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A Comparative Analysis of Political Competition and Local Provision of Public Goods: Brazil, Colombia and Mexico (1991-2010)

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A Comparative Analysis of Political Competition and Local Provision of Public Goods:
Brazil, Colombia and Mexico (1991-2010)[1]

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Abstract

We explore the effect of political competition on the local provision of public goods in three countries: Brazil, Colombia and Mexico from 1991 to 2010 using municipal data. These countries share characteristics that make a comparative analysis useful in understanding the role of governance structures, which include the degree of fiscal and political decentralization. Based on a multidimensional approach of political competition and bringing to the fore the role of congressional elections, we establish the effect of several measures of political competition based on lower chamber elections on indicators of primary education, sanitation and infant mortality. We find that Brazil displays the highest elasticity with expected signs in several public goods to most measures of political competition, while Mexico shows strong connection of political competition indicators to all public goods but negative effects of voter turnout and electoral volatility; Colombia is the least responsive except for infant mortality. These differences are attributed to influences stemming from local accountability and party discipline.

Keywords: Political Competition, Political Responsiveness, Government Effectiveness, Government quality, Democratic Governance, Local Governance, Local Public Goods, Comparative Analysis, Brazil, Colombia, Mexico.

JEL codes: D72, H41, H75

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Resumen

En esta investigación exploramos el efecto de la competencia política sobre la provisión local de bienes públicos en tres países: Brasil, Colombia y México para el período 1991-2010 usando datos municipales. Estos tres países comparten características que hacen el análisis comparativo especialmente útil en la comprensión del papel jugado por las estructuras de gobierno, las cuales incluyen el grado de descentralización económica y política. Basado en un enfoque multidimensional de la competencia política y destacando el papel de las elecciones de congreso, establecemos el efecto que ejercen diversas medidas de competencia política, basadas en las elecciones de cámara de representantes, sobre indicadores de educación primaria, sanidad y mortalidad infantil. Encontramos que Brasil exhibe la elasticidad más alta y con signos esperados en la provisión de los bienes públicos ante la mayoría de medidas de competencia política, mientras que Méjico muestra una fuerte conexión entre estas medidas y todos los bienes públicos aunque con efectos negativos de la tasa de participación y volatilidad electoral. Colombia es el país que más baja respuesta presenta, excepto por mortalidad infantil. Atribuimos estas diferencias a las influencias provenientes de la rendición de cuentas y la disciplina de los partidos.

Palabras clave: Competencia política, Calidad de gobierno, bienes públicos locales, análisis comparativo, Brasil, Colombia, México

1. Introduction

Political competition is considered to be the best way to improve the performance of governments in democratic settings. By encouraging the entry of political parties and empowering citizens to discipline politicians, Shumpeterian creative-destruction processes occur among political contesters. Thus strong political competition is associated with efficient provision of public goods, low rent-seeking and sustained economic growth. This is the Chicago School view, which has been influential in motivating political institutional reforms in the 1990s in several countries (Persson & Tabellini, 2003). However, this sort of political reformism has brought about mixed results and some authors refer to it as electoral engineering, stressing the simplicity of the formulas yet simultaneously the complexity of such interventions (Norris, 2004).

There exists a handful of theoretical and empirical studies on the role of political competition and governance quality, from which one can conclude that the relationship remains controversial. For example, Acemoglu & Robinson (2006) and Lizzeri & Perssico (2005) analyze situations where more competition could bring negative welfare consequences. Empirical studies are more difficult to assess because of differences in the selected cases, data availability and econometric design.

Despite differences in theoretical and empirical insights, these studies revolve, explicitly or implicitly, around the fact that the structure of institutions and the context in which political agents and citizens interact shape the extent and scope of political competition. In other words, differences in political results come from differences in the institutional environment. Comparative analysis offers a way for us to learn about this diversity and understand the political foundations of quality governance in a deeper way.

In this study we select three countries: Brazil, Colombia and Mexico, and we track them from the 1990s to the 2000s in order to work out the following questions: how do political competition and the local provision of public goods relate to each other? What can we learn from a comparative perspective? We utilize comparative analysis insofar as it is an intermediate method between case studies and cross-country studies. While the former can turn too specific and hinder comparisons, the latter can be too general and overlook important contextual factors.

The cases correspond to middle-income, developing countries with democracies under consolidation who have been involved in processes of political and economic opening since the 1990s and who have been motivated by similar governance issues (i.e. corruption, political closeness) and economic challenges (i.e. low competitiveness, regional disparities, inequality). Scholars, particularly in Brazil and Mexico, have hotly discussed whether or not the increase in political competition since the 1990s have had positive impacts on the performance of local governments (i.e. Arvate, 2012; Cleary, 2007), providing us with suggestive reference points for this research.

Our research design rests on three pillars. First, our theoretical view adopts a multidimensional approach to political competition and adapts it to the available electoral

data. Second, our contextual characterization of governance structure, local autonomy, fiscal resources and party systems also underpins hypotheses on the relationship between political competition and local provision of public goods. Third, our empirical approach uses municipal voter data on national Congress elections (i.e. lower chamber) instead of municipal elections, and compares performance over two periods (averages of six to ten years each) thus capturing medium to long-term trends. Indirectly, analyzing municipalities allows us to substantiate discussions around local governance structures, decentralization effects and regional disparities.

The paper continues as follows. In the second section we discuss the theoretical approaches to political competition and related empirical studies so that we are able to specify what we understand of political competition as well as discuss the approach we adopt. In section three we offer an overview of the political and economic characteristics of our three countries starting in the 1990s. Section four describes the municipal data set and presents descriptive statistics. Section five introduces the econometric specifications and the hypotheses to test, as well as discusses the main results. The tables from these sections are presented in the appendix. Finally in section five we conclude and make propositions for future research.

2. Approaches to political competition

The political regimes considered in this work are democratic, which means that players are officially constrained by constitutions, divisions of power and regular elections. The nature and role of democratic political competition vary according to the approach taken, consequently we distinguish between three: the economic theory of politics, the transaction cost theory of politics and the multidimensional approach.

2.1 The Chicago School and the Transaction Cost View

Economists' understanding of political competition has closely followed the notion of economic competition (Wittman, 1989; Becker, 1983; Stigler, 1972; Downs, 1957) in which the underlying theoretical approach comes from the neoclassical school. When the ability of firms and consumers to influence the choice variable, that is price, is negligible, perfect competition holds. Consequently, no price discrimination exists, excessive profits dissipate (equal to zero) and consumer utility is maximized along with social welfare. Economic efficiency is reached even in the presence of externalities insofar as transaction-costs are sufficiently low enough for agents to bargain well-defined property rights and achieve better allocation (i.e. the Coase Theorem).

In the same way that economic competition determines the ability of a firm to influence price, political competition shapes the ability of a political agent to influence public policy (Stigler, 1972). Political competition denotes a type of rivalry where no contender has strong dominance over the others. By virtue of this rivalry agents cater to voters more effectively, and reveal information on candidates' attributes and incumbents' performance. Political pluralism lies at the heart of this concept conveying the idea of counterbalance among diverse social groups regarding governance (Dahl, 1989). The outcome of competitive interactions

among either interest-groups (Becker, 1983) or political parties (Wittman, 1989; Downs, 1957) is maximum social welfare, which can be identified with efficient provision of public goods, low rent-seeking or sustained economic growth (Besley, Persson & Sturm, 2010). As in perfect economic competition, perfect political competition directly stems from rational choice assumptions and full information scenarios, thus implying perfect commitment based on politician's promises.

Political competition in this approach is mainly studied within the electoral arena and rests on a strong analogy based on market competition. This contrasts with the legislative and governmental arenas where agents appeal much more to bargaining and coordination than to intense rivalry. This focus on the electoral arena makes the terms *electoral competition* and *political competition* interchangeable in most of this literature, being a choice with no dismissive consequences because measures of political competition and associated public policies strongly revolve around the electoral process.

The Chicago School was influential in the institutional reforms of the 1990s whereby many countries, developed and developing, modified electoral rules in order to encourage political competition or open up their political systems. This wave of reforms was seen as electoral engineering with mixed results; in cases such as New Zealand, larger political plurality improved democratic quality, while in Peru it diminished it (Persson & Tabellini, 2003).

Drawing upon Buchanan & Tullock (1962), North (1990) criticizes the neoclassical approach to politics for being an a-institutional analysis. He brings to the fore elements such as limited subjective models built by contenders, costly information and imperfect enforcement of agreements. The transaction cost theory of politics questions the instrumental rationality assumption implying that interest groups or political parties can fail to recognize or undertake Pareto-improving solutions. Precisely political institutions emerge as a response to these shortcomings as they are devices to elicit cooperation and reduce uncertainty among politicians, thereby creating a stable structure of exchange. Nonetheless, institutional devices do not totally overcome commitment and monitoring problems among principals and political agents. In this sense North (1990) highlights that political markets are inherently imperfect, however, he admits that political competition plays a critical role in diminishing enforcement and transaction costs.

This transaction-cost view of political outcomes has greatly enriched the analysis by including legislative and governmental arenas (Dixit, 1996; Weingast, Marshall & Marshall, 1988). Building a dynamic scenario that implicitly goes beyond the electoral process, the work of Besley & Coate (1998) and more recently Acemoglu (2003) also support the idea of pervasive political failures. These failures emerge from the interaction among perfectly rational agents unable to enforce future agreements that could be socially beneficial but individually damaging to some agents. The acknowledgement of imperfect political markets poses the question of how to make political markets less inefficient, or drive them to their "second best attainable-equilibrium," as Dixit (1996) puts it.

Although the effects of higher political competition continue to be associated with desirable social outcomes (i.e. political transparency, public goods provision), reaching these heights

is a complex endeavor. Acemoglu & Robinson (2006) highlight that the relationship between political competition and elites' willingness to block innovation and growth-enhancing reforms can be non-monotonic. They show that at very low or very high levels of political competition, measured as the inverse of incumbency advantage, elites promote economic development. However, intermediate degrees of competition may intensify political instability and hinder development because the adoption of technological innovations erodes the trembling power of political elites.

Lizzeri & Persico (2005) show that more competition, given by the number of political parties, could imply lower provision of public goods, higher rent-seeking, expensive electoral processes and wasteful campaign contributions, thereby questioning the welfare effects of more political contesters. Based on empirical research, Collier (2008) finds that increasing electoral competition is not always desirable in cases of fragile democracies with resource curses, especially from oil, because it encourages wasteful electioneering and even violence.

The two previous approaches refer to the notion of a political market and its efficiency which can be potentially enhanced through increasing political competition. Bartolini elaborates an alternative view in which the analogy between economics and politics is considered erroneous as it distorts the reality of the political world where "competitive interactions are a small island in the big sea of collusion" (2000, p. 63). The author criticizes the economic theory of politics, reasoning that political competition has several dimensions whose parallel maximization is impossible. A more fruitful approach in his view is to identify the patterns of political competition structured by the mix of dimensions, and ascertain their historical circumstances, pursued values and systemic consequences. Because this last approach offers more comprehensive guidance to the comparative analysis we aim to carry out, we introduce it in the next section.

2.2 The Multidimensional View

According to Bartolini (2000; 1999) there are four types of interactions among autonomous players: competition, conflict, negotiation and cooperation. Competitive interaction takes place between independent actors that share the same goal and whose principle of action is individualistic. No strength or threat is used against the adversary to reach the prize which is repeatedly at stake. What makes competition so desirable are the unintended consequences of the race that benefit third parties (i.e. information, new technology, low prices). In contrast, conflictive interaction involves individualistic agents who perceive their goals as different and inflict damage on each other to win the prize. Cooperative interaction happens between agents that have solidaristic motivations and similar goals; this interaction encourages them to exchange and share the means necessary to gain benefits that can only be achieved through cooperation. In negotiation agents have collective concerns as well and each party controls some exchangeable prize valued by the others. However, their goals are divergent which lead them to use threats to achieve the best terms of exchange.

Having said this, we define political competition in democracy more precisely as being a *property of polities,* associated with a system of interactions between consciously rivalrous and autonomous individuals and groups in the political sphere whose objective goal is

political power (i.e. votes, office, influence on policies). The means employed, such as campaigns and delivery of goods, among others, are non-violent, while the unintended consequence or positive externality of the race is political responsiveness. Through the competitive struggle, parties or elites in power are obliged to take into account voters' preferences if they are to survive. The conditions necessary for competitive political interactions to produce responsiveness requires a careful analysis of how voters' preferences are formed, communicated to parties and aggregated, as well as an analysis of how the political outputs become contingent upon meeting such aggregated preferences. Bartolini (2000; 1999) departs from the neoclassical postulates about voter and party behavior by relaxing them a bit in order to empirically investigate four essential dimensions of competition that are able to tie elites' political choices to citizens' demands.

These four dimensions are electoral contestability, electoral availability of voters, decidability of the electoral or policy offer, and electoral vulnerability of incumbents. The first dimension signals the openness of the political system to contestants, hence it focuses on the entry barriers, rules of representation and campaigning costs. The second dimension also refers to the openness of the political system but regarding voters. Electoral availability indicates a voter's willingness to modify his/her party choice, a feature also identifiable as the elasticity of the vote. The response of voters before political offers comprises the act of voting and the act of choosing a party, both determined by instrumental and expressive considerations.

Decidability of the political offer points to the differentiation between party platforms. It can be judged by comparing parties' choice of divisive or valence issues and the way these are communicated, clearly or not, to the electorate[2]. This dimension is more complex than the usual position of the party in the ideological spectrum because the political offer is the result of cooperative choices between contestants vis-à-vis the multiplicity of sites of political interaction (electoral, parliamentary and governmental). That is why parties wanting to seek office and pursue certain policies must engage in pre- and post-electoral coalition negotiation. Elites, interest groups and/or political parties make agreements that allow or restrain competition over key matters such as national security, regime endurance or patronage. As a consequence political offers are not automatically aligned with voter preferences.

The last dimension is incumbency vulnerability, defined as the possibility the incumbent government faces of being ousted and replaced by voters. A wealth of related literature has equated vulnerability with competition in line with the Downsonian models of competition, measured as closeness of electoral outcomes or uncertainty of electoral results. Due to significant vulnerability, the incumbent senses of lack of safety and their opponents use this to their advantage. Vulnerability contributes to responsiveness as long as there is clear governmental responsibility attributed to a party or an identifiable coalition, and the division line with the opposition is visible enough. Table 1 summarizes the four dimensions, the consequences of maximizing or minimizing each of them and possible measures.

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[2] A divisive issue involves "advocacy of government explicit actions from a set of alternatives over which a distribution of voter preferences is defined" (i.e. taxes or subsidies). A valence issue involves "the linking of the parties with some condition that is positively or negatively valued by the electorate" (i.e. abortion) (Bartolini, 2000, p.48).

Table 1. Dimensions of Political Competition

Dimension	Concept	Maximum	Minimum	Possible Measures
Contestability (parties/ candidates)	• It signals the openness of the political system for contestants • Entry barriers to the race • Scope of representation • Campaigning conditions	Excessive fragmentation	No exit options for voters; closure (political monopoly)	• Effective threshold of electoral systems • Fairness of representation • Information on regulatory barriers • Costs of party formation and campaigning
Availability (voters)	• It signals the openness of the political system for voters • Elasticity of the vote • Act of voting • Act of choosing a party	Electoral instability	Encapsulation of voters (including high abstention)	• Turnover • Ex-ante electoral volatility (voting intentions) • Electoral cleavages; swing and core voters
Decidability (political offer)	• Differentiability of party's platform • Party choice of divisive or valence issues stated clearly or in a blurred way	Excessive polarization	Shallow parties' platform, political indifference	
Vulnerability (incumbent)	• Possibility that the incumbent government is ousted or replaced by voters • Clear government responsibility and structured opposition	Permanent campaign syndrome	Safety of tenure, inability to sanction or reward (political monopoly)	• Closeness of the electoral outcomes • Electoral risk

Source: Authors based on Bartolini (1999, 2000)

Bartolini (2000; 1999) notes that all dimensions influence each other in a non-linear or additive way, highlighting the trade-offs present. Contestability is a necessary condition of pluralism and is important for democracy. However, when it is maximized, political systems experience too much fragmentation as Lizzeri & Persico (2005) theoretically find and Collier (2008) empirically verifies. Low availability of voters reflects an encapsulated electorate or significant voter abstention, both indicating low sensitivity to adjustments in the political offer. Strong ethnic identities or poor electoral mobilization could be associated with either polarized parties or shallow political offers, both cases corresponding to high and low decidability respectively. On the other extreme high availability makes planning of the political offer difficult for parties and intensifies the incumbent's feeling of being unsafe. High vulnerability could bring a feeling of "permanent campaign syndrome" and stimulate delay in sensitive decision-making or intensify pork-barrel distribution. In response to high vulnerability, political parties can avoid taking stances on controversial issues in order to capture a broader electorate, which is a strategy that reduces decidability.

Bühlmann & Zumbach (2011) develop an empirical application of Bartolini's view and build proxies of each dimension for thirty mature democracies to establish a typology of political competition. Their findings are modest partly because several of the proxies are questionable and also due to the high level of aggregation. Nonetheless, the authors confirm the complexity in their measurement as well as the richness of competition patterns.

In sum, the multidimensionality approach underscores the fact that political competition is not a natural outcome of a polity but rather the result of collusive agreements between decisive actors. Political competition is desirable insofar as it brings about responsiveness but no unambiguous formula exists to maximize it. Instead a complete identification of the type of competition pattern that a democracy exhibits is essential to grasping the consequences of changes in the dimensions of political competition. Table 2 briefly explains the three approaches identified.

Table 2. Theoretical Approaches to Democratic Political Competition

Approach	Assumptions on Democracy	Political Competition	Outcome of the Political Process
Economic Theory of Politics (Wittman, 1989; Becker, 1983; Stigler, 1972; Downs,1957)	1. Arena: electoral 2. Voter's fixed and exogenous preferences (single-peaked) that maximize their welfare 3. Office-seeking politicians/candidates that set policy platforms according to voters' preferences 4. Perfect information, if not, self-correcting dynamic mechanism 5. Perfect commitment	Intense: established from assumptions, it brings social efficiency	• Spatial models: convergence of parties' platforms; Medium Voter Theorem • Maximum social welfare • Efficiency of political markets • The Political Coase Theorem holds • No excessive rents accrue to politicians
Transaction Cost Theory of Politics (Besley & Coate, 1998; Dixit, 1996; North, 1990; Weingast & Marshall, 1988; Buchanan & Tullock, 1962)	1. Arena: electoral, legislative, governmental 2. Costly information 3. Subjective models of actors can be incomplete or wrong 4. Imperfect enforcement of agreements 5. Institutions as devices to reduce transaction costs	Variable: it plays a critical role in reducing enforcement and transaction costs in politics	• Political markets are inherently imperfect • No first-best Coasian-agreements are possible • The efficiency of the political market is measured by how close transaction costs are to zero • Positive rent-seeking
Multidimensionality of Political Competition (Bartolini, 2000, 1999)	1. Arena: electoral, legislative, governmental 2. Electoral contestability holds 3. Voters' interest in maximizing their preferences (not necessarily fixed or exogenous) holds but there is a varying degree of vote elasticity 4. Politician's interest in being re-elected holds, but decidability of the political offer is changing 5. Varying electoral vulnerability of the incumbents	Variable: it fosters responsiveness of politicians/elites to constituents' demands. Not a natural outcome: continuous efforts to avoid it	• The public good of authority is provided out of a combination of collusive and competitive interactions • Collusive politics determines the areas subject to political competition

Source: Authors

2.3 Empirical Literature

A selected revision of the literature will show us that studies have mechanically measured isolated dimensions of political competition. We start by referring to country and cross-country studies, and continue examining works using within-country variation of our three Latin American countries.

Besley et al. (2010) study the effect of political competition on pro-growth policies for the 48 continental states of the USA in the period 1950-2001. They find that the dominance of Democrats in the south was associated with fewer pro-business policies (e.g. higher tax revenue as a share of state personal income, lower infrastructure spending and lower probability that a state has a right-to-work law). The authors define political competition for a two-party scenario in which the vote share of the Democrats in states at time t is denoted d_{st}. The lack of political competition is defined by the dominance of either party in state-wide elections, then $K_{st} = -|d_{st} - 0.5|$ is the party-neutral measure. Higher values, those closer to zero, indicate stronger political competition.

The electoral advantage of parties comes from core voters (or committed voters), while swing voters are not consequential in winning elections until both parties are almost symmetric rivals. The core voters are partisan voters (Democrat or Republican) whose utility depends upon non-economic issues and are courted by politicians through transfers. The swing voters are independent and make their choices based on economic concerns. Political competition increases when the advantage from partisan voters of either party declines, that is when candidates raise their substitutability (they have no ideological advantage over the contester) and/or the number of swing voters increases. In this way stronger political competition should make policy choices more pro-business and boost growth as it allocates resources away from low productivity sectors.

Besley et al. (2010)'s work uses the first approach and provides evidence confirming the Chicago School view. The authors are cautious and warn that generalizations of their results apply only for the USA. In this two-party scenario, the model's prediction is that greater political competition improves economic policy (pro-growth policy, lower taxes). This effect is non-linear: at very low and very high levels of political competition, changes in this competition have smaller impacts on policy compared to intermediate levels. Low levels correspond to political monopoly (no contestation) whereas high levels correspond to parties regressing back to rent-seeking policies. At intermediate levels both parties adopt pro-growth policies which are the preferences of swing voters. Surprisingly, this non-linear effect of political competition is exactly the opposite identified by Acemoglu & Robinson (2006).

Also strongly influenced by the economic theory of politics, Aidt & Eterovic (2011) study the effect of political competition and electoral participation on fiscal outcomes of the central government in 18 Latin American countries over the period 1920-2000. The measure for political competition is mainly the Polity IV Index, a scale used to identify the political regime ranging from 10 for a mature democracy to -10 for a totalitarian regime. The index is based on formal, or institutionalized, regulations that manage contestability and openness for executive office recruitment, as well as executive constraints and electoral conditions

regulating political parties. Electoral participation is calculated as the aggregate voter turnout in general elections and referenda in proportion to the total population. These authors find that enhancing political competition limits the size of government making it more efficient, while electoral participation tends to increase the size of government because enfranchisement raises pressure for fiscal spending.

We consider the Polity IV Index to not be an appropriate measure of political competition. First, if democracy is a necessary though not sufficient condition for political competition (Bartolini, 1999), then including autocratic periods as Aidt & Eterovic (2011) do confuses the concept of political competition. Second, because the Polity IV Index only includes formal rules, the informal rules intervening in the effectiveness of formal ones are ignored (i.e. distribution of power). Likewise the conceptual separation between political participation and political competition as independent variables is questionable, however these authors justify this due to the low correlation between indexes. Finally, control variables do not incorporate external influences on the size of government (i.e. expansion of spending after the Great Depression). Despite these limitations, these authors' analysis does highlight the fact that different indicators associated with the political system could have offsetting effects.

Studies about the effects of political competition on economic outcomes using state or municipal information from our three country set are scarce. We believe difficulties in building detailed databases are one of the main obstacles that researchers must surmount. The few articles to consider are Arvate (2013) for Brazil and Cleary (2007), Moreno-Jaimes (2007) for Mexico, and Sánchez & Pachón (2013) for Colombia[3].

This pioneering work on Mexico was inspired by the increase in competitiveness of mayoral elections and municipal responsibilities in public goods provision during the 1990s. Cleary (2007) and Moreno-Jaimes (2007) perform a similar exercise in which the dependent variables are sewer and water coverage in 2000, which are public utilities and the responsibility of municipalities. For the explanatory variables they include the lagged utility score in 1990, and as proxies of political competition, the 10-year average of the margin of electoral victory among the top two parties and the effective number of parties. They also include voter turnout, literacy rates and poverty as measures of political participation as well as other control variables such as municipal budget, population size, among others.

Both authors estimate ordinary least squares (OLS) models on the log-odds ratio of sewer and water coverage, finding the dependent-lagged variable to be strongly significant, no significant effect of the margin of victory, and a significant and positive influence of voter turnout. They come to the intriguing conclusion that electoral competition does not promote government responsiveness but instead, political participation does. What matters is not political competition but *direct pressure of politically mobilized citizens*. We call this an intriguing conclusion because measures of electoral competition and voter turnout are two

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[3] Another related work is Eslava (2005) who focuses on Colombian social spending and voter behavior at the municipal level in order to find evidence on the political budget cycle for the period 1987-2000. Using a similar set of variables to Eslava, Boulding & Brown (2013) explore the effect of political competition on social spending in Brazilian municipalities in 1996 and 2005.

aspects of the same process: elections. Cleary (2007) offers a more complete discussion by questioning the appropriateness of applying the Chicago School view in the Mexican context and arguing that turnout is an indicator of non-electoral participation; likewise he suggests using a broader perspective when assessing the role elections play in government responsiveness.

