, woman, occupation, children. *Model 3*: All control variables included.

Conclusions

Building state capacity is a necessary condition to reach economic development and public policies play a key role to achieve this aim. Therefore, the efficient use of public resources will determine the pace of improvement of citizen's wellbeing. As it was discussed in the three chapters, political conditions are an important element to understand the use of public resources, the success of the greater good above personal interests and how these conditions will affect public outcomes.

In this context, this thesis addresses a general question: how political institutions affect local government performance? The three chapters create a dialogue between political science and economics by including the most salient particularities of both fields in a common framework that encompasses the research question of interest. Despite both disciplines pursuing similar objects of study, they have distinct lines of thought to understand the determinants and mechanisms to improve government performance. Their encompassing frameworks have been traditionally considered divergent, but in practice, they can be thought as complementary.

Studying a country with significant nuances at the local level such as Colombia represents an opportunity to explore how political institutions could be improved, with this being a fundamental quest for most countries. However, given the developing nature of the country, there are considerable data challenges to empirically assess the theoretical relation under study, and even more so when considering the subnational nature of the analysis.

Therefore, one of the contributions of this study was the research design: cleansing and compiling of several government official data sources, most of which have not previously been used in the literature. This includes data from the Electoral Authority of Colombia (Registraduría del Estado Civil), the National Comptroller (Contraloría General de la Nación) and the National Planning Authority (DNP). Additionally, the Bogotá Como Vamos Survey used in the third chapter overcomes limitations of previous research projects using public opinion surveys by considering a richer set of covariates, including civic attitudes variables.

The results presented in the chapters provide an important step in the study of political institutions and local development. However, as Colombia improves in the quality and in the availability of its statistical information, the discussion will be enriched with an increasing number of empirical applications and a deeper analysis of the mechanisms involved.

The first and second chapters revisit theoretical debates motivated by the literature of comparative politics and analyse alignment and re-election and economic outcomes at local level. More specifically, chapter one analyses political alignment between councils and mayoralties, councils' checks and balances, and their effect on fiscal discipline and efficiency in public goods provision. The findings show a negative albeit non-significant effect of council alignment on both measures of fiscal performance. Chapter two seeks to understand the effect of the presence of re-elected politicians in councils on the mismanagement of local public funds. Several model specifications indicate no significant relation between these two variables for Colombia.

Lastly, following Putnam's (1993) case for networks of civic engagement for establishing and securing efficient political institutions, the third chapter endeavours to study the determinants of intrinsic motivations to pay taxes at the citizen level, usually denoted as tax morale. Based on the attitude survey data analysed, results indicate a positive and significant relationship between tax morale and perception of the mayors' performance. This indicates that Bogotans are conscious of their politicians' deeds and express their approval or rejection with their willingness to contribute to taxes.

The study of decentralisation has gained prominence as a relevant element to understand development in many developing countries. In Colombia, reforms introduced to implement decentralisation in the nineties created certain autonomy for local authorities and contributed to state-building capacity. The estimation results corroborate that political institutions matter for the economic performance of local governments in Colombia. They also indicate that further strategies to strength governance are needed to achieve greater well-being for citizens.

Moreover, these findings have external validity and are relevant to other cases in Latin America and even other developing countries. This is because of a common evolution of political institutions: A similar historical background in the establishment of democratic institutions after independence,

a subsequent adoption of political institutions from the developed countries of that time, a similar decentralisation process in recent times. Therefore, many challenges including corruption, weak rule of law, lack of state capacity are common among countries in the region.

In this sense, the negative relationship between fiscal discipline and council party composition found in the first chapter is also relevant for other Latin American countries such as Peru, Mexico, Chile, and Brazil where the national constitutions created a similar political setting at the local level as in Colombia. Regarding the re-election of local governments in countries such as Peru and Mexico where elected officials are not currently able to keep their jobs, or the case of Chile where the discontent with the lack of political turnover at local level triggered recent laws to limit the maximum number of terms, the second chapter indicates that re-election of politicians does not necessarily imply increases in corruption. In that sense, it might be useful to think about other causes of corruption beyond re-electoral incentives.

Finally, the findings of the third chapter have universal applicability because intrinsic motivations of citizens that are beyond any rational economic evaluation apply for developed and developing countries alike. I found that citizen's perceptions and approval of their elected officials help to explain variations in the willingness to pay taxes, that is, paying could be considered a political statement of taxpayers that express their trust or mistrust in their government. From any government's perspective, the practical implication is that good performance could deliver a boost on tax revenues, that will in turn help to implement government public policies and programmes.

For future research, the results of this thesis invite to pay attention to the nuances of the political process at local level, as they are important to understand municipal development and to explain a key determinant of this latter variable: the best use of public resources. Given the lack of information on some political variables for the municipalities and periods analysed, the models estimated yield partially unsatisfactory results statistically speaking. However, these problems can be overcome with additional information from the political perspective that helps to disentangle the true magnitude of the relationships studied.

Regarding the decentralization process in Latin American countries, my findings indicate that, from a practical point of view, it is important that countries strive to guarantee competitive electoral

environments at the local level: ensuring that politicians do not benefit from building clientelist networks and allowing opposition parties to be an active part of councils and exercise accountability. This will in turn allow a more efficient fiscal and administrative performance. Otherwise, under the pervasive political conditions prevalent at the local level in the region, the national authorities must keep intervening to stop plundering of public resources by corrupt local authorities as has been common in recent times.