Arvate (2013), inspired by the work on Mexico, replicates the same exercise for Brazilian municipalities over the period 2000-2004 and found that political competition does increase sewer coverage. The statistically significant measure of political competition is the effective number of parties, while voter turnout is not significant in this study. An alternative proxy for public goods uses the provision of education and health measured by the number of student enrollments and the number of teachers in municipal elementary schools as well as the number of free immunizations in municipalities. In contrast to the studies on Mexico this author tackles endogeneity emerging from the relationship between the number of candidates and the supply of public goods by estimating a two stage least squares (2SLS) model. The instrumental variable (IV) for the effective number of candidates for mayor is the number of seats in the local legislative body conditioned by population size. Results confirm the positive and significant influence of the effective number of candidates on the number of primary school students and teachers, and free immunizations.

Sánchez & Pachón (2013) examine de effect of local taxation efforts and political competition on public school enrollment and water coverage in Colombian municipalities using data over the period 1994-2009. In contrast with the above-mentioned scholars, who mainly draw upon political science literature, these authors are influenced by the literature on decentralization and governance. As a result, they are interested in assessing the economic impact and efficiency of certain decentralization policies. They underscore the role of fiscal capacity sustaining that stronger local fiscal efforts are associated with higher political competition in the local level which leads to a better provision of local public goods. Fiscal capacity here means the fiscal revenue locally raised (i.e. tax on property), distinguished from national transfers and royalties. Political competition is traditionally measured by the effective number of parties and an index of intra-party competition based on mayor elections. The main econometric estimations are OLS and 2SLS where the source of endogeneity is the local fiscal revenue instead of political competition. The instrumental variable is the cadastral undervaluation calculated through a logit model using municipal records on cadastral update and additional indicators of political competition. In short, they find that local tax revenue is positively and significantly related to the provision of education and water coverage, while local political competition has no significant effect.

Results of these studies will be critically assessed vis-à-vis our results later on in section five. Overall the diversity of results drive us to examine political competition from a more comprehensive approach than the economic theory of politics. Next we will identify the specific patterns of political competition in our country set.

2.4 Applying the Multidimensional Approach

We adapt Bartolini's approach to our analysis in several ways. First, our measurement of political competition comes from electoral results leaving aside non-electoral features (i.e. campaigning rules, indicators of political bodies). Second, we group the four dimensions into two electoral dimensions. The first aggregated dimension, called entry & exit dimension, brings contestability and vulnerability together because high values of the former usually implies high values of the latter. Furthermore, proxies such as the effective number of parties or the margin of victory exhibit positive and high correlations. The second aggregated dimension, called voter sensitivity to partisan agency, joins the availability of voters with the decidability of the political offer since electoral participation of voters frequently depends upon the ability of parties to differentiate themselves from each other and mobilize citizens. The proxy we use is voter turnout a variable that indirectly informs us about the decisiveness of the electoral debate.

Additionally we build four indexes to assess the combined effect of the dimensions. The first is calculated by applying principal component analysis (PCA) to three indicators closely correlated: the effective number of parties, the sum and then the difference of the two main parties' vote share (enp, sumrank2, difrank2 respectively). This indicator is called pc_a and varies positively with political competition. The second index considers the interaction between enp and turnout, that is $C\_a=enp*turnout$; its range of variation is $[0, \max(enp)]$ conveying that a larger number of effective parties with a low turnout downgrades political competition. The third indicator is given by: $C\_b=C\_a/EV$, where EV stands for electoral volatility; it reassesses the stability of C_a dividing it by electoral volatility. In this way the higher the electoral volatility, the lower political competition is. Electoral stability is not explicitly considered by Bartolini, but we believe it reflects an important feature of the interaction between parties and voters.

Electoral volatility, measured ex-post, captures the stability of the relationship among voters and parties from one election to the next. According to Mainwaring & Zoco (2007) stable interparty competition, that is low electoral volatility, signals democratic maturity because voter-party linkages are based more on programmatic politics than particularistic and short-run rewards. From this perspective, high EV indicates instability in party affiliations and *possibly* electioneering. However, we acknowledge that low EV in a developing-country scenario could signal political monopoly as well. In this sense, electoral stability that is too low or too high is undesirable for the same reasoning that is applied to the maximization of contestability and vulnerability. Hence the fourth indicator is defined as $C\_c=C\_a/(|EV - \overline{EV}_{state}| + 1)|$, where $\overline{EV}_{state}$ denotes the state's mean EV.

Table 3 summarizes the dimensions and measures we apply. Each dimension relates to the others in non-additive ways. Improvements in the entry & exit dimension are expected to reduce electoral stability, although its effect on voter sensitivity can be either positive (new inclusive parties mobilizing more voters) or negative (too much electioneering causing voter apathy). In sum, the multidimensional approach states that measuring political competition must take into account several dimensions and not only unidimensional measures such as electoral vulnerability.

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Table 3. Three Dimensions of Electoral Political Competition

Dimension	Observable Measures	Maximum	Minimum	Characteristics
Entry & Exit Contestability & Electoral Vulnerability	• Effective number of parties (ENP) • Inverse of the sum of the two main parties' vote share (1/sumrank2) • Inverse of the difference of the two main parties' vote share (1/difrank2)	Fragmentation, coalitional politics and higher transaction costs in policymaking	Political monopoly, concentration of electoral power	• Given by historical patterns of party dominance, electoral rules and campaign costs • Partially shaped by electoral reforms
Voter sensitivity of partisan agency Availability & Electoral Decidability	• Turnout	Ideological polarization; effective voter mobilization	Blurred political offers, voter apathy	• Reflect voter attitudes towards and inclusion in politics. Inform indirectly on the decisiveness of political debate • Not easily affected by policymaking
Competition Indexes	• Principal component indicator pc_a (ENP, 1/sumrank2, 1/difrank2) • C_a=ENP*turnout	Highly contested elections (by parties and voters)	Electoral inertia, passivity	• Signals the dynamism of political activity of parties and voters • It captures the aggregate effect of entry-exit conditions and voter sensitivity
Stability of Competition	• C_b=C_a/EV • C_c=C_a/($\|EV - \overline{EV}_{state}\| + 1$)$\|$ EV: Electoral Volatility	Stable electoral alliances between parties and voters. Low electoral risk	Unstable allegiances; high electoral risk	• Shows the degree of voter partisan identity and consistency in parties' electoral strategies

Source: Authors

2.5 The Role of Congressional Elections

We change the focus from municipal results of local elections (i.e. mayor, local assembly, governor) to Congress elections (i.e. lower chamber). Previous studies concentrate on the link between local politicians and performance of local governments, however, political agency at the national level (lower and upper chamber) also influences local social outcomes, such as education and health, through direct and indirect channels that deserve scholarly exploration.

The direct channel involves bargaining over fiscal resources and other transfers that discretionally constrain or promote municipalities. Discretional transfers to localities lie in the competition dominion only accessible to congressional members and not to mayors who usually feel constrained by higher levels of authority. These transfers include spending on infrastructure, social programs or bureaucratic improvement which go to specific municipalities. Deep regional disparities, especially between rural and urban localities, can find their roots in this channel. For example Lehoucq et al. (2005) underscore the sluggish rural development in Mexico as being a product of heavy concentration of fiscal spending in urban areas until 1997.[4]

The indirect channel works through the party system (i.e. national or regional) which provides career incentives to local politicians. The promotion of mayors, governors or state deputies to higher levels of politics, or benefits awarded to local actions approved by the party, align local and national agendas. In this way, deputies and senators influence local politicians' performance through party affiliations. Certainly, for local voters, local representatives are more visible and closer to them than deputies and senators. Nonetheless members of Congress campaign based on territorial constituencies and frequently team up with local politicians building some degree of local accountability.

From an institutional point of view local governments are nested within a governance structure that either allows or denies them possibilities (Ostrom, 2005). This means that operational outcomes in municipalities are determined not only by local political agents but also by the next level of authority where collective choice agreements are made. In this case, the collective choice level is made up of the state government, the federal/national Congress and the headquarters of main political parties. While government decentralization determines the autonomy of municipal authority, the features of the party system establish the type of local political representation.

Even though our focus is on the role of congressional elections in the local provision of public goods, we acknowledge that such provision is the outcome of several levels of political agency. This is especially true for social spending, for this is concurrently done between levels of government and is frequently earmarked in the Constitution. This new focus allows us to start examining the systemic political structure shaping political competitiveness and supporting decentralization outcomes.

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[4] The economic commissions in charge of discussing and approving the fiscal budget belong to the lower chamber in Colombia and México, whereas in Brazil both political houses participate in this process.

3. A macro view

This section provides a general characterization of our three countries regarding political regime, governance performance, party system, decentralization maturity, and economic development. These features underpin hypotheses on the effects of competitiveness in politics, and some of the channels connecting national politics with local governance.

3.1 Political Structure and Government Decentralization

Brazil inaugurated its democracy with the 1988 Constitution after decades of struggle with autocratic trends. Mexico experienced an ebbing of one-party politics and transited towards a more contested democracy in the mid-1990s, while Colombia embraced political reform with the 1991 Constitution, thus ending an era of two-party politics. The Polity IV Index of democracy from 1990 to 2010 registers a stable and healthy polity in Brazil, an increasingly democratic polity in Mexico and a downgraded democracy in Colombia after 1994 (Graph 1)[5].

Graph 1.
Authority Trends: Brazil, Colombia and Mexico (1990-2011)
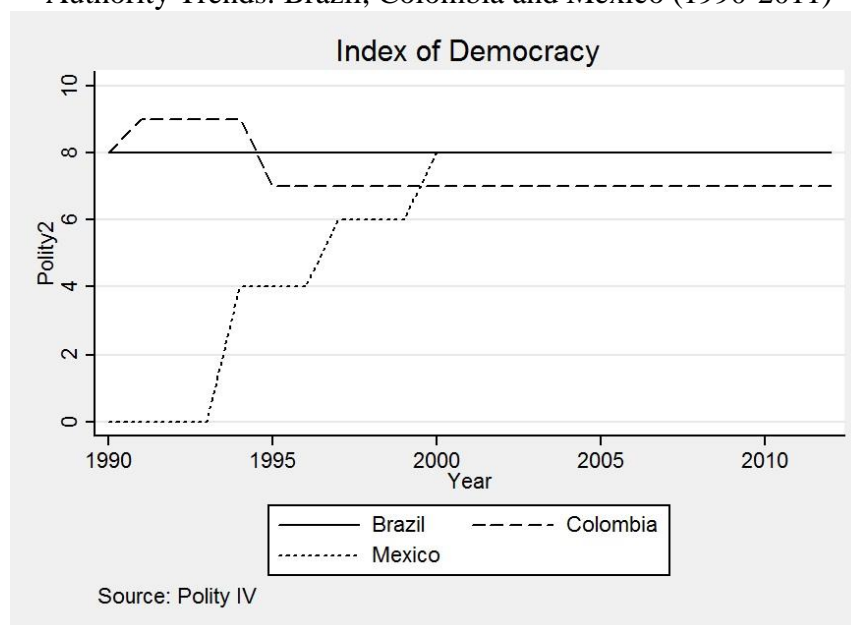
The three countries are presidential republics: Brazil and Mexico are federal and Colombia is unitary. All the countries have bicameral congresses that are elected proportionally or in combination with plurality voting. The Mexican electoral system stands out because it mixes plurality vote and proportional representation and defines a shorter term for deputies (three years) and a longer term for president (six years). According to population figures, as of

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[5] The index ranges from -10 to 10, 10 being a consolidated democracy.

2012, Brazil, Colombia and Mexico had 306, 181 and 160 habitants per congressman respectively (lower and upper houses combined, see Table 4).

Table 4. Political Regime: Brazil, Colombia and Mexico

	BRAZIL	**COLOMBIA**	**MEXICO**
Government	Federal Presidential Republic	Unitary Presidential Republic	Federal Presidential Republic
Constitution (current)	1988	1991	1917
Population (2012, millions)	181,753	47,704	100,679
Area (2012, millions of km^2)	8,516	1,142	1,973
Compulsory voting	Yes	No	Yes
Habitants per congressman	306	181	160
Lower House			
Chamber of Deputies (seats)	513	161	500
MDM, electoral rule	19, PR	5, PR	16, PV*
Term (years)	4	4	3
Malapportionment (1999)	0.09	0.13	0.06
Upper House			
Federal Senate (seats)	81	102	128
MDM, electoral rule	3, PV	102, PR	4, PV
Term (years)	8	4	6
Malapportionment (1999)	0.4	-	0.23
Presidency			
Electoral rule	PV, second round	PV, second round	PV
Term (years)	4	4	6

Sources: Polity IV Project (2014), Keefer (2012), World Bank (2012), Banks et al. (2009), Snyder & Samuels (2004). MDM: mean district magnitude, PV: plurality voting, PR: proportional rule, MS: mixed system. Brazil: seats in lower chamber from 2007. Colombia: lower chamber has had 166 seats since 2012 and had 100 seats in the Senate during 1994-2006. Mexico: lower chamber has 300 seats elected by plurality rule and 200 seats proportionally elected; the Senate has 96 seats elected by plurality rule and 32 seats proportionally elected (1994-2006).

The Chamber of Deputies and the Senate rely on territorial constituencies in Brazil and Mexico but the Colombian Senate is nationally elected. However analysts have pointed out the heavy influence that regional votes have on Colombian senators' success (Jones, 2010). These congresses voice regional interests but exhibit significant malapportionment which over-represents rural states and landowner interests[6].

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[6] Monaldi (2010) and Ames (2000) point this phenomena out in the Brazilian Congress.

Table 5 summarizes key features of the party system in these three countries. Brazil displays the highest number of effective legislative parties (7.8), followed by Colombia (5) and Mexico (2.7) for 2002/2005. The Brazilian Congress is not only the most fragmented but also the most polarized in terms of ideological views. Its Colombian counterpart appears to be the least polarized, implying that citizens and legislators do not perceive important differences in ideological partisan stances[7].

Table 5. Characteristics of the Party System: Brazil, Colombia and Mexico

INDICATOR	BRAZIL	COLOMBIA	MEXICO
Effective number of legislative parties (2002/2005)	7.81	5	2.79
Overall polarization (2002/2005)	2.84	0.6	1.74
Institutionalization Index (2003/2005)	59	60	67
Nationalization Index (2001)	7	7.3	10.5
Centralization Index (2001/2005)	10.5	11.8	12

Source: Jones (2010)

According to Table 5, the Mexican party system is the most institutionalized, nationalized and centralized, while the party systems in Brazil and Colombia respond more to regional interests. The Institutionalization Index is built by considering party roots in society, programmatic contents and discipline. The Nationalization Index reflects the weight of national issues on legislators' careers and their ability to obtain wide electoral support across geographic units.

In a less nationalized party system sub-national units are more important in legislative careers and national public policy is oriented towards local interests. On the contrary a national party system procures stronger alignment between national and sub-national politics in contrast to a regional party system which would face higher coordination costs and lower cohesion within the polity. Finally the Centralization Index measures the concentration of political parties' power at the national level. This index takes into account features associated to the electoral system, governors' autonomy and intraparty democracy (Jones, 2010). Consequently, these indexes convey that Mexican Congress members have a stronger command over local politicians than their Brazilian and Colombian counterparts. Presumably, Brazil and Colombia face higher transaction costs in policymaking due to higher fragmentation and less political alignment among levels of government[8].

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[7] The number of effective parties reveals the historical configuration of the party system, which is closely related to the incorporation of the labor movement into the political system during the twentieth century. According to Collier & Collier (2002), Brazil took a path of multiparty polarizing politics, Mexico a path of an integrative party system with one-party rule, while Colombia established a two-party system with electoral stability and social conflict.

[8] Nacif (2002) finds that "legislators in the Mexican Chamber of Deputies conform to the centralized party government model" (p. 256) and "the degree of party unity tends to be rather high with leaders controlling access to resources and opportunities within the legislature" (p. 282). Also, Ames (2002) sustains that "given

In Mexico, the centralized party system and relatively low decentralization are both coherent. In spite of being a federal country, Mexico began the 1990s with a strongly centralized government structure, reflected in hierarchical budget procedures and large intergovernmental transfers on which the local governments rest. Since 2000, Mexico has exhibited a medium degree of decentralization that has advanced by adopting direct elections of governors and mayors who are, nonetheless, fiscally limited. For example, its sub-national spending as percentage of national spending reached 33% in 2004, which contrasts to 44% and 47% in Colombia and Brazil respectively (Table 6).

Evidently, the most decentralized country is Brazil whose federal structure moved towards higher local autonomy early in the 1980s. Decentralization was deepened throughout the 1990s to the point that since 2004, Brazil has had the highest index of decentralization maturity. It also exhibits the most coherent decentralization in reference to political decentralization, expenditure assignment, sub-national taxation, intergovernmental transfers, and sub-national debt management (Daughters & Harper, 2007). Colombia occupies second place in decentralization maturity with their transition having begun in the early 1990s.

The Worldwide Governance Indicators (WGI) of the World Bank offers us a first approximation to overall quality of these three democratic governments. The rankings in Table 7 are based on a total of 215 countries where a lower percentile indicates low capacity. Brazil occupies the best position in the average ranking of six dimensions over the period 1996-2011, followed by Mexico and lastly Colombia. Brazilian citizens perceive that they have more freedom to participate in and express themselves openly about government (voice and accountability). In contrast, Mexico surpasses Brazil in terms of government effectiveness and regulatory quality which means they have better perceptions of the quality of public service, civil service and overall policymaking. Nonetheless, Mexico is closer to Colombia regarding controlling corruption and the rule of law.

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the nation's institutional structure, Brazil should be a prime example of conditional legislative parties, where leaders' actions depend on the support of party members on a case-by-case basis and where influence flows from the bottom up" (p. 214).

Table 6. Sub-national Structure and Decentralization: Brazil, Colombia and Mexico

INDICATOR	BRAZIL	COLOMBIA	MEXICO
States/Departments (2010/2011)	27	33	32
Municipalities (2010/2011)	5,565	1,101	2,456
Governor autonomy (2001)	High	Middle	High
Municipal autonomy (2001)	High	High	Low
Decentralization Maturity Index (2004)	0.8-0.9	0.6-0.7	-
Decentralization Maturity Index (1996)	0.6-0.7	0.5-0.6	-
Expenditure decentralization % (2004)	47	44	33
Expenditure decentralization % (1996)	45	38	25
Vertical imbalance % (1995)	33	39	62
Index of budget institutions (1980-1992)	Low	Middle	High

Sources: Mexico (INEGI, 2011); Brazil (IBGE, 2010); Colombia (DANE, 2010). *Governor autonomy*: high (1) represents governors who are directly elected and possess an important degree of political and administrative autonomy; middle (2) represents governors who are directly elected but have limited autonomy; low (3) represents governors who are designated. *Municipal autonomy*: measured by municipal government's percentage share of total government expenditures: low (1) 0-5%, middle (2) 6-10%, high (3) 11% and higher (Jones, 2010). *Decentralization Maturity Index*: measures coherence in decentralization in reference to political decentralization, expenditure assignment, sub-national taxation, intergovernmental transfers, and sub-national debt management. *Expenditure decentralization*: sub-national spending as a percentage of national spending (Daughters & Harper, 2007). *Vertical imbalance*: intergovernmental transfers/sub-national total revenues (Stein, 1999). *Index of budget institutions*: higher values indicate hierarchical procedures within budgetary procedures; low values indicate collegial procedures (Alesina et al., 1999) .

Table 7. Worldwide Governance Indicators: Sub-national Structure and Decentralization: Brazil, Colombia and Mexico

(percentile rank, 0-100)

INDICATOR	BRAZIL	COLOMBIA	MEXICO
Voice and accountability	60.0	38.2	53.5
Political stability, absence of violence	42.3	6.0	29.0
Government effectiveness	55.3	52.2	61.5
Regulatory quality	58.3	56.1	62.6
Rule of law	44.5	33.2	36.5
Control of corruption	57.7	47.8	47.5
Average ranking	53.0	38.9	48.4

Source: Kaufmann et al. (2012), average for 1996-2011.

Colombia ranks low in political stability and absence of political violence with a position far below the Latin American and Caribbean average at the 40 percentile rank. The setback Colombia shows in Graph 1 relates to the internal conflict fueled by drug trafficking. As of 2010 around 30% of its territory was outside the control of the central state authority. The presence of both right-wing paramilitaries and left-wing guerrillas brings about polity fragmentation and stimulates factionalism (Polity IV Project, 2010).

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3.2 Economic Structure and Median Voters

The Mexican economy is the richest in our country set (Table 8). Despite its relatively low social spending, Mexico displays lower poverty incidence and income inequality than Brazil and Colombia. This is partly explained by the performance of the Mexican economy which relies on a large service sector and export capacity thereby exhibiting the lowest unemployment rate. The second largest economy in terms of gross domestic product (GDP) per capita is Brazil with a stronger service sector and lower unemployment than Colombia. Even though Colombia shows a larger GDP export share than Brazil, its exports are mainly crude oil and minerals (accounted for by agricultural output), which explains the relatively high percentage of agricultural output as exports.

Growth of GDP per capita has fluctuated similarly in the three countries. Colombia has the highest growth and lowest volatility on average, whereas Mexico fares as the most volatile, reflecting the domestic effects of the international crises in these two decades. Brazil and Colombia registered superior performances starting in 2000 relative to the 1990s; their per capita growth rates rose from 0.4% to 2.2% and from 1% to 2.2% respectively. In contrast, Mexico was the most dynamic economy during 1990s with an average growth rate of 1.9%, nonetheless this figure fell to 1% in the following decade (ECLAC, 2014).

Since the mid-1980s most countries in Latin America have increased social expenditures (e.g. education, health, water, sanitation, housing, subsidies, social security) as a consequence of political democratization (Cárdenas & Perry, 2011). Table 6 presents figures of social spending and associated indicators. On average from 1990 to 2012, Brazil's social spending reached 21% of its GDP, followed by Colombia with 11% and Mexico with 8.6%. During this period Brazil raised its spending on education, health, housing and, notoriously, on social security. At the same time, Brazil is the economy with the largest tax revenue as a share of GDP.

These comparisons highlight important features. In the 1990s Brazil began a stable democratic era supported by more decentralization and civil participation. Colombia also intended to deepen democracy through decentralization and higher social spending but the internal conflict and the crisis in the political system have seriously hindered the quality of its governance. Also, unemployment is by far the largest suggesting market rigidities among other hurdles. As a result median voters in both Colombia and Brazil earn low incomes, but the median voter in Brazil faces unemployment and homicide violence with less probability. The Brazilian median voter also voices much more of their demands, pays more taxes and has increasingly been receiving social spending (especially social security). Yet this voter could feel as frustrated as their Colombian counterpart for the relatively low level of government effectiveness and regulatory quality.

Table 8. Economic Indicators Economic Indicators: Brazil, Colombia and Mexico
(average 1990-2012)

INDICATOR	BRAZIL	COLOMBIA	MEXICO
Output & Employment			
GDP p/c (2005 USD)	4,632	3,337	7,255
GDP p/c growth (%)	1.34	1.93	1.41
GDP p/c state dev. growth (%)	2.77	2.36	3.06
Agriculture output (% GDP)	6.3	11.1	4.8
Industry output (% GDP)	30.1	33.0	30.0
Service output (% GDP)	63.5	55.8	64.1
Exports (% GDP)	11.1	16.7	26.4
Employment (% total population)	62.48	56.4	58.97
Unemployment (% total labor force)	7.84	12.11	3.8
Informality (% productive)	56.81	61.05	49.95
Informality (% legal)	34.6	51.1	59.4
Fiscal Revenue (% of GDP)			
Non-tax (general government)	4.4	10.8	12.1
Tax (general government)	30.3	14.3	9.4
Social Spending (% of GDP)*			
Total	20.9	11	8.6
Education	4.6	3.3	3.4
Health	3.9	2.0	2.4
Social security	11.2	5.0	1.7
Housing and others	1.2	0.7	1.1
Education & Health			
High education (% adult population)	9.84	14.4	13.62
Middle education (% adult population)	23.8	32.02	32.06
Low education (% adult population)	66.3	53.52	54.3
Infant mortality (% per 1,000 live births)	35	25	30
Poverty & Safety			
% Population living with or less than US$1.25 a day	11.13	13.4	3.95
GINI Index	58.41	57.02	49.34
IDH Index**	0.69	0.68	0.74
Intentional homicides (% per 100,000 people)	3.3	4.8	2.5

Sources: World Bank Development Indicators, CEDLAS,*ECLAC,**UNDP.

Mexico embraced political openness during the 1990s but has assimilated decentralization trends in a slow way; hence the Mexican voter encounters more government hierarchy when voicing demands. This median voter is not as poor as their two counterparts, pays fewer taxes and faces informality (absence of social security) with higher incidence. This voter is discouraged by weak rule of law (perception of high corruption), and is probably more sensitive to trade policy and international market fluctuations.

4. Municipal data and descriptive statistics

Data on public goods provision and other socio-economic indicators for municipalities cover the period 1990-2010. Because data availability changes across countries according to censuses, we make two averages for all variables, one for each period within each country, in order to maintain comparability between them as much as possible. These periods for Brazil: 1991-2000 and 2001-2010; for Colombia: 1998-2005 and 2006-2011; and for Mexico: 1995-2005 and 2006-2010. Tables A.1.1 to A.1.3 in Appendix documents data sources and other calculations.

The electoral data corresponds to lower chamber elections of federal deputies from 1994 to 2010. As before, we define two averages of electoral indicators for each period within each country: Brazil for 1994-1998 and 2002-2010; Colombia for 1998-2002 and 2006-2010; and Mexico for 1994-2003 and 2006-2009. By using these averages we work with ex-ante measures of political competition as well as political trends instead of short-run electoral phenomena to contrast government performance between periods[9].

The public goods considered are sewer and water coverage, infant mortality rate (proxy), gross rate of primary education, and the student-teacher ratio in primary education. Municipal governments in our three countries are the main authority in charge of investment and implementation policies in regard to these public goods[10].

Descriptive statistics of this dataset are shown in Tables A.2.1 to A.2.3 in the Appendix. Brazil registers the greatest improvement in all mean indicators of these goods from 1990 to 2010. Mexico also reports gains in these indicators although of a lower order than Brazil, while Colombia displays little advancement in the gross rate of primary education and infant mortality but slight setbacks in water and sewer coverage. Clearly, differences in governance performance reflect differences in fiscal resources and political incentives faced by municipalities in each country.

Fiscal variables are per capita municipal revenue, share of municipal transfers in current revenue and share of urban property tax revenue in total tax revenue. A limitation in municipal fiscal data is the high aggregation of revenues and expenditures especially in Mexico. Brazil is the exception although several changes in fiscal accounting procedures

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[9] An ex-ante measure means that to establish the effect of elections on governance performance in period t, elections in t-1 are considered.

[10] This provision must be publicly regulated but not necessarily publicly provided. There could be private operators as it is the case of water coverage in Colombia since 1994. Nonetheless, the share of private operators is lower than that of municipal governments (Sanchez & Pachón, 2013).

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have lessened its comparability over time. As a consequence we cannot observe expenditures on health, education or infrastructure but only as total social spending or total transfers. All monetary variables are transformed into international dollars for comparison purposes.

Our fiscal indicators show that average per capita municipal revenue is substantially higher in Brazil, intermediate in Colombia and low in Mexico. Transfers to municipalities as a percentage of current revenue are nearly 90% in Brazil and Mexico, whereas this figure is 80% in Colombia. The share of tax from urban property, within total tax revenues, largely varies: from 20-15% in Brazil, to 49-40% in Colombia and 78-76% in Mexico. Brazilian municipalities directly manage more taxes in comparison to Colombian and Mexican municipalities who heavily depend on this tax (CEFP, 2005; Souza, 2002).

Despite country differences, an historical consensus shared by the region has focused on increasing both social spending and fiscal transfers to municipalities. Brazilian municipalities have progressively been given fiscal responsibilities, and have also received tax revenues, fiscal incentives and federal transfers since 1989. An important percentage of federal and state transfers were devoted to education and health thus improving indicators of primary education and health, but allocating less resources to sewer and water coverage as well as infrastructure investment (Afonso, 2007).

Since 1991, decentralization in Colombia has increased national transfers to municipalities but has also earmarked social spending, limiting the discretion capabilities of local governments. Alesina, Carrasquilla & Echavarría (2002) diagnosed that spending in education and health did not improve indicators in these areas and simultaneously expanded the national fiscal deficit. Fiscal reforms followed in 2001 and 2007 that better defined responsibilities and incentives for local governments. They kept the focus on social spending by establishing that 58.5% and 24.5% of national transfers must be invested in education and health respectively, while only 5.4% was earmarked for sewer and water coverage (Gobierno Nacional, 2007; 2002).

Reforms aiming to promote municipal autonomy in Mexico took place in 1993, 1999 and 2007. Through these reforms municipalities increased their revenues and enhanced their management capacity. However analysts highlight the high concentration of fiscal spending at the centralized level as well as the transfer dependency of municipalities (Peña & Bojórquez, 2012; López González, 2004). An important share of these transfers has been dedicated to social infrastructure, including sewer and water coverage, through special funds (i.e. *Fondo de Aportaciones para la Infraestructura social municipal [FASIM], Fondo de Aportaciones para la Infraestructura social [FAIS]*). This fact explains the wider coverage in water and sewer in Mexico relative to Brazil and Colombia.

The indicators of political competition we use are: difference of the two main parties' vote share, effective number of parties (*enp*), *turnout*, and composite indicators: *pc_a*, *C_a*, *C_b*, *C_c* (see Table 3). According to Tables A.2.1 to A.2.3 the entry of new significant parties increased from the first to the second period in all countries: from 3.1 to 4 in Brazil, 2.6 to 3.3 in Colombia and 2.4 to 2.8 in Mexico. Also the sums and differences of the first two parties' vote share went down, signaling higher political contestability and vulnerability

(entry & exit dimension). Brazil shows the highest and most stable turnout of 74% on average, Colombia has the lowest (40-45%) and Mexico registers a decrease in voter turnout (58-52%). Consequently competition indexes pc_a and C_a rise in all cases: Brazil has the highest C_a index (2.3 to 3), followed by Mexico (1.37 to 1.46) and Colombia (1.07 to 1.51). Appendix contains maps of the index C_a in order to illustrate its geographical distribution in municipalities of each country and its change between periods.

In terms of stability of electoral competition, Brazil exhibits relatively high electoral volatility (34% and 42%), Mexico doubles theirs between periods (21% to 41%) and that of Colombia increases around 60% going from 27% to 44%. Index C_b rises in Brazil (5.9 to 9.1), decreases a little in Colombia (4.7 to 4) and overtly goes down in Mexico (6.8 to 3.75). According to this index, stability in political competition grows in Brazil, stays more or less the same in Colombia and definitely diminishes in Mexico. In contrast, index C_c slightly rises in all countries as it closely follows index C_a: from 2.1 to 2.7 in Brazil, 1.1 to 1.4 in Colombia and 1.2 to 1.4 in Mexico. The behavior of C_c indicates that electoral volatility tended to increase uniformly within states[11]. Because index C_b displays a more interesting distribution, Appendix presents maps of it.

We use two sets of controls: basic and all. The former set includes state dummies and the logarithm of: per capita GDP (Mexico, Brazil), non-residential consumption of Kw per capita (Colombia), population and demographic density. The latter set contains basic controls plus population growth, index of human development and five clusters based on the median of population and per capita GDP (or its proxy) over the period 1993-2010.

The GDP per capita in levels reveal Brazilian municipalities as richer local economies in comparison to Mexico's. Unfortunately Colombia does not have figures for this variable, this being a strong limitation for country comparisons; however, we use nonresidential consumption of electric energy as a proxy for economic activity in municipalities.

5. Specification models and hypotheses

In the analysis, we investigate the relationship between competition in lower chamber elections and the provision of public goods in municipalities. Our relationship of interest is expressed as $y_i = f(G_i, X_i)$, where y_i is the provision of the public good in municipality i, G_i denotes government effectiveness and $\boldsymbol{X}_i$ a vector of characteristics. Government effectiveness, based on the *Worldwide Governance Indicators*, refers to the quality of public and civil services, as well as the quality of policy formulation and implementation. In turn, G_i is a function of the responsiveness of political agency to constituents' demands and fiscal resources in the municipality. From a multidimensional view of political competition, political responsiveness is positively associated with political competition. Thus $G_i = g(C_i, F_i)$, where C_i stands for political competition and F_i for fiscal resources in municipality i.

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[11] "Departments" in Colombia are akin to "federal states" in Brazil and Mexico.

Consequently $y_i = h(C_i, F_i X_i)$ where function h can take several forms. In empirically identifying this relationship three main challenges emerge: specification form, unobserved individual effects and simultaneity. First, we have no certainty whether the specification form follows a lineal model. Yet, we start by exploring lineal relationships by using all variables in levels and logarithms. The log-odds ratio is applied to public goods such as sewer coverage or child mortality whose measure ranges between zero and one in order to correctly perform linear regressions.[12]

Second, the government responsiveness, or government quality, is not perfectly observed. In terms of data panel, this means that there are unobserved individual effects related to the ability of governments to deliver public goods. In consequence, we perform fixed and random effects models for panel, and explore the Hausman & Taylor estimator which corrects for this kind of endogeneity in random effects models. This paper reports results from tackling the first and second challenge.

Third, municipalities with better provision of public goods could be more attractive for parties and candidates because they represent better career perspectives and have wealthier and more educated voters that support them. Simultaneity between government quality and the provision of public goods brings about endogeneity and the need to find instrumental variables to make correct inferences. We are working on this matter and will report these results soon[13].

The baseline for cross-section specifications is:

$$y_{it} = \mathbf{y}'_{it-1}\beta_0 + \mathbf{C}'_{it}\beta_1 + \mathbf{F}'_{it}\beta_2 + \mathbf{X}'_{it}\Psi + u_{it} \tag{1}$$

Where i=1,..., n and t=1,2. The lagged term captures the path-dependence of public good provision, especially for public utilities; Ψ is a column vector of parameters associated with $\mathbf{X}_i$, and u_{it} is the random term[14].

The baseline for fixed and random effects panel specifications is respectively:

$$y_{it} = \mathbf{C}'_{it}\beta_1 + \mathbf{F}'_{it}\beta_2 + \mathbf{X}'_{it}\Psi + c_i + u_{it} \tag{2}$$

$$y_{it} = \mathbf{C}'_{it}\beta_1 + \mathbf{F}'_{it}\beta_2 + \mathbf{X}'_{it}\Psi + c_i + v_{it} \quad \text{where } v_{it} = c_i + u_{it} \tag{3}$$

The term c_i represents the unobserved individual effect which is a random variable. While the fixed effects model assumes that $Cov = (\mathbf{C}_{it}, \mathbf{F}_{it}, \mathbf{X}_{it}, c_i) \neq 0$ and eliminates the

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[12] The transformation for y_i is $\ln(y_i/(1 - y_i))$. To calculate the predicted values as percentages we apply the formula $y = \exp(\widehat{y})/(1 + \exp(\hat{y}))$.

[13] Likewise the relationship between fiscal resources and dimensions of political competition such as the effective number of parties can be ambiguous. On one side, a large number of resources could induce the entry of fewer parties because incumbents establish strong ties with the electorate thus reducing entrants' chances of victory. Evidence for Brazil using mayoral elections points in this direction (Boulding & Brown, 2013). Alternatively, the large pool of resources could induce party entry because of the high political stakes. On the other side, scarce resources may discourage competition too for career incentives are few for politicians.

[14] The differences in differences model was also explored: $\Delta y_i = \Delta \mathbf{C}_i\beta_1 + \Delta \mathbf{F}_i\beta_2 + \Delta \mathbf{X}_i\Psi + u_i$

unobserved individual effect by using the within-groups estimator, the random effects model assumes that this covariance is equal to cero and tackles the serial correlation by using the GLS estimator (Wooldridge, 2002).

The model for the Hausman & Taylor estimator is,

$$y_{it} = \mathbf{C}'_{it}\beta_1 + \mathbf{F}'_{it}\beta_2 + \mathbf{X}'_{it}\Psi + \mathbf{Z}'_{1it}\alpha_1 + \mathbf{Z}'_{2it}\alpha_2 + c_i + v_{it} \qquad (4)$$

Where $\mathbf{Z}'_{1it}$ and $\mathbf{Z}'_{2it}$ are time-invariant variables such that $E\left(c_i \mid \mathbf{X}_{it}, \mathbf{Z}_{1it}\right) = 0$ and $E\left(c_i \mid \mathbf{C}_{it}, \mathbf{F}_{it}, \mathbf{Z}_{2it}\right) \neq 0$. This model allows for correlation between the unobserved individual effect and some of the independent variables, making it less sensitive to the ignorance about c_i. It is also appropriate when there are time-invariant variables correlated with the unobserved heterogeneity (Greene, 2012). In our exercise, variables in $\mathbf{Z}_{1it}$, that is exogenous ones, correspond to the logarithm of population and demographic density, and dummy variables by states (time-invariant). Variables in $\mathbf{Z}_{2it}$, or endogenous ones, are the log of the political competition indicator and either one of our three fiscal variables or the log of GDP per capita. This last set also includes a time-invariant variable built on five clusters drawing upon the *Anselin Local Moran's I statistic* based on turnout (median over 1994-2010). We call this variable *cotype2* and employ it under the basic intuition that clusterization of municipalities according to voter participation conveys information about the quality of government. Nonetheless we do not have a prior about the direction of the effect[15].

The hypotheses to assess are:

Hypothesis 1 (political responsiveness): Stronger political competition in lower chamber elections is positively associated with the local provision of public goods. This means that $0 < \beta_1$ for public goods whose provision increases with its measure (i.e. water and sewer coverage, primary education rate) and $0 > \beta_1$ otherwise (i.e. infant mortality, student-teacher ratio)[16].

Hypothesis 2 (local accountability): The more advanced government decentralization, the stronger the influence of political competition in Congress elections over y_i. This is because Congress members are closer to their local constituents. Brazil could exhibit greater significance of β_1 and β_2 via this channel.

Hypothesis 3 (party discipline): The higher the degree of nationalization of the party system, the larger the influence of Congress elections over y_i. This occurs because national

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[15] The Local Moran's I statistic measures the spatial association between geographical entities identifying clusters of features with values similar in magnitude. Calculations were based on the Euclidean distance. Our variable *cotype2* reflects the 1:1 correspondence of the set of clusters given by {Not significant, LL, LH, HL, HH} with the following set of numbers {1,2,3,4,5}.

[16] Larger provision means wider sewage and water coverage, higher primary education rates or more years of education in the population older than 15 years, lower infant mortality rates, and lower student-teacher ratio in primary education.

and local politicians align their agendas when parties are centralized. By this channel, β_1 coefficients for Mexico could reach significance, although their signs cannot be predicted.

Hypothesis 2 and 3 underscores two main channels of the influence of national politics over local politics. The former refers to government decentralization which, in theory, would strengthen localities' capacities and orientate national politicians to serve local demands. Nevertheless such alignment between national and local politicians cannot be taken for granted insofar as local or national politicians could have own agendas in which their constituencies rank very lowly thereby making political responsiveness costly and slow-moving. Hypothesis 3 assumes that party discipline, expressed through its degree of nationalization, induces coordination between local and national politicians, however, such coordination does not necessarily conduce to stronger political responsiveness as party discipline can also service welfare-diminishing practices (i.e. neglect of community's needs, *clientelism*). Thus hypothesis 3 only states that Mexico could provide statistical evidence of the effects of political competition via this channel, although they could be positive or negative.

Hypothesis 4 (size of municipality): Political competition in municipalities with smaller populations and smaller fiscal budgets behaves differently to how it behaves in medium-sized and larger municipalities. Smaller municipalities could represent lower marginal votes for politicians running for Congress elections. However, if the municipality clusters within a region with high electoral mobilization, its marginal votes could be decisive in the electoral contest.

Regarding fiscal variables the expected relationships are quite simple. Higher per capita municipal budget is expected to be positively related to public goods provision. The effect from the share of transfers and the share of urban property tax revenue could be positive or negative depending on the context. For example, if transfers are allocated with compensatory criteria, then larger shares are associated with lower provision of public goods. Nonetheless if transfers are heavily invested in the expansion of certain public goods, their expected effect is positive. Likewise a larger share of urban property tax could signal better local governance (positive effect) or an overly concentrated or small local tax base (negative effect).

5.1 Econometric Results

Panel specifications are robust to alternative measures used in both dependent and independent variables (levels and logs), and also show stability in the signs of the coefficients. In contrast, results from cross-section specifications, equation (1), are less stable and hard to interpret as signs of political competition measures were contrary to what was expected. This lack of robustness could be attributed to the fact that we are using the already defined averages for at least two elections instead of measures of consecutive elections. For this reason a panel specification is more suitable for comparisons of averages of performance of municipal government and political competition.

Tables A.3.1 to A.3.5 and Tables A.4.1 A.4.5 in the Appendix report, respectively, estimations of coefficients of β_1 using equation (2), and using equation (3) and (4). Each table gathers results using the same dependent variable either measured in log-odds ratio or

logs. For the independent variables, we take the log of seven political competition variables plus two other joint specifications. The first joint specification combines the simultaneous effect of the log of the effective number of parties and turnout, and the second adds the interaction between these two variables, that is C_a. Thus each table contains results from nine estimations with basic controls and nine estimations with all controls for each country. Likewise Tables A.5.1 to A.5.5 and Tables A.6.1 to A.6.5 also in the Appendix summarize, respectively, estimations of coefficients of β_2 using equation (2) and (3)[17].

These specifications correspond to a log-log model which is useful to explore relationships in terms of growth rates and elasticities. We highlight these results among many other alternative regressions because it seems to have been more challenging for the coefficients to reach significance in this model. In this way we apply a strict reference point to start assessing the hypotheses.

Tables A.7.1 to A.7.3 summarize information on the coefficients of political competition variables (β_1) that reach significance (1%, 5% or 10%) as well as their signs indicating the estimator used. For example the first cell in Table A.7.1, corresponding to water coverage in Brazil as the dependent variable, reports the following: (-)FE, RE-Basic, H&T. This means that the coefficient for the difference of two main party's vote share (*difrank2*) always takes a negative sign and is significant using the fixed effect model (FE) with both sets of controls, the random effect models and basic controls (RE-Basic), and applying the Hausman & Taylor estimator (H&T). The first cell in Table A.7.2 has no content indicating that when sewer coverage in Colombia is the dependent variable, the variable *difrank2* is never significant.

The effect of political competition variables on the provision of sewer coverage is strong in Mexico and almost non-existent in Colombia. Table A.7.3 shows that for Mexico the difference of the two main parties' vote share (*difrank2*) takes a negative sign while the effective number of parties *(enp)* and the indexes *pc_a*, *C_a* and *C_c* take positive signs thereby supporting hypothesis 1. Nevertheless *turnout* and index *C_b* show a negative but significant coefficient indicating that higher *turnout* and electoral stability relate negatively to sewer coverage. In the last two regressions, the coefficients of *turnout* continue to be negative and the coefficients of *enp* switch signs. In the next section we will elaborate on this result. Table A.7.2 points out that some political indicators are significant and take the expected sign in Colombia when using the RE estimator and all controls.

As to water coverage, the Mexican pattern of results is similar to that of sewerage coverage. In Colombia, measures of *enp* and *C_a* take positive signs as expected under the FE estimators, while *turnout* and *C_b* reach significance only through the RE estimator, which suggests a weaker effect of political competition variables. In Brazil all measures show strong support for hypothesis 1, although none of the political variables are significant in the last joint regression.

Results for the log of the gross rate of primary education show that Mexico sticks to the same pattern of results already found. In Colombia, only *difrank2*, *enp* and *turnover* are significant

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[17] Results using the Hausman & Taylor in Tables A.4.1 to A.4.5 correspond to regressions in which the fiscal variable was the municipal revenue per capita. No joint specifications were run for this estimator.

under the FE and H&T estimators (the last two measures reach significance using the RE estimator). Nonetheless *turnover* shows a negative sign contrary to the expected one again suggesting a less consistent and weaker effect. Results for Brazil indicate that all political measures are significant and take expected signs under the RE estimator with basic controls as well as the H&T estimator. Coefficients using the FE estimator in Brazil are less stable as they switch signs according to the set of controls.

Concerning infant mortality, Mexico follows exactly the same pattern as before, while Colombia provides support for hypothesis 1 in all individual measures of political competition, except *C_b*, when the FE and the H&T estimators are applied; some significant coefficients, although with opposite signs, are also reached by the RE estimator. Brazil displays significant coefficients with right signs for almost all political variables by using the FE estimator with basic controls, the RE and the H&T estimators. The exception in this case is *turnout* which positively affects the rate of infant mortality.

Finally regarding the student-teacher ratio in primary education, results in Mexico using the FE and H&T estimators show strong statistical significance and the expected signs in *difrank2*, *enp*, *pc_a*, and *C_c*. The effect regarding *turnover* and *C_b* once more takes a sign contrary to the expected suggesting that higher turnout and electoral stability increases this ratio. The last two joint regressions confirm these effects. Also, results using the RE estimator take wrong signs in cases such as *C_a*, *C_b* and *C_c*. In Colombia, none of the political variables exert a statistically significant influence over this ratio. Brazil offers a more supportive picture for hypothesis 1 as the signs of political competition variables stay stable under the two sets of controls and the FE, RE and H&T estimators (stronger significance with basic controls). Yet index *C_b* shows a positive and significant coefficient, suggesting that higher electoral stability increases the student-teacher ratio in primary education instead of reducing it (as well as *pc_a* using RE and all controls).

In sum, Brazil and Mexico are the cases that more consistently provide support for hypothesis 1. The former country shows a strong connection of political competition variables with water coverage, infant mortality rate, and the student-teacher ratio in primary education. The latter country extends such a connection to sewer coverage and years of education in the population that is older than 15 years (*edu15*), although the behavior of *turnout* and index *C_b* remains puzzling. The fact that *turnout* and electoral stability are inversely associated with the provision of these public goods puts forward the idea that voter participation and stable electoral loyalties are achieved by other means different to the delivery of public goods.

In contrast, Colombia offers some statistical evidence towards supporting hypothesis 1 based on infant mortality, but partial and weak support using water coverage or the gross rate of primary education as dependent variables.

The effect of fiscal variables is consistent with this balance as can be seen in Tables A.6.1 to A.6.5 and Tables A.7.1 to A.7.5. In Mexico and Brazil, per capita municipal revenues increase the provision of all public goods while the share of transfers in current revenues and the share of urban property tax in total tax revenues tend to negatively affect these provisions.

These inverse relationships suggest that poorer municipalities, where the provision of public goods is lower, are more dependent on federal transfers and the urban property tax.

The Colombian case shows that per capita municipal revenues negatively affect sewage and water coverage with a statistical significance of 10% and 1% respectively, contrary to the expected effect. The other two fiscal variables are only significant in explaining the dynamics of these two utilities using the RE estimator and taking a negative sign. In contrast, per capita revenues and the share of transfers show a significant and negative coefficient when explaining the ratio of infant mortality which is the only public good where political variables boast coherent explanatory power if the FE estimator is applied. The primary education rate and the student-teacher ratio are significantly affected by fiscal variables only via the RE estimator.

Comparing coefficients of political variables between countries across all estimators and using basic controls, we find that Brazilian elasticities are larger for most of the political variables, except *difrank2* in which case Mexican elasticity tend to exhibit greater values. Similarly coefficients of per capita municipal revenue and the share of total transfers are likely to take greater values in Brazil. These results provide support for hypothesis 2 on enhanced local accountability via decentralization.

In assessing hypothesis 4, we apply the fixed effects estimator and the cross-section specification dividing the sample according to five population ranges: 0-10,000, 10,001-30,000, 30,001-50,000, 50,001-250,000, and >250,001. We define these ranges using population histograms in our three countries. Overall 75-85% of municipalities lie in the first two ranges whereas only 2-3% of municipalities have populations greater than 250,000 inhabitants.

Once again we highlight panel data estimations because the signs of the coefficients behave more coherently than the cross-section results. Tables A.9.1 to A.9.5 presents the coefficients of political competition variables from panel data estimations using each of our five public goods. In the case of Brazil, only water coverage displays the expected signs in the political competition variables in contrast to the gross rate of primary education and infant mortality. Regarding water coverage, the significance of *turnout* across all ranges suggests that higher levels of voters' electoral mobilization have a positive effect on this provision; furthermore these coefficients increase throughout the population ranges suggesting that *turnout* affects the provision of public goods more clearly in municipalities with more inhabitants. Also, political competition variables reach significance in the population range of 10,001-30,000 inhabitants using the student-teacher ratio as the dependent variable.

Estimations for Colombia show that measures such as *enp* and *turnover* have a significant and positive impact on water coverage in localities with 30,001-50,000 inhabitants. Coherently with all sample results, political variables show significant coefficients in explaining infant mortality across several population tiers, especially in *turnout*, whose coefficients increase throughout population ranges. In this light, voter participation has greater influence in larger municipalities.

The coefficients of political variables in Mexico continue offering strong support for hypothesis 1 across all population ranges. Once again the signs of *turnout* and index *C_b* are contrary to what was expected. The coefficients for *difrank2*, *enp* and *turnout* tend to exhibit higher values in the population ranges 10,001-30,000 and 30,001-50,000, indicating that the effect of electoral variables on the provision of public goods is larger in medium than in small and large municipalities. The exception is the student-teacher ratio where the coefficients of political competition variables increase in the different population ranges. In sum this exploratory analysis provides initial ground to continue working out hypothesis 4.

5.2 Assessing Results

We find that both the entry & exit dimension and voter sensitivity to partisan agency have an influence over the provision of local public goods. Also, indexes correcting for electoral volatility, such as *C_b* and *C_c*, exhibit explanatory power. All these effects are clearly mediated by the political structure and the use of fiscal resources in each country. In this section, we briefly assess our results vis-à-vis those found by Arvate (2012), Cleary (2007), and Sánchez & Pachón (2013) keeping in mind differences in research design.

According to our results, higher political competition in Brazilian lower chamber elections increases water coverage and reduces infant mortality and the student-teacher ratio. Arvate (2012), using mayoral elections for 2001-2004, finds a positive effect of the number of effective parties on the number of students and teachers in primary schools and free immunizations. In this author's view, Brazilian municipalities enjoy certain features that create a favorable environment for local political competition: total autonomy to decide on the supply of public goods, free entry of candidates and compulsory voting.

It could be that local governments in Brazil perform as the Chicago School predicts, however, to provide a systemic picture of political competition, other levels of political agency must be examined simply because of nested structures within government and concurrent fiscal spending. Arvate's results must be contextualized in a political scenario characterized by fragmented politics, high political transaction costs and accountability issues (Osterkatz, 2012). It is necessary to carefully examine the evidence that relates fiscal and political decentralization with stronger political responsiveness of federal deputies, and consider the effect introduced by the Workers' Party (*Partido dos Trabalhadores*) in the national politics since the 1990s.

In Mexican politics, Cleary (2012) finds that the margin of victory in mayoral elections does not influence the provision of sewage and water coverage. Instead he finds a positive effect of *turnout*, literacy rates and poverty over this supply (1990-2000). Contrariwise, we find that all entry & exit measures of political competition in lower chamber elections positively influence the provision of public goods, while *turnout* and the index of electoral stability *C_b* do it negatively. We hypothesize that the strong nationalization of the party system in Mexico channeled the influence of federal deputies into local governments and we provide initial affirmative econometric evidence for hypothesis 3. The fact that *turnout* and *C_b* take signs contrary to those postulated in hypothesis 1 suggests that the effect of coordination between local and national politicians over voters' participation and electoral stability are against

political responsiveness. Under this light, these dimensions of political competition are in deficit in the Mexican system.

Although this is an exploratory analysis, these results underscore underlying tensions between fiscal and political decentralization expressed in local government performance. Despite the fact that Mexico is the least decentralized country of our three, the nationalization of the party system and governmental hierarchies have served the provision of key local public goods such as sewage and water coverage *comparatively* well. Seen by the nationalization of the party system indicator, local governments were responsive to their constituencies' needs not only by means of the higher number of effective parties or a lower margin of electoral victory, but also due to party incentives and governmental hierarchies. More research in this direction would help us to approach more appropriately the incentive structure for local governments.[18]

As to Colombia electoral contestability and vulnerability has increased since 1991, but voter participation has continued at low levels. The party system is highly fragmented and volatile, while some local communities face threats of violence that put political contesters at risk and disincentivize voters. As a result, political competition indexes have not strongly improved, and in the cases of threatened localities, measures of political competition turn out to be meaningless. Electoral reforms to enhance the entry & exit dimension brought a political opening that was insufficient to reactivate communities politically. The results that show a disconnection between electoral politics and government performance is therefore no big surprise.

Sánchez & Pachón (2013) find that indicators of political competition based on mayoral elections has no effect on education and water coverage, but suggest that national politics do influence those provisions insofar as stronger competition in the lower chamber introduce the right incentives for mayors to update the cadastral records, which in turn means increasing tax revenues for municipalities. According to these authors, the local fiscal effort, instead of national transfers or royalties, fosters the provision of education and water coverage in Colombian municipalities. In the same line, we did not find significant relationships between our set of public goods and our three fiscal variables (per capita municipal revenues, share of urban property tax, and share of transfers).

Nonetheless infant mortality was the only dependent variable, consistently and significantly affected by political competition in Colombian lower chamber elections. We explain this effect as the outcome of several governmental actions undertaken and supported at the national level such as the AIEPI strategy (*Atencion Integral Enfermedades Prevalentes de la Infancia*) and the extension of the social security coverage in the last two decades. Let us recall that infant mortality is a proxy of health services for small children and basic sanitation; it is affected by several actions at the local level, such as infant immunization, health and nutrition services for women and small children, sewage and water coverage, and sanitation campaigns. As of 2000, Díaz (2003) finds that infant mortality in Colombia decreased as a

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[18] Doing this would provide sound ground to discuss views such as that of Sánchez & Pachón (2013), whereby they stated that local politicians who are totally independent from national politicians become responsive to their communities' needs.

result of improvement in health services for small children, among other factors. However, this decline has not been homogeneous between socio-economic levels. Inequality in this overall decline of infant mortality is coherent with the fact that other determining variables of basic sanitation (i.e. sewerage and water coverage) expand sluggishly and unevenly across municipalities.

Our exploratory results for Colombia also highlight the weak relationship between local public goods provision and public spending, which goes in the same direction of previous studies questioning the efficiency of this spending. Decentralization efforts, from the panorama of all municipalities and not just a few cities, look shaky. That is why the political foundations of decentralization processes and effective implementation need to be better understood before they can bear fruit.

6. Conclusions

Based on panel data including several economic and political indicators from 1990 to 2010, this exploratory analysis finds that the entry & exit dimension and voter sensitivity to partisan agency, as well as indexes correcting for electoral volatility in lower chamber elections do influence the provision of key local public goods. This occurs in a strong way in Brazil and Mexico but much less decisively in Colombia.

A multidimensional view of political competition has widened our understanding of this phenomenon in these three young democracies insofar as several measures were taken into account and Congress elections were considered. Thus the entry of new parties and their relative electoral strength are as important as voter turnout and electoral stability because all these variables inform us about the linkage between political parties and voters which, if aligned, could bring about government responsiveness. Using lower chamber elections highlights the role of governmental structure and the party system which mediate and set up the incentive framework for local governments. From this perspective, favorable results in Brazil are closely related to its relatively advanced local and political decentralization, while in Mexico, hierarchical government and strongly nationalized party system channels positive effects on political responsiveness through indicators of the entry & exit dimension but negative ones through variables related to voter sensitivity to partisan agency and electoral stability. In Colombia, political competition has intensified in the entry & exit dimension but has continued withering in terms of voter participation and electoral stability; furthermore, fiscal decentralization does not show strong connection with the local provision of public goods.

Our analysis underscores the role of national politics in the performance of local governance and the underlying tensions between fiscal and political decentralization, thereby suggesting that the effects of fiscal decentralization could decisively hinge on features of the party system.

These insights are exploratory and must be taken cautiously; nonetheless the fact that they are in line with related studies boosts our confidence in the direction of results. Future work

will tackle econometric issues such as simultaneity and spatial effects. The goal is to account for the heterogeneity of within-country development, single out the dynamics of cities as well as identify the role of economically central areas versus peripheral ones. Likewise, we would deepen our characterization of both political competition patterns and anti-political competition patterns (i.e. collusion), which co-exist in these political systems as the multidimensional approach points out. Ultimately this analysis aims to shed light upon the political foundations of local development in the context of Brazil, Colombia and Mexico.

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Appendix

Table A.1.1 Brazil: Database Sources

Variable	Unit	Source
Sanitation &Health		
Water Coverage	%	1991,2000, 2010 Instituto de Pesquisa Econômica Aplicada (IPEA) (Domicílios - com água encanada)
Sewerage coverage	%	1991,2000[1] Instituto de Pesquisa Econômica Aplicada (IPEA) (Domicílios - com instalações sanitárias rede geral – número[2])
Infant mortality	%	1991,2000, 2010 Instituto de Pesquisa Econômica Aplicada (IPEA) Mortalidade infantil (por mil nascidos vivos)
Education		
Enrollment Primary school (gross rate)	%	1991, 2000, 2010 Instituto de Pesquisa Econômica Aplicada (IPEA) (Taxa de frequência bruta ao fundamental)
Student-teacher ratio in primary	ratio	2003-2009, 2012 Authors' calculation. RAD = (MPrim/DPrim)
Students and teachers in primary school	persons	2003-2009, 2012 Ministério da Educação, Instituto Nacional de Estudos e Pesquisas Educacionais - INEP -, Censos Educacionais. ESTATCAR - IGBE Instituto Brasileiro de Geografia e Estatistica (IBGE) (Matriculas ensino fundamental -MPrim; Docentes ensino fundamental-DPrim)
Public Finances		
Municipal budget (Revenues, expenditures)	Reais	2000-2012 FINBRA https://www.tesouro.fazenda.gov.br/pt/finbra-financas-municipais (Receitas, Despesas)

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[1] Data for this variable in 2010 is not reliable.

[2] Calculation using formula: [Number of houses with swerage (ALn)/Total number of houses (Dn)] x 100

GDP & Development		
GDP (municipal)	Reais of 2000	1996, 1999-2010 http://www.ibge.gov.br/home/estatistica/pesquisas/pesquisa_resultados.php?id_pesquisa=46 (PIB municipal Reais a preços do ano 2000) Deflator Implícito do PIB nacional
Conversion factors		PIB per capita - R$ (mil) - Instituto de Pesquisa Econômica Aplicada (IPEA) - GAC_PIBCAPN GDP per capita (constant LCU Base 2000) PPP conversion factor, GDP (LCU per international $) http://data.worldbank.org
Index of Human Development		1991, 2000, 2010 http://www.ipeadata.gov.br/ Índice de Desenvolvimento Humano -IDH
Gini Index		1991, 2000, 2010 Instituto de Pesquisa Econômica Aplicada (IPEA)
Homicide rate	rate	2005-2009 Datasus - Site SUS (Sistema Único de Saúde) (Per 100.000 inhabitans)
Area	Km2	1991,1998, 2000, 2010 Instituto Brasileiro de Geografia e Estatística (IPEA) (Área Geográfica publicada nos Censos)
Population	persons	1996, 2000, 2007, 2010 Instituto Brasileiro de Geografia e Estatística
Electoral variables		
Political competition measures	Rates	1994-2010 Repositorio de datos electorales http://www.tse.jus.br/eleicoes/repositorio-de-dados-eleitorais Authors' calculations based on elections of federal deputies
Electoral potential	persons	1994-2010 http://www.ipeadata.gov.br/ Eleitorado

Table A.1.2 Colombia: Database Sources

Variable	Unit	Source
Sanitation &Health		
Water Coverage	%	2005, 2008, 2011 Cobertura Total de Acueducto (Número de viviendas que cuentan con el servicio / Total de viviendas en el municipio) x 100. Departamento Administrativo Nacional de Estadística (DANE), Superintendencia de Servicios Públicos Domiciliarios (SSPD) Instituto Geográfico Agustín Codazzi (IGAC) - Sistema de Información Geográfica para la Planeación y el Ordenamiento Territorial (SIGOT). 2013. http://sigotn.igac.gov.co/sigotn/default.aspx
Sewerage coverage	%	2005, 2008, 2011 Cobertura Total de Alcantarillado (Número de viviendas que cuentan con el servicio / Total de viviendas en el municipio) x 100. http://sigotn.igac.gov.co/sigotn/default.aspx
Infant mortality	%	2005-2009 Tasa de Mortalidad infantil. [(Número de defunciones de niños menores de un año / Número de nacidos vivos al año) x 1000]. Departamento Administrativo Nacional de Estadística (DANE) Federación Colombiana de Municipios (FCM). Noviembre de 2013 http://www.fcm.org.co/index.php?id=162
Education		
Enrollment Primary school (gross rate)	%	1998-2011 Cobertura bruta en educación primaria. (Número de estudiantes Primaria / población en el rango de edad Primaria) X 100. Ministerio de Educación Nacional (MEN) 2013. http://sigotn.igac.gov.co/sigotn/default.aspx
Student-teacher ratio in primary	ratio	2003-2008 [(Número de alumnos en ciclo básico y medio / Número de profesores en ciclo básico y medio) x 100]. http://sigotn.igac.gov.co/sigotn/default.aspx
Public Finances		
Municipal budget (Revenues, expenditures)	Thousands of pesos	1998-2012 Ejecuciones Presupuestales Municipales (Miles de pesos corrientes) Departamento Nacional de Planeación (DNP). Noviembre de 2013 https://www.dnp.gov.co/Programas/DesarrolloTerritorial/FinanzasP%C3%BAblicasTerritoriales/EjecucionesPresupuestales.aspx https://www.dnp.gov.co/Programas/DesarrolloTerritorial/FinanzasP%C3%BAblicasTerritoriales/Hist%C3%B3ricodeParticipacionesTerritoriales.aspx
Conversion		PPP conversion factor, GDP (LCU per international $)

factor		http://data.worldbank.org
GDP & Development		
Non residential Consumption of Kw	Kw	2003-2007 Consumo promedio de Energía por habitante en sector No Residencial Superintendencia de Servicios Públicos Domiciliarios (SSPD) 2013. http://sigotn.igac.gov.co/sigotn/default.aspx
Index of municipal Development		2002-2010 Indice de Desarrollo municipal. Departamento Nacional de Planeación (DNP). Noviembre de 2013 https://www.dnp.gov.co/Programas/DesarrolloTerritorial/Evaluaci%C3%B3nySeguimientodelaDescentralizaci%C3%B3n/DocumentosdeEvaluaci%C3%B3n.aspx
Index of municipal poverty	%	2005 Indice de Pobreza Multidimensional (IPM) Departamento de Planeación Nacional (DNP). Noviembre de 2013 https://www.dnp.gov.co/Programas/DesarrolloSocial/Pol%C3%ADticasSocialesTransversales/Promoci%C3%B3ndelaequidadyreducci%C3%B3ndelapobreza.aspx
Homicide rate	rate	1998-2011 [Número de homicidios comunes al año por municipio / (población total municipio / 100.000)]. Vicepresidencia de la República 2013. http://sigotn.igac.gov.co/sigotn/default.aspx
Area	Km2	Área oficial en Kilómetros cuadrados (Km2). http://sigotn.igac.gov.co/sigotn/default.aspx
Population	persons	1993-2012 Número total de personas que residen el municipio (Urbano/Rural). Departamento Administrativo Nacional de Estadística (DANE). 2013. http://sigotn.igac.gov.co/sigotn/default.aspx
Electoral variables		
Political competition measures	rates	1994-2010 Bases de datos sobre resultados electorales CEDE, Universidad de los Andes https://datoscede.uniandes.edu.co/ Observatorio de procesos electorales, Universidad del Rosario http://www.urosario.edu.co/ope/ Registraduría Nacional del Estado Civil, Colombia http://www.registraduria.gov.co/-Historico-de-Resultados-.html Authors' calculations based on elections of deputies in lower chamber
Turnout	rate	Authors' calculations based on elections of deputies in lower chamber

Table A.1.3 Mexico: Database Sources

Variable	Unit	Source
Sanitation &Health		
Water Coverage	%	1995, 2000,2005,2010 http://sc.inegi.org.mx/sistemas/cobdem/ Indice de agua entubada
Sewerage coverage	%	1995, 2000,2005,2010 http://sc.inegi.org.mx/sistemas/cobdem/ Indice de drenaje
Infant mortality	%	2000, 2005, 2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal Tasa de mortalidad infantil: Defunciones menores de 1 año X 1000 nacimientos en el año.
Education		
Yers of education in populatio n older than 15	%	1995, 2000,2005,2010 http://sc.inegi.org.mx/sistemas/cobdem/ Grado promedio de escolaridad de la población de 15 y más años
Student-teacher ratio in primary	ratio	2000-2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal
Students and teachers in primary school	persons	1994-2004 http://sc.inegi.org.mx/sistemas/cobdem/ 2005-2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal Personal docente en primaria, alumnos en primaria (modalidad escolarizada)
Public Finances		
Municipal budget (Revenues, expenditur es)	Pesos	1996-2010 http://www.inafed.gob.mx/es/inafed/Municipales Ingresos y egresos brutos municipales
GDP & Development		
GDP (municipa	Constant 2010 US$	2000, 2005, 2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal

l) per capita		Producto interno bruto per cápita (dólares PPC, precios 2010)
Conversion factors		GDP per capita, PPP (constant 2011 international $) GDP per capita, PPP (current international $) PPP conversion factor, GDP (LCU per international $) http://data.worldbank.org
Index of Human Development		1995, 2000, 2005 http://sc.inegi.org.mx/sistemas/cobdem/ 2000, 2005, 2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal
Poverty	%	2010 http://www.inafed.gob.mx/es/inafed/Socioeconomico_Municipal Pobreza (% de personas)
Homicide rate	rate	1994-2011 http://sc.inegi.org.mx/sistemas/cobdem/ Número de homicidios comunes al año por municipio / (población total municipio / 100.000)
Area	Km2	2005 http://sc.inegi.org.mx/sistemas/cobdem/
Population	persons	1995, 2000,2005,2010 http://sc.inegi.org.mx/sistemas/cobdem/
Electoral variables		
Political competition measures	rates	1994-2012 Atlas de resultados electorales federales 1991-2012 http://siceef.ife.org.mx/pef2012/SICEEF2012.html# Authors' calculations based on elections of federal deputies in lower chamber (plurality voting)
Turnout	rate	1994-2006, 2012: Presidential elections 2009: Lower chamber elections http://siceef.ife.org.mx/pef2012/SICEEF2012.html#

Table A.2.1 Brazil: Descriptive statistics

Variable	Var	Obs	1991-2000				Obs	2001-2010			
			Mean	Std. Dev.	Min	Max		Mean	Std. Dev.	Min	Max
Sewage system coverage (%)	AL	5507	18.18	25.71	0.00	96.39	0				
Water coverage (%)	AC	5564	60.04	29.79	0.00	100.00	5564	85.60	14.72	0.15	100.00
Primary education (gross rate)	CPrim	5564	98.81	10.18	29.92	149.05	5564	111.86	9.74	64.71	195.59
Ratio Student-teacher in primary school (a)	RAD	5564	19.34	4.81	7.08	47.43	5564	18.12	4.27	6.70	65.68
Infant mortality (%)	MI	5564	40.28	18.66	13.00	106.06	5564	19.25	7.14	8.49	46.80
Municipal revenue, percapita (intert. dollars)	A_P	5304	711.60	1431.26	73.61	82254.16	5561	1036.01	650.65	307.08	20649.10
Total transfers/ current revenue	A13_A1	5304	0.90	0.11	0.19	1.00	5561	0.89	0.09	0.27	0.99
Urban property tax revenue/ tax revenue	A1112_A11	5262	0.22	0.19	0.00	1.00	5561	0.15	0.13	0.00	0.90
Gross domestic product percapita (inter. dollars)	PIB_P	5507	1930.64	2216.31	305.91	59019.68	5564	2779.33	3116.53	536.86	73052.08
Population (thousands)	P	5507	30,833	186,751	795	10,400,000	5564	31,705	191,089	799	10,700,000
Population growth (%)	CP	4974	0.03	0.14	-0.78	1.25	5564	0.01	0.02	-0.06	0.18
Demographic density (hab/Km2)	DDemo	5507	97.97	533.63	0.13	12915.98	5564	108.19	572.45	0.13	13030.48
Index of human development	IDH	5564	0.52	0.10	0.21	0.82	5564	0.66	0.07	0.42	0.86
Gini Index	IG	5564	0.54	0.06	0.34	0.83	5564	0.49	0.07	0.28	0.80
Turnout (%)	turnout	5483	0.74	0.09	0.04	1.00	5569	0.74	0.06	0.47	1.00
Effective number of parties	enp	5483	3.14	1.15	1.03	9.44	5569	4.07	1.34	1.21	12.57
Sum of the two main parties' vote share	sumrank2	5483	0.74	0.13	0.33	1.00	5569	0.65	0.12	0.27	0.96
Difference of the two main parties' vote share	difrank2	5481	0.28	0.21	0.00	0.98	5569	0.20	0.13	0.00	0.86
Vote share of the smallest party	pvotes_s	5483	0.00	0.01	0.00	0.50	5569	0.00	0.00	0.00	0.02
Electoral volatility	EV	5483	0.34	0.18	0.00	0.50	5569	0.42	0.13	0.09	0.88
First principal component	pc_a	5481	-0.65	1.39	-4.33	4.06	5569	0.285	1.239	-3.820	5.611
enp*turnout	C_a	5483	2.34	0.92	0.05	6.65	5569	3.030	1.073	0.868	9.672
enp*turnout/EV	C_b	5164	5.93	4.82	0.01	81.04	5569	9.176	4.773	1.607	39.688
enp*turnout/($|EV-EV_{state}|$-1)	C_c	5164	2.13	0.95	0.00	6.81	5569	2.732	1.037	0.615	8.201

Source: Table A.1.1. (a) Averages: 2003-2006 and 2007-2012

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Table A.2.2 Colombia: Descriptive statistics

Variable	Var	Obs	1998-2005				Obs	2006-2011			
			Mean	Std. Dev.	Min	Max		Mean	Std. Dev.	Min	Max
Sewage system coverage (%)	AL	1113	41.09	26.63	0.00	98.20	1113	40.85	25.97	0.00	99.15
Water coverage (%)	AC	1113	65.13	22.98	0.00	98.65	1113	63.39	22.92	0.00	99.45
Primary education (gross rate)	CPrim	1118	121.45	25.69	15.70	339.23	1121	123.47	29.54	0.00	356.23
Ratio Student-teacher in primary school (a)	RAD	47	31.21	2.31	26.48	36.00	48	30.89	3.63	23.60	43.45
Infant mortality (%)	MI	1098	36.40	14.58	9.46	116.69	1103	34.53	13.95	8.66	101.52
Municipal revenue, percapita (inter. dollars)	A_P	1097	176.76	193.30	0.00	2103.63	1101	498.99	386.43	0.00	6126.15
Total transfers per capita (inter. dollars)	A13_P	807	0.79	0.16	0.17	0.99	1096	0.82	0.14	0.16	0.99
Urban property tax revenue/ tax revenue	A1112_A11	807	0.49	0.22	0.00	1.00	1096	0.40	0.21	0.00	1.00
Nonresidential consumption of energy (kw Per	ENnr	1046	2,743,396	39,700,000	0	1,270,000,000	1054	3,954,144	31,800,000	0	895,000,000
Population (thousands)	P	1101	38,146	229,854	0	6,680,805	1101	39,557	240,209	0	6,997,722
Population growth	CP	1097	0.00	0.02	-0.07	0.07	1097	0.00	0.02	-0.26	0.05
Demographic density (hab/Km2)	DDemo	1039	141.69	619.30	0.16	13484.09	1039	146.74	650.40	0.16	14148.44
Index of municipal development	INDEMUN	1097	34.57	9.53	10.46	74.01	1097	56.73	10.09	4.93	86.02
Index of municipal poverty (2005)	IPM	1113	0.69	0.16	0.14	1.00					
Turnout (%)	turnout	1119	0.40	0.12	0.00	1.00	1122	0.45	0.10	0.13	0.76
Effective number of parties	enp	1118	2.64	0.89	1.00	7.66	1122	3.35	0.99	1.22	7.49
Sum of the two main parties' vote share	sumrank2	1118	0.81	0.11	0.44	1.00	1122	0.71	0.11	0.40	0.99
Difference of the two main parties' vote share	difrank2	1118	0.37	0.21	0.02	1.00	1122	0.24	0.17	0.00	0.87
Vote share of the smallest party	pvotes_s	1118	0.01	0.05	0.00	1.00	1122	0.00	0.01	0.00	0.18
Electoral volatility	EV	1119	0.27	0.13	0.00	0.70	1122	0.44	0.14	0.09	0.98
First principal component	pc_a	1118	-0.42	1.21	-3.33	3.95	1122	0.58	1.21	-2.89	4.18
enp*turnout	C_a	1118	1.07	0.48	0.16	3.65	1122	1.51	0.53	0.29	3.44
enp*turnout/EV	C_b	1113	4.74	4.93	0.18	81.23	1122	4.06	1.82	0.41	17.09
enp*turnout/($\mid$ EV-EV$_{state}$ $\mid$ -1)	C_c	1113	1.12	0.54	0.08	3.84	1122	1.39	0.51	0.25	3.16

Source: Table A.1.2. (a) Averages: 2003-2006 and 2007-2008

Table A.2.3 Mexico: Descriptive statistics

Variable	Var	Obs	1995-2005				Obs	2006-2010			
			Mean	Std. Dev.	Min	Max		Mean	Std. Dev.	Min	Max
Sewage system coverage (%)	AL	2447	53.78	0.28	0.00	0.99	2447	74.54	0.25	0.00	1.00
Water coverage (%)	AC	2447	79.03	0.20	0.00	1.00	2447	85.02	0.18	0.00	1.00
Yers of education in population older than 15	edu15	2447	5.73	1.55	0.00	12.50	2447	6.66	1.52	2.00	13.50
Ratio Student-teacher in primary school (a)	RAD	2447	20.44	3.78	0.00	32.87	2447	19.14	4.03	7.98	103.57
Infant mortality (%)	MI	2446	26.72	7.28	10.33	69.39	2447	17.01	6.71	8.06	56.70
Municipal revenue, percapita (inter. dollars)	A_P	2435	164.51	144.28	0.00	1467.12	2446	271.57	208.00	0.00	2326.27
Total transfers/current revenue	A5_A1	2423	0.88	0.10	0.33	1.00	2422	0.90	0.11	0.25	1.00
Urban property tax revenue/tax revenue	A1112_A11	2381	0.78	1.22	0.00	53.78	2252	0.76	0.38	0.01	14.86
Gross domestic product percapita (inter. dolla	PIB_P	2410	4949.35	3003.66	919.22	32603.00	2446	6568.48	3325.38	1608.18	37077.81
Population (thousands)	P	2449	38,503	115,312	0	1,734,976	2447	42,169	126,748	0	1,820,888
Population growth	CP	2413	0.05	0.11	-0.51	1.22	2434	0.00	0.13	-0.60	1.19
Demographic density (hab/Km2)	DDemo	2446	242.17	1143.69	0.00	19295.89	2446	261.80	1158.93	0.12	17893.44
Index of human development	IDH	2435	0.71	0.07	0.40	0.90	2446	0.77	0.07	0.44	0.97
Index of poverty	Pbr						2447	67.34	18.49	8.75	97.35
Turnout (%)	turnout	2449	0.58	0.10	0.21	1.00	2447	0.52	0.11	0.14	1.00
Effective number of parties	enp	2436	2.42	0.47	1.09	4.05	2443	2.87	0.54	1.19	5.51
Sum of the two main parties' vote share	sumrank2	2436	0.85	0.07	0.62	1.00	2443	0.78	0.09	0.47	0.99
Difference of the two main parties' vote share	difrank2	2436	0.27	0.16	0.02	0.95	2442	0.17	0.12	0.00	0.86
Vote share of the smallest party	pvotes_s	2436	0.00	0.02	0.00	0.59	2443	0.01	0.01	0.00	0.12
Electoral volatility	EV	2436	0.21	0.07	0.03	0.64	2443	0.41	0.06	0.21	0.56
First principal component	pc_a	2436	-0.58	1.02	-3.98	2.29	2442	0.35	1.02	-3.64	4.44
enp*turnout	C_a	2436	1.37	0.43	0.35	13.60	2443	1.46	0.38	0.40	3.32
enp*turnout/EV	C_b	2433	6.80	3.53	1.20	46.51	2443	3.75	1.23	0.83	8.20
enp*turnout/(|EV-EV$_{state}$|-1)	C_c	2436	1.23	0.42	0.27	11.30	2443	1.40	0.36	0.39	3.22

Source: Table A.1.3. (a) Averages: 1994-2006 and 2007-2010

Figure 1: Brazil, Competition Index a

C_aB1
- 0.00 - 1.17
- 1.18 - 1.82
- 1.83 - 2.43
- 2.44 - 3.10
- 3.11 - 3.93
- 3.94 - 6.65
- No record

**Competition Index a= ENP*Turnout:
Federal deputies (1994-1998)**

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984

Scale   1:25,000,000

0   265   530   1,060   1,590
Kilometers

GER
Grupo de Estudios Regionales

**UNIVERSIDAD
DE ANTIOQUIA**
1803
**FACULTAD DE
CIENCIAS ECONOMICAS**
1944

C_aB1
- 0.87 - 2.06
- 2.07 - 2.72
- 2.73 - 3.40
- 3.41 - 4.23
- 4.24 - 5.41
- 5.42 - 9.67

**Competition Index a=ENP*Turnover
Federal deputies (2002 -2010)**

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984

Scale   1:25,000,000

0   265   530   1,060   1,590
Kilometers

GER
Grupo de Estudios Regionales

**UNIVERSIDAD
DE ANTIOQUIA**
1803
**FACULTAD DE
CIENCIAS ECONOMICAS**
1944

Figure 2: Brazil, Competition Index b

C_bB1
- 0 - 3
- 4 - 5
- 6 - 9
- 10 - 15
- 16 - 28
- 29 - 81
- No record

Competition Index b
Federal deputies (1994-1998)

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984

Scale   1:25,000,000

0   265   530   1,060   1,590
Kilometers

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1944

C_bB1
- 1.61 - 5.63
- 5.64 - 8.40
- 8.41 - 11.72
- 11.73 - 16.11
- 16.12 - 22.97
- 22.98 - 39.69

Competition Index b
Federal deputies (2002 -2010)

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984

Scale   1:25,000,000

0   265   530   1,060   1,590
Kilometers

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Figure 3: Colombia, Competition Index a
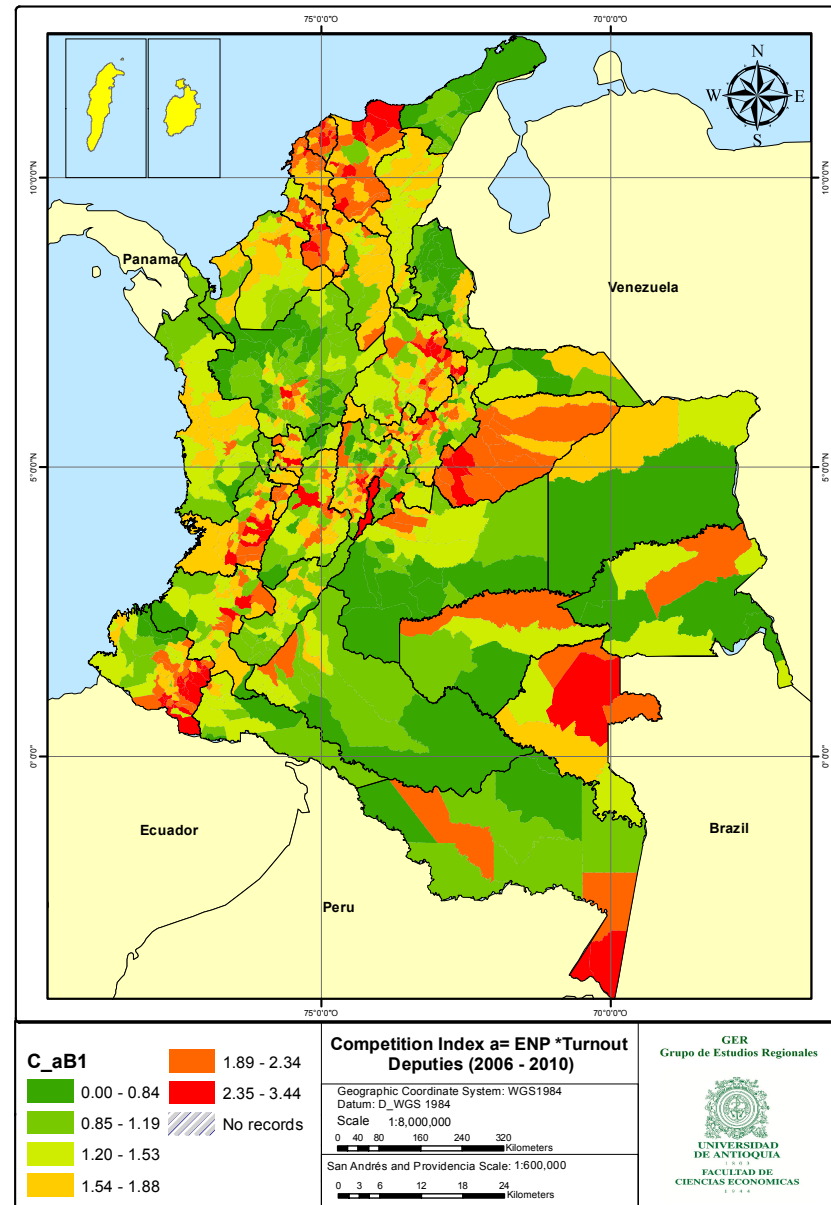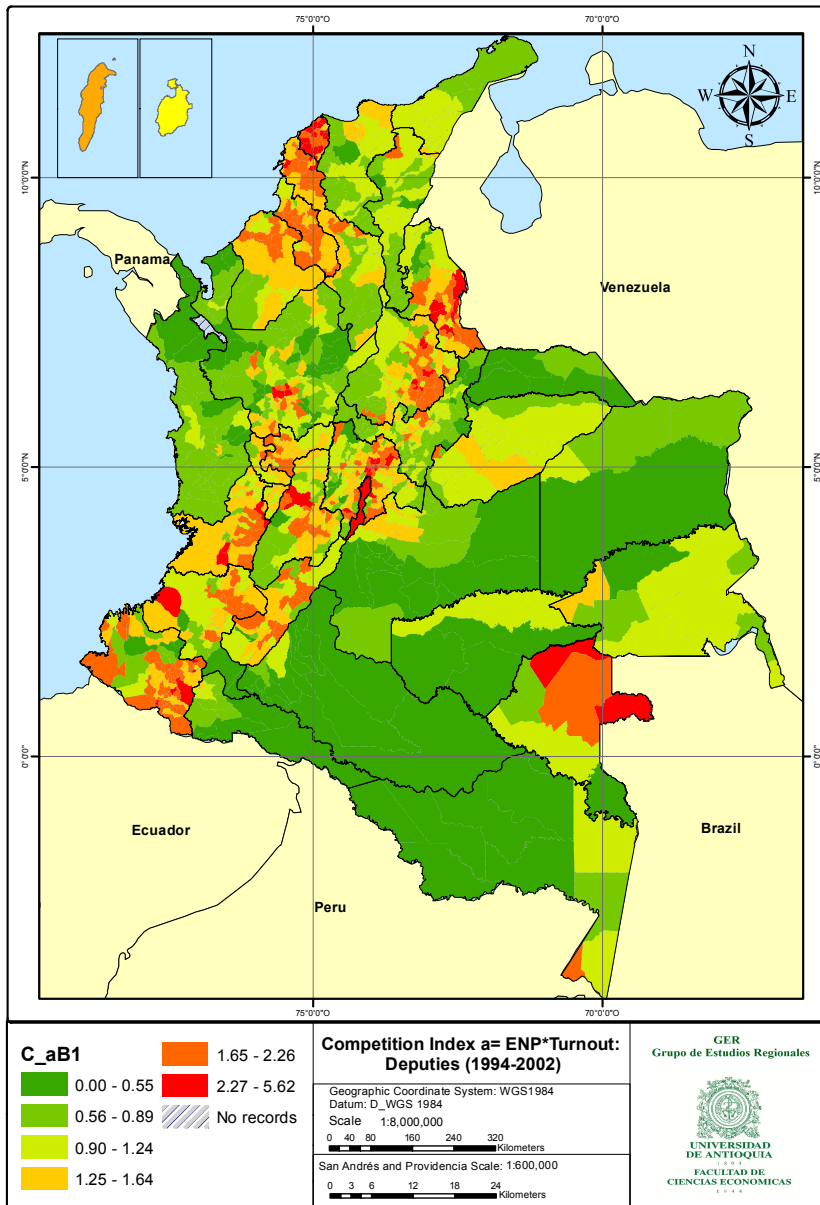
Figure 4: Colombia, Competition Index b

Competition Index b= ENP*Turnout/EV:
Deputies (1994-2002)

C_bB1

- 0.00 - 2.84
- 2.85 - 4.97
- 4.98 - 8.18
- 8.19 - 15.60
- 15.61 - 36.81
- 36.82 - 81.23
- No records

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984
Scale   1:8,000,000
0 40 80   160   240   320
Kilometers

San Andrés and Providencia Scale: 1:600,000
0 3 6   12   18   24
Kilometers

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Competition Index b= ENP *Turnout/EV:
Deputies (2006 - 2010)

C_bB1

- 0.00 - 2.26
- 2.27 - 3.37
- 3.38 - 4.54
- 4.55 - 5.90
- 5.91 - 7.92
- 7.93 - 17.09
- No records

Geographic Coordinate System: WGS1984
Datum: D_WGS 1984
Scale   1:8,000,000
0 40 80   160   240   320
Kilometers

San Andrés and Providencia Scale: 1:600,000
0 3 6   12   18   24
Kilometers

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Figure 5: Mexico, Competition Index a

Competition Index a=ENP*Turnout
Deputies (Plurality, 1994-2003)

C_aB1
0.00 - 0.78
0.79 - 1.12
1.13 - 1.37
1.38 - 1.61
1.62 - 1.92
1.93 - 8.52
No records

Competition Index a:ENP*Turnout
Deputies (Plurality, 2006-2009)

C_aB1
0.00 - 0.78
0.79 - 1.12
1.13 - 1.37
1.38 - 1.61
1.62 - 1.92
1.93 - 8.52
No records

Figure 6: Mexico, Competition Index b

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Table A.3.1

Coefficients of political competition variables. Dependent variable: Log-odds ratio of Sewage coverage, panel estimation fixed effects

</div>

Log C	COLOMBIA		MEXICO	
	Basic	All	Basic	All
difrank2	-.0192	-.0232	-.232***	-.152***
	0.0212	0.0211	0.0261	0.0239
enp	.059	.0705	1.89***	1.24***
	0.056	0.0559	0.117	0.122
turnout	.126	.144	-7.02***	-5.21***
	0.109	0.112	0.218	0.294
pc_a	.0431*	.0547**	.171***	.0626***
	0.0239	0.0239	0.0291	0.0224
C_a	.0788	.0909*	.186*	.229**
	0.0509	0.0508	0.111	0.105
C_b	.0131	.0159	-.656***	-.412***
	0.0486	0.0489	0.0375	0.0386
C_c	.0613	.0734	.718***	.478***
	0.0496	0.0495	0.111	0.108
enp	.0549	.0666	.795***	.7***
	0.0554	0.0555	0.122	0.122
turnout	.119	.137	-6.2***	-4.6***
	0.109	0.112	0.247	0.306
enp	-.474	-.434	-2.61***	-2.32***
	0.344	0.349	0.4	0.397
turnout	-.403	-.358	-12.8***	-11.2***
	0.349	0.356	0.79	0.851
C_a	.531	.502	3.2***	2.86***
	0.336	0.339	0.34	0.341
Obs (1)	1756	1756	4388	4361

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

<div align="center">

Table A.3.2

Coefficients of political competition variables. Dependent variable: Log-odds ratio of water coverage, panel estimation fixed effects

</div>

Log C	BRAZIL		COLOMBIA		MEXICO	
	Basic	All	Basic	All	Basic	All
difrank2	-.0713***	-.0343**	-.0312	-.0368	-.194***	-.148***
	0.0167	0.0152	0.0252	0.0252	0.0215	0.0212
enp	.584***	.13**	.136**	.155**	1.07***	.712***
	0.0569	0.054	0.0658	0.0665	0.0975	0.101
turnout	.89***	1.35***	.0191	.0574	-3.76***	-2.57***
	0.207	0.173	0.111	0.113	0.267	0.317
pc_a	.0648***	.0333	.0561*	.0737**	.114***	.0474**
	0.0214	0.0204	0.0293	0.0307	0.0267	0.0231
C_a	.639***	.246***	.111*	.134**	.206**	.237**
	0.0582	0.0532	0.0569	0.058	0.0962	0.0937
C_b	.308***	.0766**	.0378	.0455	-.316***	-.173***
	0.0378	0.0314	0.0372	0.0374	0.0366	0.0366
C_c	.461***	.218***	.0926*	.115**	.364***	.223**
	0.0614	0.0499	0.0556	0.0566	0.0916	0.0924
enp	.605***	.171***	.136**	.154**	.489***	.451***
	0.0585	0.0544	0.0656	0.0663	0.109	0.109
turnout	1.01***	1.4***	.0033	.0422	-3.25***	-2.17***
	0.256	0.175	0.111	0.115	0.3	0.339
enp	.0059	-.651	-.347	-.28	-1.86***	-1.53***
	0.803	0.706	0.331	0.338	0.284	0.285
turnout	.459	.656	-.474	-.388	-7.81***	-6.46***
	0.772	0.695	0.36	0.366	0.566	0.627
C_a	.601	.825	.485	.436	2.19***	1.87***
	0.803	0.703	0.328	0.333	0.249	0.252
Obs (1)	10367	10024	1756	1756	4368	4341

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.3.3

Coefficients of political competition variables. Dependent variable: Log of primary education gross rate, panel estimation fixed effects

Log C	BRAZIL		COLOMBIA		MEXICO 2	
	Basic	All	Basic	All	Basic	All
difrank2	-9.8e-04	.0036**	-.0053*	-.005*	-.0355***	-.0281***
	0.0016	0.0014	0.0029	0.0029	0.0024	0.0022
enp	.0281***	-.018***	.0217*	.0216*	.247***	.187***
	0.0054	0.005	0.0125	0.0124	0.0107	0.0111
turnout	.0037	.0332**	-.0578**	-.0459*	-.712***	-.536***
	0.0156	0.0163	0.0251	0.0256	0.0218	0.031
pc_a	7.2e-04	-.0033*	-8.5e-04	-.0012	.0194***	.0098***
	0.0019	0.0017	0.0043	0.0044	0.0027	0.0021
C_a	.0274***	-.014***	.0079	.0103	.081***	.0836***
	0.0054	0.005	0.0115	0.0116	0.0107	0.0092
C_b	.0192***	-2.8e-04	-.0093	-.0082	-.0755***	-.0534***
	0.0033	0.0028	0.0084	0.0081	0.0035	0.0036
C_c	.0167***	-.0084**	.0028	.005	.13***	.102***
	0.0043	0.0039	0.01	0.0101	0.0103	0.0097
enp	.0283***	-.0171***	.0226*	.0224*	.15***	.139***
	0.0054	0.005	0.0124	0.0123	0.0107	0.0103
turnout	.0095	.0279*	-.0592**	-.0474*	-.551***	-.406***
	0.0165	0.0165	0.0251	0.0256	0.024	0.0298
enp	-.0416	-.0938**	-.115	-.111	-.299***	-.29***
	0.0468	0.0407	0.0806	0.0799	0.0364	0.0368
turnout	-.0554	-.0416	-.2**	-.184**	-1.42***	-1.34***
	0.0423	0.0354	0.082	0.0824	0.076	0.0848
C_a	.0701	.0769*	.139*	.135*	.421***	.405***
	0.0469	0.0407	0.0824	0.0812	0.0324	0.0332
Obs (1)	10377	10032	1774	1774	4392	4365

(1) Median of observations for all 9 regressions. 2 Log of years of education in population older thaObs (1)5 years. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.3.4

Coefficients of political competition variables. Dependent variable: Log-odds ratio of infant mortality, panel estimation fixed effects

Log C	BRAZIL		COLOMBIA		MEXICO	
	Basic	All	Basic	All	Basic	All
difrank2	.0191***	-.0073	.0147***	.0148***	.165***	.147***
	0.0074	0.0049	0.0054	0.0054	0.0124	0.0123
enp	-.346***	3.4e-04	-.0465***	-.0464***	-1.02***	-.899***
	0.0247	0.017	0.0173	0.0171	0.0562	0.0624
turnout	.169**	.0472	-.0962***	-.103***	2.69***	2.53***
	0.0708	0.0547	0.0144	0.0156	0.134	0.183
pc_a	-.0373***	-.0109*	-.0102***	-.0109***	-.0706***	-.0447***
	0.0088	0.0061	0.0029	0.0029	0.014	0.0138
C_a	-.316***	.0018	-.048***	-.0485***	-.427***	-.443***
	0.027	0.0166	0.0137	0.0138	0.053	0.0528
C_b	-.183***	-.0233**	.0024	.0019	.289***	.239***
	0.0178	0.0097	0.0132	0.0128	0.0194	0.022
C_c	-.181***	.0266**	-.0294**	-.0297**	-.558***	-.506***
	0.0246	0.0125	0.0125	0.0127	0.0532	0.0548
enp	-.344***	.0017	-.0405**	-.0398**	-.669***	-.675***
	0.0247	0.017	0.0173	0.0171	0.0595	0.0612
turnout	.0975	.0478	-.0835***	-.0896***	1.98***	1.91***
	0.0706	0.0547	0.0137	0.0145	0.144	0.181
enp	.0293	.298**	-.184***	-.18***	1.42***	1.68***
	0.176	0.128	0.041	0.0404	0.208	0.238
turnout	.444***	.316***	-.223***	-.227***	6.03***	7.03***
	0.157	0.114	0.0404	0.0417	0.43	0.545
C_a	-.375**	-.297**	.145***	.143***	-1.95***	-2.23***
	0.175	0.128	0.0385	0.0391	0.184	0.213
Obs (1)	10374	10030	1792	1792	4392	4365

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally

Table A3.5

Coefficients of political competition variables. Dependent variable: Log of student-teacher ratio in primary education, panel estimation fixed effects

Log C	BRAZIL		COLOMBIA		MEXICO	
	Basic	All	Basic	All	Basic	All
difrank2	.007***	.0015	.0123	.0039	.0163***	.0119***
	0.0016	0.0016	0.0093	0.0067	0.0028	0.0028
enp	-.038***	-.0075	-.0024	.0173	-.126***	-.0911***
	0.0054	0.0053	0.0332	0.033	0.0106	0.0112
turnout	-.104***	-.045**	-.0051	.0569	.403***	.298***
	0.0232	0.0223	0.109	0.102	0.0262	0.0319
pc_a	-.0071***	-.004*	.0017	.0012	-.01***	-.0029
	0.0024	0.0023	0.0095	0.0111	0.0029	0.0028
C_a	-.0427***	-.0104**	-.005	.0173	-.0135	-.018*
	0.0052	0.0052	0.032	0.0292	0.0101	0.0098
C_b	.0069**	.0134***	-.002	.0083	.0477***	.0344***
	0.0031	0.0029	0.0193	0.0182	0.004	0.0042
C_c	-.0386***	-.0134***	-.003	.021	-.0401***	-.028***
	0.0048	0.0047	0.032	0.0303	0.0101	0.0101
enp	-.0375***	-.0077	-.0024	.0167	-.0679***	-.0631***
	0.0054	0.0053	0.0334	0.0328	0.0116	0.0117
turnout	-.101***	-.0454**	-.0048	.0546	.33***	.239***
	0.0232	0.0223	0.109	0.104	0.0293	0.0339
enp	.211**	.108	.936	.961*	.0215	.0029
	0.0833	0.0771	0.573	0.568	0.0342	0.0342
turnout	.105	.0502	.795	.853*	.504***	.383***
	0.0772	0.0707	0.483	0.462	0.0693	0.0763
C_a	-.249***	-.116	-.938	-.944*	-.0838***	-.0624**
	0.0833	0.0772	0.567	0.556	0.0293	0.0295
Obs (1)	10915	10915	94	94	4392	4365

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1
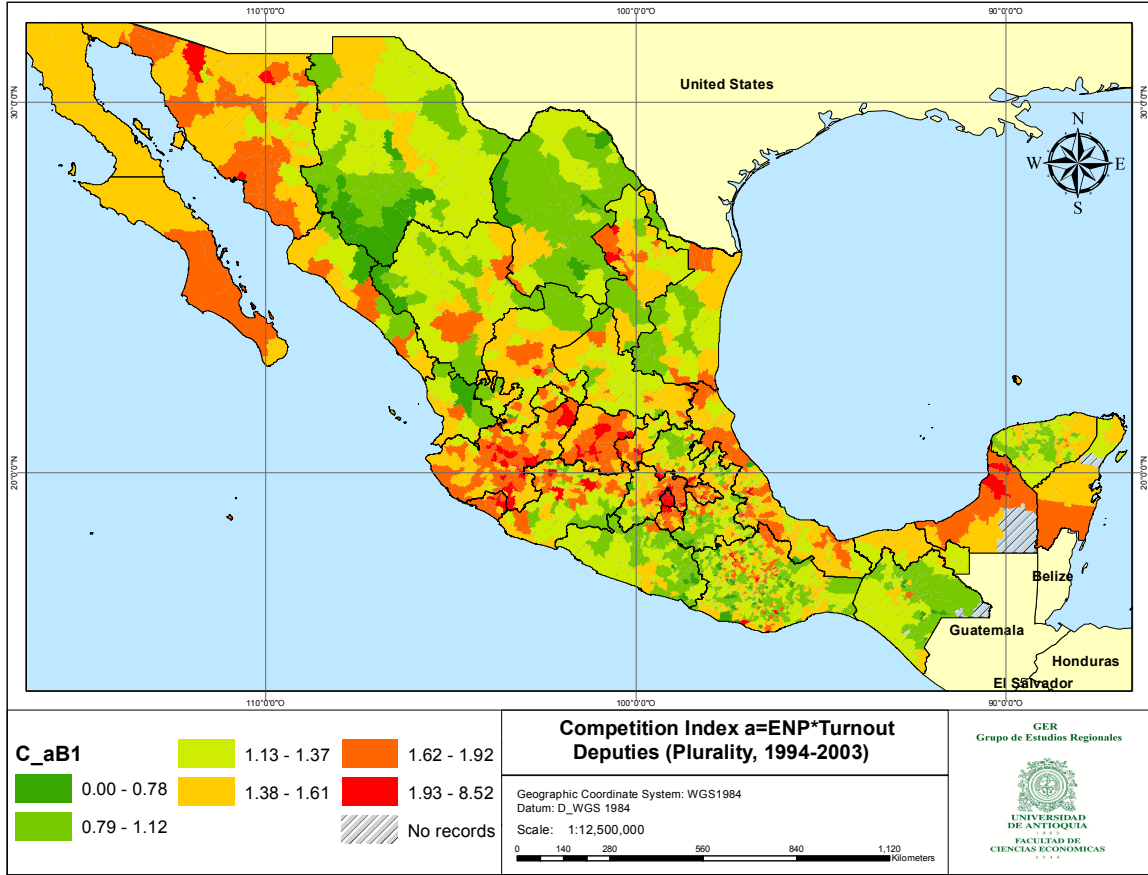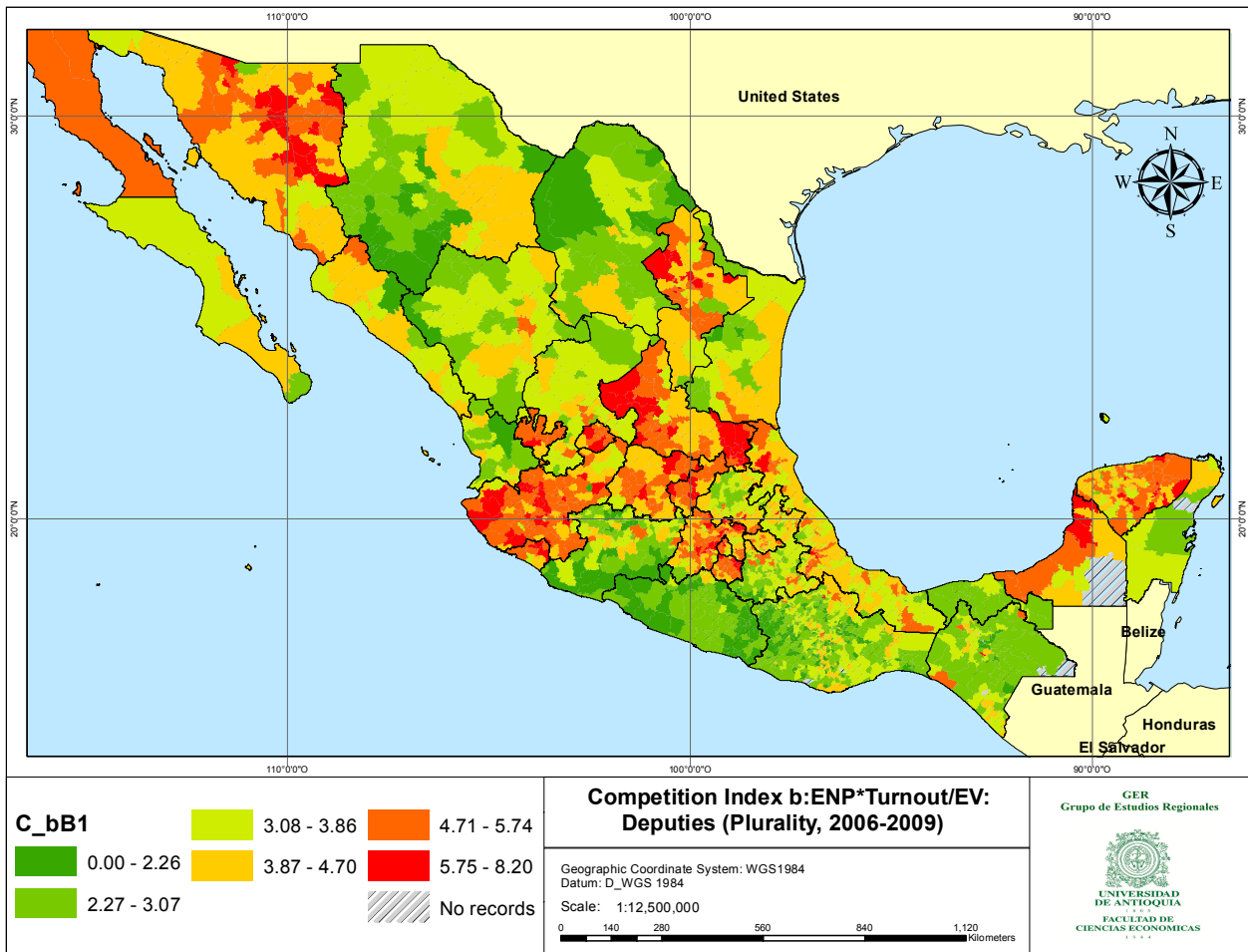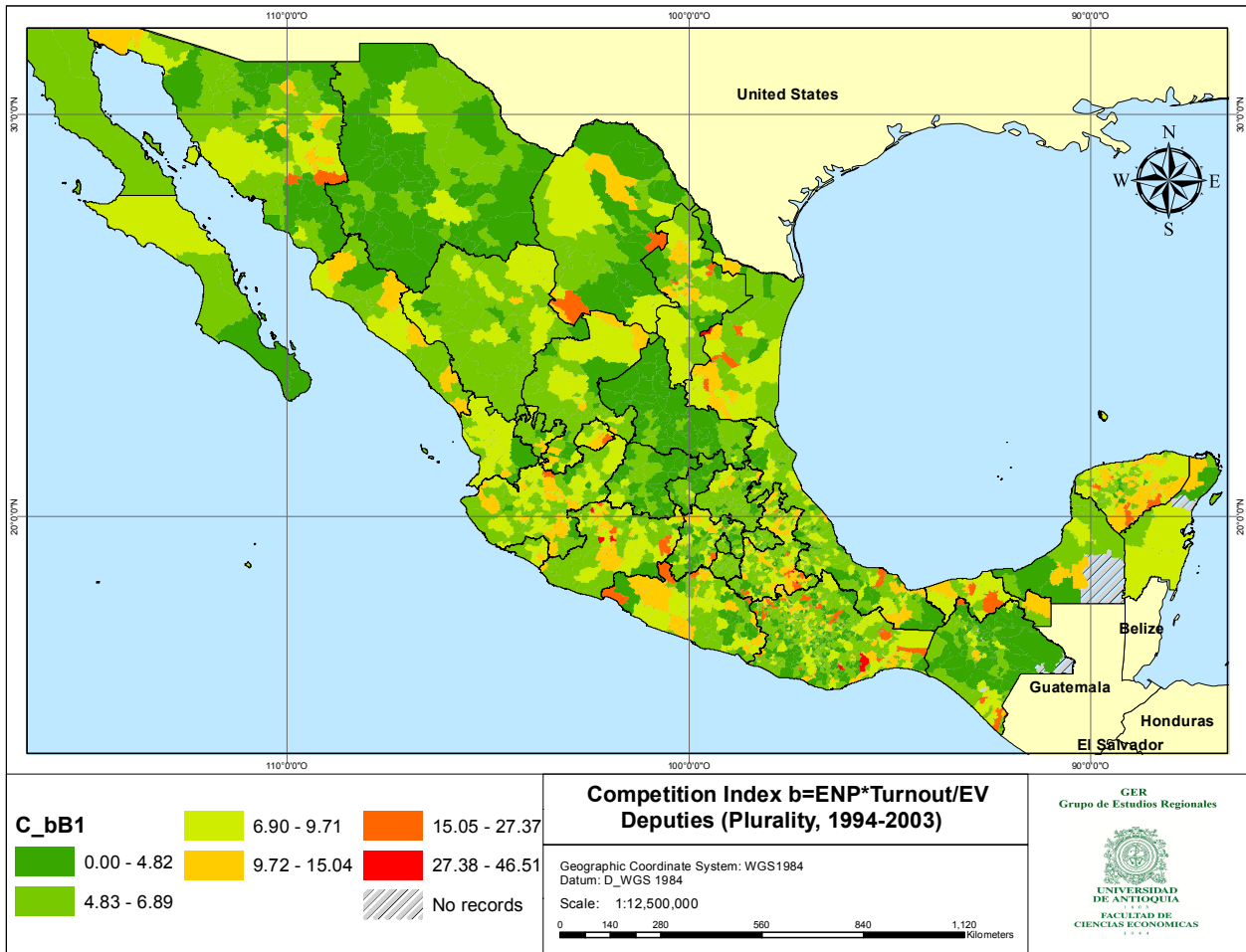
Table A.4.1

Coefficients of political competition variables. Dependent variable: Log-odds ratio of Sewage coverage, panel estimation (RE-PCSE)

Log C	COLOMBIA			MEXICO		
	Basic	All	H&T	Basic	All	H&T
difrank2	0.00667	0.0404	-0.0163	-0.274***	-0.203***	-0.316***
	(0.0313)	(0.0303)	(0.0209)	(0.0248)	(0.0236)	(0.0282)
enp	0.00366	-0.123	0.0634	1.145***	0.622***	2.299***
	(0.0791)	(0.0778)	(0.0552)	(0.109)	(0.113)	(0.124)
turnout	-0.0207	-0.231**	0.0686	-2.803***	-1.907***	-7.792***
	(0.113)	(0.114)	(0.0987)	(0.303)	(0.290)	(0.266)
pc_a	0.00809	-0.0107	0.0456*	0.0352*	-0.00783	0.214*
	(0.0365)	(0.0353)	(0.0267)	(0.0209)	(0.0201)	(0.121)
C_a	-0.0160	-0.184***	0.0741	0.643***	0.318***	0.396***
	(0.0682)	(0.0689)	(0.0473)	(0.0897)	(0.0886)	(0.124)
C_b	-0.0452	-0.102**	0.0157	-0.330***	-0.297***	-0.807***
	(0.0535)	(0.0522)	(0.0350)	(0.0447)	(0.0435)	(0.0357)
C_c	-0.0226	-0.182***	0.0585	0.755***	0.422***	1.029***
	(0.0644)	(0.0654)	(0.0452)	(0.0814)	(0.0824)	(0.124)
enp	0.00285	-0.143*		0.913***	0.447***	
	(0.0795)	(0.0786)		(0.115)	(0.119)	
turnout	-0.0205	-0.252**		-1.963***	-1.547***	
	(0.113)	(0.115)		(0.324)	(0.306)	
enp	0.845	0.346		-2.658***	-2.292***	
	(0.625)	(0.599)		(0.336)	(0.330)	
turnout	0.829	0.241		-10.34***	-8.168***	
	(0.641)	(0.615)		(0.741)	(0.732)	
C_a	-0.845	-0.489		3.377***	2.638***	
	(0.623)	(0.594)		(0.281)	(0.277)	
Obs (1)	1756	1756	1764	4388	4361	4411

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.4.2

Coefficients of political competition variables. Dependent variable: Log-odds ratio of water coverage, panel estimation (RE-PCSE)

Log C	BRAZIL			COLOMBIA			MEXICO		
	Basic	All	H&T	Basic	All	H&T	Basic	All	H&T
difrank2	-0.0739***	0.0127	-0.0956***	-0.0461	-0.0116	-0.0258	-0.144***	-0.0842***	-0.237***
	(0.0131)	(0.0101)	(0.0126)	(0.0291)	(0.0289)	(0.128)	(0.0292)	(0.0286)	(0.0238)
enp	0.807***	-0.0139	0.858***	0.106	-0.0183	0.133	0.908***	0.481***	1.271***
	(0.0369)	(0.0308)	(0.0400)	(0.0742)	(0.0748)	(0.340)	(0.122)	(0.124)	(0.110)
turnout	1.191***	0.359***	0.992***	0.392***	0.213**	-0.00529	-0.998***	-0.168	-4.098***
	(0.160)	(0.109)	(0.129)	(0.105)	(0.107)	(0.589)	(0.337)	(0.330)	(0.250)
pc_a	0.0797***	0.0239**	0.0876***	0.0178	0.000652	0.0547	0.0255	-0.00416	0.125***
	(0.0139)	(0.0115)	(0.0158)	(0.0272)	(0.0270)	(0.298)	(0.0284)	(0.0282)	(0.0221)
C_a	0.850***	0.0120	0.902***	0.221***	0.0792	0.106	0.793***	0.553***	0.315***
	(0.0369)	(0.0305)	(0.0388)	(0.0625)	(0.0648)	(0.292)	(0.101)	(0.0995)	(0.111)
C_b	0.560***	0.00990	0.443***	0.126**	0.0747	0.0401	-0.146***	-0.109**	-0.388***
	(0.0258)	(0.0213)	(0.0216)	(0.0508)	(0.0504)	(0.205)	(0.0497)	(0.0484)	(0.0341)
C_c	0.607***	0.00240	0.639***	0.200***	0.0640	0.0896	0.771***	0.526***	0.522***
	(0.0356)	(0.0272)	(0.0306)	(0.0592)	(0.0615)	(0.277)	(0.0952)	(0.0947)	(0.112)
enp	0.817***	-0.00499		0.122	-0.00115		0.894***	0.515***	
	(0.0371)	(0.0309)		(0.0745)	(0.0757)		(0.128)	(0.129)	
turnout	1.265***	0.358***		0.401***	0.213**		-0.125	0.305	
	(0.179)	(0.110)		(0.105)	(0.108)		(0.359)	(0.347)	
enp	0.336	0.311		-0.293	-0.682		-2.093***	-1.744***	
	(0.568)	(0.532)		(0.562)	(0.559)		(0.371)	(0.377)	
turnout	0.811	0.653		-0.0169	-0.474		-7.122***	-5.150***	
	(0.537)	(0.524)		(0.568)	(0.568)		(0.835)	(0.861)	
C_a	0.481	-0.316		0.416	0.682		2.813***	2.167***	
	(0.568)	(0.532)		(0.559)	(0.554)		(0.322)	(0.330)	
Obs (1)	10367	10024		1756	1756	1764	4368	4341	4392

1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.4.3

Coefficients of political competition variables. Dependent variable: Log of primary education gross rate, panel estimation (RE-PCSE)

Log C	BRAZIL			COLOMBIA			MEXICO (2)		
	Basic	All	H&T	Basic	All	H&T	Basic	All	H&T
difrank2	-0.00580***	0.000442	-0.00355***	-0.00105	-0.00154	-0.00539**	-0.163***	-0.0142***	-0.0434***
	(0.00109)	(0.000899)	(0.00123)	(0.00387)	(0.00384)	(0.00255)	(0.0117)	(0.00227)	(0.00250)
enp	0.0664***	0.0112***	0.0534***	0.0192	0.0236*	0.0199**	0.0449***	0.101***	0.287***
	(0.00297)	(0.00272)	(0.00401)	(0.0134)	(0.0133)	(0.00840)	(0.00354)	(0.00970)	(0.0103)
turnout	0.0228**	-0.0375***	0.0311**	-0.0902***	-0.0710***	-0.0559***	-0.0845**	0.120***	-0.817***
	(0.0108)	(0.0103)	(0.0126)	(0.0175)	(0.0187)	(0.0168)	(0.0369)	(0.0291)	(0.0230)
pc_a	0.00437***	0.00144	0.00100	-0.00432	-0.000777	0.000303	0.0257***	0.00229	0.0236***
	(0.00102)	(0.000925)	(0.00172)	(0.00580)	(0.00574)	(0.00401)	(0.00171)	(0.00175)	(0.00153)
C_a	0.0643***	0.00807***	0.0541***	-0.0164	-0.00603	0.00606	0.0770***	0.110***	0.0967***
	(0.00302)	(0.00271)	(0.00391)	(0.0108)	(0.0111)	(0.00759)	(0.00527)	(0.00815)	(0.0114)
C_b	0.0429***	0.00675***	0.0324***	-0.0110	-0.00584	-0.00593	-0.00286***	-0.00139	-0.0940***
	(0.00196)	(0.00170)	(0.00221)	(0.00884)	(0.00856)	(0.00547)	(0.000567)	(0.00417)	(0.00326)
C_c	0.0463***	0.00545**	0.0359***	-0.0172*	-0.00781	0.000796	0.0710***	0.0944***	0.161***
	(0.00279)	(0.00226)	(0.00314)	(0.0102)	(0.0105)	(0.00725)	(0.00567)	(0.00779)	(0.0111)
enp	0.0666***	0.0104***		0.0157	0.0200		0.0479***	0.127***	
	(0.00297)	(0.00273)		(0.0133)	(0.0133)		(0.00365)	(0.0100)	
turnout	0.0288**	-0.0344***		-0.0889***	-0.0687***		0.0571	0.234***	
	(0.0114)	(0.0104)		(0.0175)	(0.0187)		(0.0376)	(0.0298)	
enp	0.00557	0.00632		-0.103	-0.0849		-0.0449***	0.0169	
	(0.0367)	(0.0325)		(0.101)	(0.100)		(0.00925)	(0.0305)	
turnout	-0.0290	-0.0382		-0.208**	-0.174*		-0.664***	-0.0329	
	(0.0344)	(0.0306)		(0.103)	(0.103)		(0.0794)	(0.0716)	
C_a	0.0611*	0.00404		0.119	0.105		0.163***	0.106***	
	(0.0367)	(0.0325)		(0.101)	(0.100)		(0.0158)	(0.0275)	
Obs (1)	10377	10032	10833	1774	1774	1791	4365	4365	4415

(1) Median of observations for all 9 regressions. (2) Log of years of education in population older than 5 years. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.4.4

Coefficients of political competition variables. Dependent variable: Log-odds ratio of infant mortality, panel estimation (RE-PCSE)

	BRAZIL			COLOMBIA			MEXICO		
Log C	Basic	All	H&T	Basic	All	H&T	Basic	All	H&T
difrank2	0.0470***	0.000525	0.0308***	-0.0461	-0.0116	0.0167	0.147***	0	0.199***
	(0.00640)	(0.00354)	(0.00762)	(0.0291)	(0.0289)	(0.0176)	(0.00841)	0	(0.0187)
enp	-0.558***	-0.0828***	-0.488***	0.106	-0.0183	-0.0511	-0.678***	-0.466***	-1.171***
	(0.0166)	(0.0107)	(0.0238)	(0.0742)	(0.0748)	(0.0437)	(0.0352)	(0.0332)	(0.0668)
turnout	-0.259***	0.328***	0.179**	0.392***	0.213**	-0.0954	1.732***	1.356***	3.037***
	(0.0645)	(0.0388)	(0.0783)	(0.105)	(0.107)	(0.0896)	(0.0941)	(0.0863)	(0.158)
pc_a	-0.0460***	-0.0135***	-0.0452***	0.0178	0.000652	-0.0107*	-0.0429***	-0.0282***	-0.0848***
	(0.00595)	(0.00343)	(0.00763)	(0.0272)	(0.0270)	(0.00561)	(0.00747)	(0.00693)	(0.0103)
C_a	-0.545***	-0.0545***	-0.448***	0.221***	0.0792	-0.0512	-0.321***	-0.185***	-0.505***
	(0.0177)	(0.0106)	(0.0232)	(0.0625)	(0.0648)	(0.0372)	(0.0296)	(0.0265)	(0.0684)
C_b	0	-0.0417***	-0.253***	0.126**	0.0747	0.00263	0.213***	0.199***	0.345***
	(0.0123)	(0.00668)	(0.0135)	(0.0508)	(0.0504)	(0.0303)	(0.0137)	(0.0125)	(0.0297)
C_c	-0.389***	-0.0234***	-0.278***	0.200***	0.0640	-0.0318	-0.357***	-0.215***	-0.676***
	(0.0178)	(0.00875)	(0.0195)	(0.0592)	(0.0615)	(0.0390)	(0.0278)	(0.0251)	(0.0634)
enp	-0.561***	-0.0751***		0.122	-0.00115		-0.530***	-0.345***	4415
	(0.0166)	(0.0107)		(0.0745)	(0.0757)		(0.0367)	(0.0341)	
turnout	-0.310***	0.306***		0.401***	0.213**		1.250***	1.067***	
	(0.0742)	(0.0388)		(0.105)	(0.108)		(0.0985)	(0.0896)	
enp	-0.208	-0.265*		-0.293	-0.682		1.209***	1.062***	
	(0.198)	(0.149)		(0.562)	(0.559)		(0.103)	(0.0985)	
turnout	0.0237	0.129		-0.0169	-0.474		5.329***	4.470***	
	(0.180)	(0.144)		(0.568)	(0.568)		(0.247)	(0.240)	
C_a	-0.353*	0.190		0.416	0.682		-1.645***	-1.356***	
	(0.198)	(0.149)		(0.559)	(0.554)		(0.0912)	(0.0880)	
Obs (1)	10374	10030	10829	1756	1756	1814	4392	4365	4415

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally

Table A.4.5

Coefficients of political competition variables. Dependent variable: Log of student-teacher ratio in primary education, panel estimation (RE-

	BRAZIL			COLOMBIA			MEXICO		
Log C	Basic	All	H&T	Basic	All	H&T	Basic	All	H&T
difrank2	0.0103***	-0.00112	0.00889***	0.0128	0.0166**	0.0174**	-0.00147		0.0192***
	(0.00197)	(0.00189)	(0.00163)	(0.00792)	(0.00780)	(0.00766)	(0.00332)		(0.00362)
enp	-0.0303***	0.0243***	-0.0495***	0.00806	-0.00273	-0.0328	0.0175		-0.145***
	(0.00538)	(0.00529)	(0.00521)	(0.0287)	(0.0266)	(0.0316)	(0.0135)		(0.0161)
turnout	-0.296***	-0.141***	-0.118***	-0.0595	-0.0762	0.00684	0.0873**		0.469***
	(0.0223)	(0.0222)	(0.0212)	(0.0619)	(0.0581)	(0.112)	(0.0362)		(0.0383)
pc_a	0.00280	0.00718***	-0.00746***	0.0168**	0.0155**	-0.00171	0.00285		-0.0120
	(0.00208)	(0.00200)	(0.00211)	(0.00661)	(0.00765)	(0.0113)	(0.00286)		(0.00860)
C_a	-0.0464***	0.0141***	-0.0538***	-0.00465	-0.0163	-0.0331	0.0244**		-0.0167
	(0.00521)	(0.00526)	(0.00507)	(0.0298)	(0.0273)	(0.0322)	(0.0112)		(0.0149)
C_b	-0.0255***	0.00741**	0.00475	0.000333	-0.00331	-0.0166	0.0109**		0.0577***
	(0.00355)	(0.00353)	(0.00296)	(0.0239)	(0.0226)	(0.0257)	(0.00544)		(0.00506)
C_c	-0.0418***	0.00783	-0.0477***	-0.00666	-0.0180	-0.0370	0.0205**		-0.0541***
	(0.00488)	(0.00483)	(0.00470)	(0.0295)	(0.0275)	(0.0320)	(0.0103)		(0.0148)
enp	-0.0274***	0.0225***		0.00580	-0.00802		0.0309**		
	(0.00532)	(0.00530)		(0.0296)	(0.0274)		(0.0143)		
turnout	-0.292***	-0.137***		-0.0584	-0.0792		0.114***		
	(0.0223)	(0.0222)		(0.0636)	(0.0603)		(0.0391)		
enp	0.464***	0.299***		0.483	0.415		0.0894**		
	(0.0858)	(0.0836)		(0.457)	(0.497)		(0.0352)		
turnout	0.152*	0.111		0.400	0.322		0.251***		
	(0.0818)	(0.0794)		(0.434)	(0.462)		(0.0843)		
C_a	-0.491***	-0.277***		-0.477	-0.423		-0.0553*		
	(0.0857)	(0.0837)		(0.456)	(0.495)		(0.0304)		
Obs (1)	10915	10915	11045	94	94	94	4392		

(1) Median of observations for all 9 regressions. Coefficients of fiscal and control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.5.1

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Sewage coverage, panel estimation fixed effects

Political competition variable	Log F	COLOMBIA Basic	COLOMBIA All	MEXICO Basic	MEXICO All
difrank2	A_P	-.0476*	1.5e-04	.949***	.459***
		0.0267	0.0467	0.041	0.0442
	A5_A1	-.235	-.239	.452	-.759***
		0.201	0.202	0.299	0.262
	A1112_A11	-.0325	-.0421	-.667***	-.393***
		0.0497	0.0502	0.0978	0.09
enp	A_P	-.0474*	.0024	.803***	.439***
		0.0266	0.046	0.0395	0.042
	A5_A1	-.233	-.235	.192	-.803***
		0.201	0.202	0.291	0.262
	A1112_A11	-.0295	-.0388	-.504***	-.312***
		0.0495	0.0501	0.0954	0.089
turnout	A_P	-.0502*	.0027	.588***	.428***
		0.0261	0.046	0.0353	0.039
	A5_A1	-.214	-.209	-.976***	-1.28***
		0.2	0.201	0.263	0.257
	A1112_A11	-.0345	-.0448	-.405***	-.323***
		0.0503	0.051	0.0858	0.0834
pc_a	A_P	-.103**	-.0407	.781***	.263***
		0.0462	0.0782	0.0712	0.0633
	A5_A1	-.0959	-.159	.0386	-.995***
		0.275	0.277	0.326	0.277
	A1112_A11	-.0255	-.075	-.489***	-.146
		0.105	0.102	0.179	0.141
C_a	A_P	-.0547**	8.3e-04	1.04***	.485***
		0.0275	0.0464	0.0411	0.0455
	A5_A1	-.23	-.229	.33	-.862***
		0.2	0.201	0.305	0.265
	A1112_A11	-.0315	-.0421	-.767***	-.434***
		0.0495	0.0502	0.0995	0.0908
C_b	A_P	-.0417	.0052	.798***	.428***
		0.0255	0.0451	0.0396	0.0425
	A5_A1	-.224	-.224	-.44	-1.19***
		0.2	0.202	0.29	0.262
	A1112_A11	-.0323	-.0414	-.619***	-.403***
		0.0502	0.0507	0.0927	0.0859
C_c	A_P	-.0529*	.0011	.958***	.461***
		0.0279	0.0464	0.0418	0.0447
	A5_A1	-.228	-.228	.328	-.866***
		0.2	0.201	0.305	0.266
	A1112_A11	-.0322	-.0429	-.726***	-.418***
		0.0496	0.0503	0.099	0.09
enp, turnout	A_P	-.0557**	9.0e-04	.54***	.403***
		0.0277	0.0464	0.0355	0.0386
	A5_A1	-.222	-.219	-.85***	-1.16***
		0.2	0.201	0.257	0.251
	A1112_A11	-.0335	-.0445	-.332***	-.258***
		0.0499	0.0507	0.0873	0.0851
enp, turnout, C_a	A_P	-.0526*	.0012	.316***	.257***
		0.0277	0.0463	0.0415	0.0417
	A5_A1	-.226	-.224	-1.01***	-1.19***
		0.199	0.201	0.242	0.24
	A1112_A11	-.0315	-.0421	-.243***	-.194**
		0.0499	0.0507	0.0838	0.0822
Obs (1)		1756	1756	4388	4361

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.5.2

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Water coverage, panel estimation fixed effects

Political competition variable	Log F	BRAZIL Basic	BRAZIL All	COLOMBIA Basic	COLOMBIA All	MEXICO Basic	MEXICO All
difrank2	A_P	1.86***	-.102	-.0988***	-.0071	.455***	.199***
		0.148	0.087	0.0305	0.0499	0.0339	0.0387
	A5_A1	-.513**	-.919***	-.447*	-.44	.167	-.516**
		0.251	0.199	0.271	0.273	0.241	0.236
	A1112_A11	-.114***	-.0425***	-.001	-.0179	-.332***	-.168*
		0.0207	0.0162	0.0586	0.0585	0.0896	0.0891
enp	A_P	1.69***	-.106	-.103***	-.0047	.398***	.204***
		0.144	0.087	0.03	0.0493	0.0336	0.0381
	A5_A1	-.538**	-.917***	-.45*	-.44	-.0285	-.609***
		0.246	0.202	0.271	0.273	0.235	0.234
	A1112_A11	-.113***	-.0428***	.0045	-.0126	-.266***	-.144
		0.0205	0.0162	0.0584	0.0583	0.09	0.0896
turnout	A_P	1.87***	-.114	-.0894***	-9.4e-04	.295***	.207***
		0.145	0.0885	0.0305	0.049	0.0356	0.0388
	A5_A1	-.479**	-.908***	-.429	-.412	-.641***	-.853***
		0.253	0.198	0.271	0.274	0.236	0.235
	A1112_A11	-.113***	-.0404**	.0018	-.015	-.224**	-.161*
		0.0206	0.0161	0.0594	0.0596	0.0874	0.0877
pc_a	A_P	1.78***	-.252	-.152***	-.0265	.391***	.0673
		0.139	0.173	0.054	0.0897	0.0616	0.0601
	A5_A1	-.361	-.587**	-.0936	-.176	-.311	-.961***
		0.305	0.28	0.397	0.399	0.328	0.336
	A1112_A11	-.071	-.0374	.0016	-.0871	.116	.339**
		0.0451	0.0414	0.121	0.124	0.158	0.149
C_a	A_P	1.67***	-.107	-.107***	-.0056	.525***	.224***
		0.143	0.0866	0.0314	0.0496	0.0341	0.0386
	A5_A1	-.543**	-.928***	-.438	-.424	.0845	-.613***
		0.247	0.202	0.271	0.273	0.245	0.238
	A1112_A11	-.111***	-.0429***	8.3e-04	-.0175	-.412***	-.207***
		0.0204	0.0162	0.0585	0.0585	0.091	0.0899
C_b	A_P	1.69***	-.105	-.0901***	.0019	.419***	.21***
		0.145	0.0877	0.0287	0.0486	0.0351	0.039
	A5_A1	-.588**	-.916***	-.429	-.415	-.301	-.777***
		0.25	0.204	0.271	0.274	0.24	0.236
	A1112_A11	-.116***	-.0449***	-.0032	-.0201	-.352***	-.208**
		0.0205	0.0163	0.0594	0.0594	0.0883	0.0883
C_c	A_P	1.73***	-.0901	-.106***	-.0055	.493***	.222***
		0.148	0.0859	0.0318	0.0497	0.0348	0.0386
	A5_A1	-.505**	-.893***	-.436	-.422	.0517	-.645***
		0.249	0.201	0.271	0.273	0.242	0.237
	A1112_A11	-.113***	-.0441***	-4.1e-04	-.019	-.399***	-.211**
		0.0205	0.0162	0.0587	0.0587	0.091	0.0899
enp, turnout	A_P	1.68***	-.114	-.103***	-.0052	.264***	.188***
		0.142	0.0875	0.0319	0.0495	0.035	0.0381
	A5_A1	-.531**	-.92***	-.449*	-.436	-.563**	-.776***
		0.247	0.199	0.271	0.274	0.234	0.234
	A1112_A11	-.111***	-.0411**	.0043	-.0143	-.18*	-.121
		0.0204	0.0161	0.0589	0.059	0.0877	0.0882
enp, turnout, C_a	A_P	1.68***	-.113	-.1***	-.0049	.112***	.0952**
		0.142	0.0875	0.0319	0.0495	0.0366	0.0386
	A5_A1	-.536**	-.929***	-.453*	-.439	-.68***	-.804***
		0.248	0.199	0.27	0.273	0.222	0.225
	A1112_A11	-.111***	-.0407**	.0062	-.0122	-.122	-.0807
		0.0204	0.0161	0.0588	0.059	0.0864	0.087
Obs (1)		10367	10024	1756	1756	4368	4341

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.5.3

Coefficients of fiscal variables. Dependent variable: Log of Primary education gross rate , panel estimation fixed effects

Political competition variable	Log F	BRAZIL		COLOMBIA		MEXICO (2)	
		Basic	All	Basic	All	Basic	All
difrank2	A_P	.18***	.0039	-.0047	-.0021	.112***	.0603***
		0.0149	0.0088	0.0073	0.0085	0.0041	0.0043
	A5_A1	.052**	.026	-5.4e-04	.0081	.117***	.0069
		0.0248	0.017	0.0311	0.0325	0.0264	0.0226
	A1112_A11	-.0103***	-.0064***	-.0354***	-.0371***	-.0331***	-.0109
		0.0025	0.0021	0.0125	0.0125	0.0084	0.0075
enp	A_P	.172***	.0043	-.0051	-.0025	.0952***	.059***
		0.015	0.0089	0.0072	0.0085	0.0038	0.004
	A5_A1	.0499**	.0257	-.0017	.0065	.0786***	-.006
		0.0242	0.0172	0.0308	0.0321	0.0243	0.0215
	A1112_A11	-.0103***	-.0063***	-.0354***	-.0372***	-.0147*	-.0011
		0.0025	0.0021	0.0124	0.0124	0.0078	0.0071
turnout	A_P	.18***	.0041	.0018	.0036	.0809***	.0613***
		0.0149	0.0088	0.0071	0.0082	0.0036	0.0039
	A5_A1	.0524**	.0244	-.0026	.0059	-.038*	-.0608***
		0.0248	0.0171	0.0313	0.0329	0.0227	0.0218
	A1112_A11	-.0103***	-.0063***	-.0335***	-.0355***	-.0129*	-.0089
		0.0025	0.0021	0.0125	0.0125	0.0075	0.0072
pc_a	A_P	.148***	-.0063	.0029	.0115	.0891***	.0426***
		0.0133	0.0149	0.0108	0.0108	0.0068	0.005
	A5_A1	.039	.0149	-.0022	-.0073	.0411	-.0518**
		0.0288	0.0238	0.0371	0.0372	0.032	0.0242
	A1112_A11	-.0139**	-.0124***	-.0244	-.0225	-.0038	.0274***
		0.0055	0.0047	0.023	0.0226	0.0127	0.0101
C_a	A_P	.172***	.0044	-.0029	-9.7e-04	.121***	.0624***
		0.015	0.0088	0.0073	0.0086	0.0043	0.0044
	A5_A1	.05**	.0256	.002	.0102	.112***	-.0029
		0.0242	0.0172	0.031	0.0324	0.0274	0.0227
	A1112_A11	-.0102***	-.0063***	-.0356***	-.0374***	-.0448***	-.0152*
		0.0024	0.0021	0.0125	0.0125	0.0089	0.0078
C_b	A_P	.171***	.0053	-.0023	4.1e-04	.0987***	.0592***
		0.0154	0.009	0.0073	0.0084	0.0039	0.004
	A5_A1	.0475*	.0278	.0024	.0105	.0066	-.0589**
		0.0245	0.0178	0.0311	0.0325	0.0261	0.0229
	A1112_A11	-.0106***	-.0066***	-.0351***	-.0369***	-.0326***	-.016**
		0.0025	0.0021	0.0125	0.0125	0.0082	0.0074
C_c	A_P	.177***	.0048	-.0018	9.2e-05	.111***	.0598***
		0.0155	0.0091	0.0072	0.0084	0.0042	0.0043
	A5_A1	.0523**	.0274	.0026	.0107	.099***	-.012
		0.0252	0.0178	0.031	0.0325	0.0266	0.0225
	A1112_A11	-.0104***	-.0066***	-.0355***	-.0373***	-.041***	-.0149*
		0.0025	0.0021	0.0125	0.0125	0.0087	0.0077
enp, turnout	A_P	.172***	.0041	-.0022	-2.5e-04	.072***	.056***
		0.015	0.0088	0.0072	0.0085	0.0034	0.0037
	A5_A1	.05**	.0256	-.0076	7.2e-04	-.0144	-.0376*
		0.0242	0.0172	0.0309	0.0323	0.0213	0.0206
	A1112_A11	-.0102***	-.0063***	-.0336***	-.0356***	2.7e-04	.0035
		0.0025	0.0021	0.0123	0.0124	0.0071	0.0068
enp, turnout, C_a	A_P	.172***	.0043	-.0017	4.5e-04	.0425***	.0354***
		0.015	0.0088	0.0072	0.0085	0.0038	0.0036
	A5_A1	.0494**	.0248	-.0083	-2.3e-04	-.0357**	-.0416**
		0.0242	0.0172	0.0308	0.0323	0.0177	0.0177
	A1112_A11	-.0102***	-.0062***	-.0329***	-.0349***	.012*	.0126**
		0.0024	0.0021	0.0123	0.0123	0.0065	0.0064
Obs (1)		10377	10032	1774	1774	4392	4365

(1) Median of observations for all 9 regressions. (2) Log of years of education in population older than 15 years. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.5.4

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Infant Mortality , panel estimation fixed effects

Political competition variable	Log F	BRAZIL		COLOMBIA		MEXICO	
		Basic	All	Basic	All	Basic	All
difrank2	A_P	-1.53***	-.14***	-.0654***	-.0633***	-.431***	-.307***
		0.109	0.027	0.0054	0.0066	0.0197	0.0241
	A5_A1	-.354**	-.142**	-.0564***	-.0612***	-.14	.151
		0.153	0.0674	0.0174	0.0204	0.141	0.14
	A1112_A11	.0642***	.0209***	-1.4e-04	-5.0e-04	.336***	.272***
		0.0112	0.0068	0.0093	0.0094	0.0481	0.0483
enp	A_P	-1.43***	-.14***	-.0641***	-.0624***	-.37***	-.303***
		0.107	0.0272	0.0057	0.0069	0.0197	0.0236
	A5_A1	-.329**	-.137**	-.0559***	-.0604***	.0314	.223
		0.144	0.0674	0.0171	0.0199	0.135	0.137
	A1112_A11	.0633***	.0209***	-.0023	-.0026	.268***	.228***
		0.011	0.0068	0.0094	0.0094	0.0465	0.0469
turnout	A_P	-1.53***	-.141***	-.0556***	-.0537***	-.326***	-.313***
		0.109	0.0273	0.0052	0.0061	0.0192	0.0232
	A5_A1	-.358**	-.137**	-.0718***	-.0783***	.47***	.486***
		0.151	0.0671	0.019	0.0224	0.138	0.139
	A1112_A11	.0644***	.021***	8.0e-04	9.3e-04	.274***	.268***
		0.0112	0.0068	0.0096	0.0096	0.0465	0.0471
pc_a	A_P	-1.41***	-.207***	-.0768***	-.0745***	-.342***	-.215***
		0.0582	0.0474	0.0061	0.007	0.0327	0.0344
	A5_A1	-.229	-.0851	-.018	-.0165	.166	.415**
		0.176	0.0919	0.0174	0.0181	0.165	0.162
	A1112_A11	.0605***	.031***	-.0024	-3.6e-04	.0851	6.9e-04
		0.02	0.012	0.0185	0.0187	0.0869	0.0852
C_a	A_P	-1.44***	-.14***	-.057***	-.0555***	-.471***	-.316***
		0.107	0.0272	0.0068	0.008	0.0201	0.0249
	A5_A1	-.332**	-.137**	-.059***	-.0641***	-.132	.199
		0.146	0.0673	0.0179	0.021	0.146	0.142
	A1112_A11	.0627***	.0209***	-.0014	-.0016	.385***	.293***
		0.011	0.0068	0.0092	0.0092	0.0491	0.0488
C_b	A_P	-1.44***	-.158***	-.0718***	-.0698***	-.393***	-.307***
		0.11	0.0283	0.0039	0.0046	0.0197	0.0233
	A5_A1	-.281*	-.12*	-.0653***	-.0699***	.303***	.466***
		0.146	0.0676	0.0192	0.0218	0.147	0.144
	A1112_A11	.0644***	.0212***	-.0019	-.0022	.347***	.303***
		0.011	0.0068	0.0104	0.0104	0.0481	0.0483
C_c	A_P	-1.49***	-.156***	-.0658***	-.0639***	-.431***	-.305***
		0.112	0.0279	0.0055	0.0067	0.0205	0.0246
	A5_A1	-.326**	-.123*	-.063***	-.0681***	-.0543	.251*
		0.152	0.0678	0.0187	0.0219	0.144	0.141
	A1112_A11	.0626***	.0204***	-6.8e-04	-9.9e-04	.374***	.294***
		0.011	0.0068	0.0093	0.0093	0.0484	0.0483
enp, turnout	A_P	-1.43***	-.141***	-.0512***	-.0495***	-.287***	-.289***
		0.108	0.0273	0.0062	0.0073	0.0194	0.0228
	A5_A1	-.328**	-.137**	-.0627***	-.0689***	.365***	.372***
		0.144	0.0671	0.0165	0.0194	0.133	0.134
	A1112_A11	.0634***	.021***	-8.6e-05	7.6e-04	.214***	.207***
		0.011	0.0068	0.0094	0.0095	0.0453	0.0459
enp, turnout, C	A_P	-1.43***	-.141***	-.0492***	-.0476***	-.15***	-.175***
		0.108	0.0272	0.0061	0.0073	0.0227	0.0239
	A5_A1	-.325**	-.133**	-.0622***	-.0681***	.463***	.394***
		0.144	0.0672	0.0164	0.0194	0.122	0.121
	A1112_A11	.0633***	.0209***	7.7e-04	8.7e-04	.16***	.157***
		0.011	0.0068	0.0095	0.0095	0.0428	0.0433
Obs (1)		10374	10030	1792	1792	4392	4365

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.5.5

Coefficients of fiscal variables. Dependent variable: Log of Student-teacher ratio in primary education, panel estimation fixed effects

Political competition variable	Log F	BRAZIL		COLOMBIA		MEXICO	
		Basic	All	Basic	All	Basic	All
difrank2	A_P	-.0814***	.0357***	.0058	.0068	-.0572***	-.0274***
		0.0101	0.0112	0.0382	0.0292	0.0039	0.0041
	A5_A1	.0185	.029	-.13	-.0966	-.254***	-.187***
		0.0227	0.02	0.0902	0.0724	0.0349	0.0339
	A1112_A11	.0205***	.0113***	-.0057	-.0337	.0612***	.0467***
		0.0022	0.002	0.0602	0.0507	0.0107	0.0104
enp	A_P	-.0755***	.0356***	.0031	.0064	-.0478***	-.0261***
		0.0099	0.0111	0.0381	0.0286	0.0037	0.004
	A5_A1	.0186	.0289	-.158	-.117	-.236***	-.183***
		0.0221	0.0199	0.0992	0.0757	0.0349	0.0341
	A1112_A11	.0197***	.0113***	-5.4e-04	-.0273	.0508***	.0411***
		0.0022	0.002	0.0611	0.0514	0.0103	0.0102
turnout	A_P	-.076***	.0377***	.0033	.0035	-.0379***	-.0267***
		0.01	0.0112	0.0407	0.0308	0.0037	0.004
	A5_A1	.0193	.0295	-.16	-.0941	-.169***	-.154***
		0.0228	0.02	0.112	0.0755	0.0332	0.033
	A1112_A11	.0208***	.0114***	.0011	-.0437	.0476***	.0439***
		0.0022	0.002	0.0746	0.0614	0.0099	0.01
pc_a	A_P	-.0701***	.0268*	-.0302	.0082	-.0471***	-.0151**
		0.012	0.015	0.0468	0.0512	0.0067	0.007
	A5_A1	-.0123	-.0074	-.101	-.127	-.261***	-.2***
		0.0287	0.0271	0.121	0.113	0.0553	0.0541
	A1112_A11	.0148***	.0098***	-.0636	-.0727	.116***	.0968***
		0.0044	0.0041	0.0661	0.0666	0.0278	0.0272
C_a	A_P	-.0726***	.0354***	.0033	.0058	-.0633***	-.0295***
		0.0098	0.011	0.0386	0.0288	0.0038	0.0042
	A5_A1	.0192	.029	-.156	-.114	-.245***	-.179***
		0.022	0.0199	0.0965	0.0713	0.0356	0.0343
	A1112_A11	.0195***	.0113***	-7.7e-04	-.0301	.0682***	.05***
		0.0022	0.002	0.061	0.051	0.0108	0.0105
C_b	A_P	-.0846***	.0336***	.0024	.0094	-.0461***	-.0247***
		0.0105	0.0108	0.0387	0.0295	0.0038	0.004
	A5_A1	.018	.0289	-.158	-.109	-.189***	-.152***
		0.0227	0.0198	0.103	0.0714	0.0347	0.0336
	A1112_A11	.0207***	.0109***	-2.9e-04	-.0307	.0577***	.0474***
		0.0022	0.002	0.0635	0.0507	0.0106	0.0104
C_c	A_P	-.0746***	.035***	.0032	.0057	-.0591***	-.0284***
		0.0099	0.011	0.0386	0.0287	0.0039	0.0042
	A5_A1	.0175	.0284	-.157	-.118	-.244***	-.178***
		0.0221	0.0199	0.0977	0.0724	0.0356	0.0342
	A1112_A11	.0197***	.0112***	5.2e-05	-.0321	.0662***	.0494***
		0.0022	0.002	0.0628	0.0518	0.0108	0.0105
enp, turnout	A_P	-.07***	.0367***	.0033	.0037	-.0339***	-.0243***
		0.0097	0.0111	0.041	0.0308	0.0037	0.004
	A5_A1	.0196	.0293	-.158	-.107	-.18***	-.164***
		0.0222	0.02	0.11	0.0825	0.0336	0.0334
	A1112_A11	.0196***	.0114***	2.6e-04	-.0378	.0418***	.0384***
		0.0022	0.002	0.0725	0.0629	0.0098	0.0099
enp, turnout, C	A_P	-.0687***	.0363***	-.003	-.0017	-.028***	-.0212***
		0.0096	0.0111	0.0424	0.0313	0.0043	0.0042
	A5_A1	.0209	.0299	-.165	-.116	-.176***	-.164***
		0.0221	0.02	0.111	0.0814	0.0338	0.0336
	A1112_A11	.0195***	.0114***	-.0041	-.0396	.0395***	.037***
		0.0022	0.002	0.0705	0.0607	0.0099	0.01
Obs (1)		10915	10915	94	94	4392	4365

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports Huber-White standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.6.1

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Sewage coverage, panel estimation (RE-PCSE)

Political competition variable	Log F	COLOMBIA		MEXICO	
		Basic	All	Basic	All
difrank2	A_P	0.0581	-0.343***	0.224***	0.131***
		(0.0447)	(0.0630)	(0.0345)	(0.0333)
	A5_A1	-1.171***	-0.858***	-0.510***	-0.359**
		(0.162)	(0.164)	(0.165)	(0.155)
	A1112_A11	-0.125**	-0.107*	-0.492***	-0.439***
		(0.0584)	(0.0557)	(0.0926)	(0.0895)
enp	A_P	0.0564	-0.347***	0.226***	0.143***
		(0.0445)	(0.0630)	(0.0346)	(0.0335)
	A5_A1	-1.171***	-0.862***	-0.581***	-0.404**
		(0.162)	(0.164)	(0.166)	(0.158)
	A1112_A11	-0.125**	-0.108*	-0.489***	-0.461***
		(0.0584)	(0.0557)	(0.0942)	(0.0910)
turnout	A_P	0.0575	-0.352***	0.164***	0.0920***
		(0.0451)	(0.0629)	(0.0368)	(0.0351)
	A5_A1	-1.175***	-0.890***	-0.804***	-0.539***
		(0.163)	(0.165)	(0.177)	(0.159)
	A1112_A11	-0.124**	-0.0928*	-0.494***	-0.446***
		(0.0590)	(0.0563)	(0.0945)	(0.0916)
pc_a	A_P	0.0484	-0.448***	0.310***	0.211***
		(0.0612)	(0.0894)	(0.0455)	(0.0444)
	A5_A1	-0.899***	-0.579***	-0.179	-0.207
		(0.190)	(0.192)	(0.191)	(0.171)
	A1112_A11	-0.157*	-0.127*	-0.531***	-0.308**
		(0.0804)	(0.0766)	(0.127)	(0.123)
C_a	A_P	0.0584	-0.352***	0.261***	0.158***
		(0.0451)	(0.0629)	(0.0341)	(0.0332)
	A5_A1	-1.175***	-0.886***	-0.391**	-0.305*
		(0.162)	(0.164)	(0.163)	(0.156)
	A1112_A11	-0.124**	-0.0945*	-0.542***	-0.489***
		(0.0587)	(0.0559)	(0.0930)	(0.0900)
C_b	A_P	0.0563	-0.356***	0.185***	0.0814**
		(0.0444)	(0.0627)	(0.0361)	(0.0349)
	A5_A1	-1.183***	-0.883***	-0.715***	-0.544***
		(0.164)	(0.165)	(0.173)	(0.157)
	A1112_A11	-0.121**	-0.0974*	-0.539***	-0.464***
		(0.0587)	(0.0560)	(0.0944)	(0.0910)
C_c	A_P	0.0593	-0.352***	0.236***	0.145***
		(0.0451)	(0.0629)	(0.0341)	(0.0332)
	A5_A1	-1.176***	-0.885***	-0.501***	-0.372**
		(0.162)	(0.164)	(0.164)	(0.157)
	A1112_A11	-0.124**	-0.0940*	-0.522***	-0.478***
		(0.0586)	(0.0559)	(0.0926)	(0.0899)
enp, turnout	A_P	0.0573	-0.354***	0.162***	0.0931***
		(0.0452)	(0.0629)	(0.0368)	(0.0352)
	A5_A1	-1.174***	-0.892***	-0.819***	-0.571***
		(0.163)	(0.164)	(0.172)	(0.159)
	A1112_A11	-0.124**	-0.0903*	-0.447***	-0.427***
		(0.0590)	(0.0563)	(0.0949)	(0.0920)
enp, turnout, C_a	A_P	0.0548	-0.353***	-0.0603	-0.0801**
		(0.0453)	(0.0630)	(0.0400)	(0.0384)
	A5_A1	-1.183***	-0.898***	-1.330***	-1.006***
		(0.163)	(0.164)	(0.177)	(0.161)
	A1112_A11	-0.123**	-0.0900	-0.273***	-0.308***
		(0.0591)	(0.0563)	(0.0929)	(0.0906)
Obs (1)		1756	1756	4388	4361

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.6.2

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Water coverage, panel estimation (RE-PCSE)

Political competition variable	Log F	BRAZIL		COLOMBIA		MEXICO	
		Basic	All	Basic	All	Basic	All
difrank2	A_P	1.145***	-0.0750*	0.0207	-0.286***	0.0685*	0.00713
		(0.0516)	(0.0406)	(0.0400)	(0.0571)	(0.0403)	(0.0407)
	A5_A1	0.459***	-0.255**	-1.384***	-1.139***	-0.922***	-0.802***
		(0.160)	(0.120)	(0.159)	(0.159)	(0.203)	(0.196)
	A1112_A11	0.0253**	0.00597	0.116**	0.136***	0.116	0.196*
		(0.0124)	(0.00879)	(0.0473)	(0.0454)	(0.113)	(0.114)
enp	A_P	1.013***	-0.0725*	0.0233	-0.285***	0.0572	0.00553
		(0.0500)	(0.0405)	(0.0400)	(0.0571)	(0.0400)	(0.0405)
	A5_A1	0.276*	-0.255**	-1.377***	-1.138***	-1.001***	-0.858***
		(0.160)	(0.120)	(0.159)	(0.159)	(0.203)	(0.197)
	A1112_A11	0.0325***	0.00577	0.117**	0.137***	0.142	0.202*
		(0.0120)	(0.00879)	(0.0473)	(0.0454)	(0.113)	(0.114)
turnout	A_P	1.151***	-0.0594	0.0146	-0.279***	0.0566	0.0144
		(0.0511)	(0.0405)	(0.0391)	(0.0572)	(0.0410)	(0.0412)
	A5_A1	0.503***	-0.251**	-1.312***	-1.113***	-1.012***	-0.797***
		(0.157)	(0.119)	(0.158)	(0.159)	(0.208)	(0.198)
	A1112_A11	0.0149	0.00277	0.0941**	0.122***	0.104	0.176
		(0.0124)	(0.00883)	(0.0473)	(0.0460)	(0.113)	(0.115)
pc_a	A_P	0.756***	-0.163***	0.0314	-0.296***	0.124**	0.0452
		(0.0789)	(0.0554)	(0.0572)	(0.0814)	(0.0587)	(0.0618)
	A5_A1	0.0400	-0.247*	-1.111***	-0.890***	-0.606**	-0.686***
		(0.200)	(0.149)	(0.189)	(0.190)	(0.261)	(0.255)
	A1112_A11	0.0378*	-0.00923	0.124**	0.153***	0.0306	0.193
		(0.0198)	(0.0149)	(0.0579)	(0.0572)	(0.158)	(0.160)
C_a	A_P	1.016***	-0.0717*	0.00648	-0.282***	0.0827**	0.0161
		(0.0496)	(0.0405)	(0.0398)	(0.0571)	(0.0398)	(0.0403)
	A5_A1	0.280*	-0.258**	-1.329***	-1.128***	-0.842***	-0.790***
		(0.159)	(0.120)	(0.158)	(0.159)	(0.197)	(0.194)
	A1112_A11	0.0256**	0.00596	0.104**	0.130***	0.117	0.192*
		(0.0119)	(0.00878)	(0.0473)	(0.0459)	(0.112)	(0.113)
C_b	A_P	0.971***	-0.0695*	0.0318	-0.278***	0.0555	-0.00903
		(0.0501)	(0.0409)	(0.0393)	(0.0575)	(0.0414)	(0.0420)
	A5_A1	0.260	-0.232*	-1.348***	-1.123***	-1.004***	-0.866***
		(0.160)	(0.123)	(0.159)	(0.159)	(0.208)	(0.199)
	A1112_A11	0.0230**	0.00686	0.105**	0.128***	0.0887	0.184
		(0.0120)	(0.00882)	(0.0474)	(0.0458)	(0.113)	(0.114)
C_c	A_P	1.058***	-0.0697*	0.00684	-0.283***	0.0584	0.000517
		(0.0510)	(0.0410)	(0.0398)	(0.0571)	(0.0402)	(0.0406)
	A5_A1	0.388**	-0.230*	-1.334***	-1.130***	-0.960***	-0.870***
		(0.162)	(0.122)	(0.158)	(0.159)	(0.198)	(0.194)
	A1112_A11	0.0251**	0.00689	0.105**	0.131***	0.130	0.200*
		(0.0121)	(0.00882)	(0.0474)	(0.0459)	(0.112)	(0.113)
enp, turnout	A_P	1.024***	-0.0595	0.00551	-0.279***	0.0530	0.0155
		(0.0497)	(0.0405)	(0.0396)	(0.0572)	(0.0412)	(0.0413)
	A5_A1	0.298*	-0.250**	-1.304***	-1.113***	-1.016***	-0.826***
		(0.158)	(0.119)	(0.158)	(0.159)	(0.206)	(0.198)
	A1112_A11	0.0215*	0.00273	0.0936**	0.122***	0.145	0.195*
		(0.0120)	(0.00883)	(0.0473)	(0.0461)	(0.114)	(0.115)
enp, turnout, C_a	A_P	1.025***	-0.0605	0.00670	-0.280***	-0.133***	-0.128***
		(0.0497)	(0.0405)	(0.0397)	(0.0572)	(0.0470)	(0.0471)
	A5_A1	0.297*	-0.250**	-1.300***	-1.104***	-1.440***	-1.183***
		(0.158)	(0.119)	(0.158)	(0.159)	(0.210)	(0.201)
	A1112_A11	0.0214*	0.00288	0.0931**	0.122***	0.287**	0.291**
		(0.0120)	(0.00883)	(0.0473)	(0.0459)	(0.113)	(0.114)
Obs (1)		10367	10024	1756	1756	4368	4341

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.6.3

Coefficients of fiscal variables. Dependent variable: Log of Primary education gross rate , panel estimation (RE-PCSE)

Political competition variable	Log F	BRAZIL		COLOMBIA		MEXICO (2)	
		Basic	All	Basic	All	Basic	All
difrank2	A_P	0.122***	0.0373***	0.0146**	0.0118	0.0157***	-0.00445
		(0.00459)	(0.00373)	(0.00743)	(0.00817)	(0.00481)	(0.00313)
	A5_A1	0.101***	0.0518***	-0.0891***	-0.161***	-0.118***	0.00912
		(0.00928)	(0.00733)	(0.0326)	(0.0364)	(0.0219)	(0.0148)
	A1112_A11	-0.00756***	-0.00978***	-0.0230***	-0.0310***	-0.0425***	-0.00172
		(0.00110)	(0.000946)	(0.00813)	(0.00811)	(0.0116)	(0.00801)
enp	A_P	0.111***	0.0375***	0.0134*	0.0101	0.0115**	-0.00527*
		(0.00442)	(0.00373)	(0.00743)	(0.00819)	(0.00470)	(0.00311)
	A5_A1	0.0854***	0.0500***	-0.0876***	-0.161***	-0.143***	-0.00407
		(0.00895)	(0.00730)	(0.0323)	(0.0362)	(0.0212)	(0.0148)
	A1112_A11	-0.00696***	-0.00965***	-0.0230***	-0.0310***	-0.0332***	0.000277
		(0.00107)	(0.000946)	(0.00814)	(0.00812)	(0.0114)	(0.00801)
turnout	A_P	0.122***	0.0360***	0.0168**	0.0131	0.0164***	0.00182
		(0.00458)	(0.00373)	(0.00730)	(0.00799)	(0.00512)	(0.00321)
	A5_A1	0.103***	0.0512***	-0.106***	-0.161***	-0.123***	0.0288*
		(0.00919)	(0.00728)	(0.0329)	(0.0360)	(0.0230)	(0.0147)
	A1112_A11	-0.00775***	-0.00945***	-0.0178**	-0.0268***	-0.0516***	-0.00972
		(0.00110)	(0.000949)	(0.00820)	(0.00817)	(0.0117)	(0.00802)
pc_a	A_P	0.0810***	0.0349***	0.0116	0.00435	0.000423	-0.0143***
		(0.00628)	(0.00522)	(0.00988)	(0.0107)	(0.00588)	(0.00419)
	A5_A1	0.0462***	0.0274***	-0.0637*	-0.145***	-0.0834***	-0.0367**
		(0.0102)	(0.00871)	(0.0383)	(0.0422)	(0.0267)	(0.0182)
	A1112_A11	-0.00754***	-0.00985***	-0.0217**	-0.0269***	-0.0598***	0.0178
		(0.00162)	(0.00150)	(0.0103)	(0.0104)	(0.0156)	(0.0115)
C_a	A_P	0.112***	0.0378***	0.0166**	0.0129	0.0185***	-0.00318
		(0.00442)	(0.00374)	(0.00745)	(0.00817)	(0.00462)	(0.00306)
	A5_A1	0.0869***	0.0506***	-0.0932***	-0.161***	-0.0970***	0.0107
		(0.00891)	(0.00732)	(0.0324)	(0.0363)	(0.0197)	(0.0141)
	A1112_A11	-0.00753***	-0.00976***	-0.0222***	-0.0307***	-0.0411***	-0.00190
		(0.00107)	(0.000947)	(0.00813)	(0.00813)	(0.0114)	(0.00784)
C_b	A_P	0.109***	0.0379***	0.0141*	0.0117	0.0199***	-0.00281
		(0.00448)	(0.00380)	(0.00734)	(0.00806)	(0.00509)	(0.00334)
	A5_A1	0.0830***	0.0501***	-0.0928***	-0.161***	-0.112***	0.0121
		(0.00905)	(0.00749)	(0.0325)	(0.0362)	(0.0225)	(0.0149)
	A1112_A11	-0.00781***	-0.00982***	-0.0221***	-0.0306***	-0.0530***	-0.00619
		(0.00107)	(0.000953)	(0.00816)	(0.00816)	(0.0116)	(0.00806)
C_c	A_P	0.115***	0.0380***	0.0168**	0.0132	0.0122***	-0.00590*
		(0.00456)	(0.00381)	(0.00745)	(0.00819)	(0.00464)	(0.00310)
	A5_A1	0.0931***	0.0514***	-0.0932***	-0.161***	-0.128***	-0.00348
		(0.00917)	(0.00750)	(0.0324)	(0.0363)	(0.0205)	(0.0146)
	A1112_A11	-0.00765***	-0.00979***	-0.0221***	-0.0306***	-0.0382***	-0.00101
		(0.00108)	(0.000953)	(0.00812)	(0.00812)	(0.0114)	(0.00790)
enp, turnout	A_P	0.111***	0.0363***	0.0155**	0.0113	0.0163***	0.00219
		(0.00442)	(0.00374)	(0.00745)	(0.00819)	(0.00489)	(0.00315)
	A5_A1	0.0859***	0.0497***	-0.105***	-0.162***	-0.125***	0.0212
		(0.00893)	(0.00726)	(0.0326)	(0.0359)	(0.0209)	(0.0142)
	A1112_A11	-0.00721***	-0.00936***	-0.0178**	-0.0268***	-0.0363***	-0.00476
		(0.00107)	(0.000949)	(0.00822)	(0.00819)	(0.0114)	(0.00790)
enp, turnout, C_a	A_P	0.112***	0.0363***	0.0155**	0.0112	-0.0101*	-0.00478
		(0.00443)	(0.00374)	(0.00745)	(0.00819)	(0.00525)	(0.00358)
	A5_A1	0.0858***	0.0497***	-0.103***	-0.160***	-0.186***	0.00370
		(0.00893)	(0.00726)	(0.0326)	(0.0359)	(0.0221)	(0.0149)
	A1112_A11	-0.00723***	-0.00936***	-0.0179**	-0.0269***	-0.0158	-2.03e-07
		(0.00108)	(0.000950)	(0.00823)	(0.00820)	(0.0115)	(0.00796)
Obs (1)		10377	10032	1774	1774	4392	4365

(1) Median of N for all 9 regressions. (2) Log of years of education in population older than 15 years. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.6.4

Coefficients of fiscal variables. Dependent variable: Log-odds ratio of Infant Mortality , panel estimation (RE-PCSE)

Political competition variable	Log F	BRAZIL Basic	All	COLOMBIA Basic	All	MEXICO Basic	All
difrank2	A_P	-0.882***	-0.150***	-0.0487***	-0.0181	-0.187***	
		(0.0289)	(0.0132)	(0.0164)	(0.0163)	(0.0109)	
	A5_A1	-0.724***	-0.353***	0.480***	0.0597	-0.161***	
		(0.0596)	(0.0300)	(0.0549)	(0.0576)	(0.0495)	
	A1112_A11	0.0263***	0.0417***	0.00318	0.0113	0.207***	
		(0.00582)	(0.00343)	(0.0206)	(0.0185)	(0.0289)	
enp	A_P	-0.791***	-0.151***	-0.0473***	-0.0170	-0.186***	-0.159***
		(0.0271)	(0.0133)	(0.0164)	(0.0164)	(0.0108)	(0.0100)
	A5_A1	-0.596***	-0.341***	0.473***	0.0565	-0.114**	-0.179***
		(0.0565)	(0.0297)	(0.0552)	(0.0578)	(0.0489)	(0.0488)
	A1112_A11	0.0213***	0.0408***	0.00222	0.0107	0.200***	0.175***
		(0.00548)	(0.00343)	(0.0206)	(0.0185)	(0.0283)	(0.0282)
turnout	A_P	-0.881***	-0.138***	-0.0390**	-0.0126	-0.147***	-0.124***
		(0.0287)	(0.0132)	(0.0167)	(0.0167)	(0.0113)	(0.0105)
	A5_A1	-0.742***	-0.349***	0.453***	0.0547	0.0302	-0.0850*
		(0.0590)	(0.0295)	(0.0545)	(0.0571)	(0.0523)	(0.0487)
	A1112_A11	0.0285***	0.0389***	0.0120	0.0173	0.201***	0.166***
		(0.00587)	(0.00343)	(0.0206)	(0.0188)	(0.0284)	(0.0282)
pc_a	A_P	-0.652***	-0.122***	-0.0578***	-0.0341	-0.188***	-0.155***
		(0.0432)	(0.0166)	(0.0219)	(0.0221)	(0.0151)	(0.0142)
	A5_A1	-0.375***	-0.245***	0.397***	0.0832	-0.272***	-0.258***
		(0.0707)	(0.0341)	(0.0671)	(0.0686)	(0.0595)	(0.0605)
	A1112_A11	0.0109	0.0384***	0.0158	0.0251	0.169***	0.0820*
		(0.00848)	(0.00497)	(0.0257)	(0.0237)	(0.0425)	(0.0429)
C_a	A_P	-0.799***	-0.152***	-0.0344**	-0.00821	-0.208***	-0.171***
		(0.0272)	(0.0133)	(0.0168)	(0.0170)	(0.0110)	(0.0101)
	A5_A1	-0.608***	-0.346***	0.455***	0.0569	-0.224***	-0.255***
		(0.0564)	(0.0299)	(0.0548)	(0.0572)	(0.0496)	(0.0500)
	A1112_A11	0.0261***	0.0416***	0.00782	0.0149	0.234***	0.198***
		(0.00548)	(0.00343)	(0.0203)	(0.0185)	(0.0290)	(0.0287)
C_b	A_P	-0.775***	-0.153***	-0.0579***	-0.0257	-0.157***	-0.119***
		(0.0272)	(0.0135)	(0.0159)	(0.0159)	(0.0114)	(0.0104)
	A5_A1	-0.584***	-0.351***	0.457***	0.0521	-0.0175	-0.0928*
		(0.0572)	(0.0303)	(0.0550)	(0.0579)	(0.0509)	(0.0476)
	A1112_A11	0.0280***	0.0417***	0.00908	0.0138	0.228***	0.182***
		(0.00546)	(0.00343)	(0.0205)	(0.0186)	(0.0285)	(0.0278)
C_c	A_P	-0.832***	-0.154***	-0.0430***	-0.0165	-0.196***	-0.164***
		(0.0285)	(0.0135)	(0.0162)	(0.0162)	(0.0109)	(0.0101)
	A5_A1	-0.670***	-0.360***	0.445***	0.0543	-0.171***	-0.221***
		(0.0585)	(0.0304)	(0.0552)	(0.0574)	(0.0499)	(0.0501)
	A1112_A11	0.0266***	0.0416***	0.00978	0.0153	0.226***	0.194***
		(0.00558)	(0.00344)	(0.0204)	(0.0186)	(0.0289)	(0.0286)
enp, turnout	A_P	-0.794***	-0.140***	-0.0300*	-0.00450	-0.145***	-0.125***
		(0.0272)	(0.0132)	(0.0170)	(0.0172)	(0.0111)	(0.0104)
	A5_A1	-0.601***	-0.338***	0.452***	0.0579	0.0387	-0.0633
		(0.0564)	(0.0292)	(0.0544)	(0.0569)	(0.0503)	(0.0483)
	A1112_A11	0.0239***	0.0382***	0.0109	0.0169	0.173***	0.152***
		(0.00552)	(0.00342)	(0.0205)	(0.0188)	(0.0279)	(0.0278)
enp, turnout, C_a	A_P	-0.794***	-0.139***	-0.0302*	-0.00109	-0.0368***	-0.0357***
		(0.0272)	(0.0132)	(0.0171)	(0.0172)	(0.0118)	(0.0113)
	A5_A1	-0.601***	-0.338***	0.451***	0.0614	0.287***	0.161***
		(0.0564)	(0.0292)	(0.0552)	(0.0570)	(0.0527)	(0.0492)
	A1112_A11	0.0241***	0.0381***	0.0109	0.0163	0.0893***	0.0915***
		(0.00552)	(0.00342)	(0.0205)	(0.0188)	(0.0265)	(0.0265)
Obs (1)		10374	10030	1792	1792	4392	4365

(1) Median of observatiosn for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.6.5

Coefficients of fiscal variables. Dependent variable: Log of Student-teacher ratio in primary education, panel estimation (RE-PCSE)

Political competition variable	Log F	BRAZIL Basic	All	COLOMBIA Basic	All	MEXICO Basic	All
difrank2	A_P	-0.102***	-0.00560	-0.0339*	-0.0276	-0.0702***	
		(0.00705)	(0.00733)	(0.0179)	(0.0210)	(0.00455)	
	A5_A1	-0.0468**	0.0310*	0.0362	0.0421	-0.0716***	
		(0.0192)	(0.0171)	(0.0272)	(0.0382)	(0.0230)	
	A1112_A11	0.000921	0.00200	-0.0456*	-0.0447**	-0.0165	
		(0.00172)	(0.00163)	(0.0236)	(0.0224)	(0.0132)	
enp	A_P	-0.0991***	-0.00400	-0.0441**	-0.0368*	-0.0706***	
		(0.00703)	(0.00733)	(0.0179)	(0.0217)	(0.00453)	
	A5_A1	-0.0447**	0.0291*	0.0182	0.0177	-0.0735***	
		(0.0192)	(0.0170)	(0.0272)	(0.0401)	(0.0231)	
	A1112_A11	0.000650	0.00238	-0.0508**	-0.0510**	-0.0153	
		(0.00172)	(0.00163)	(0.0225)	(0.0216)	(0.0131)	
turnout	A_P	-0.0942***	-0.00837	-0.0424***	-0.0407**	-0.0665***	
		(0.00696)	(0.00733)	(0.0158)	(0.0203)	(0.00479)	
	A5_A1	-0.0439**	0.0320*	0.0155	0.0183	-0.0592**	
		(0.0183)	(0.0170)	(0.0279)	(0.0408)	(0.0237)	
	A1112_A11	0.00370**	0.00311*	-0.0481**	-0.0478**	-0.0189	
		(0.00173)	(0.00164)	(0.0234)	(0.0224)	(0.0132)	
pc_a	A_P	-0.110***	-0.0356***	-0.0716***	-0.0711***	-0.0803***	
		(0.00923)	(0.00981)	(0.0150)	(0.0181)	(0.00685)	
	A5_A1	-0.0585**	0.0102	0.0425	0.0465	-0.0322	
		(0.0234)	(0.0209)	(0.0323)	(0.0430)	(0.0317)	
	A1112_A11	-0.00351	-0.000969	-0.0402	-0.0415	-0.0267	
		(0.00248)	(0.00245)	(0.0265)	(0.0261)	(0.0182)	
C_a	A_P	-0.0967***	-0.00449	-0.0416**	-0.0353*	-0.0703***	
		(0.00700)	(0.00735)	(0.0184)	(0.0213)	(0.00446)	
	A5_A1	-0.0413**	0.0298*	0.0220	0.0241	-0.0700***	
		(0.0192)	(0.0171)	(0.0264)	(0.0401)	(0.0231)	
	A1112_A11	0.000784	0.00209	-0.0501**	-0.0497**	-0.0153	
		(0.00171)	(0.00163)	(0.0232)	(0.0223)	(0.0131)	
C_b	A_P	-0.0972***	-0.00543	-0.0425***	-0.0377*	-0.0671***	
		(0.00700)	(0.00733)	(0.0158)	(0.0204)	(0.00476)	
	A5_A1	-0.0425**	0.0299*	0.0209	0.0174	-0.0612***	
		(0.0191)	(0.0171)	(0.0267)	(0.0403)	(0.0235)	
	A1112_A11	0.00147	0.00188	-0.0504**	-0.0511**	-0.0180	
		(0.00172)	(0.00163)	(0.0225)	(0.0216)	(0.0131)	
C_c	A_P	-0.0987***	-0.00487	-0.0412**	-0.0353*	-0.0709***	
		(0.00701)	(0.00736)	(0.0182)	(0.0210)	(0.00449)	
	A5_A1	-0.0432**	0.0304*	0.0229	0.0266	-0.0733***	
		(0.0192)	(0.0171)	(0.0268)	(0.0409)	(0.0231)	
	A1112_A11	0.000892	0.00203	-0.0498**	-0.0492**	-0.0151	
		(0.00172)	(0.00163)	(0.0234)	(0.0224)	(0.0131)	
enp, turnout	A_P	-0.0921***	-0.00658	-0.0436**	-0.0395*	-0.0669***	
		(0.00695)	(0.00734)	(0.0181)	(0.0217)	(0.00478)	
	A5_A1	-0.0395**	0.0303*	0.0137	0.0219	-0.0597**	
		(0.0185)	(0.0168)	(0.0282)	(0.0404)	(0.0237)	
	A1112_A11	0.00321*	0.00345**	-0.0484**	-0.0471**	-0.0177	
		(0.00172)	(0.00164)	(0.0235)	(0.0228)	(0.0132)	
enp, turnout, C_a	A_P	-0.0920***	-0.00780	-0.0467***	-0.0435*	-0.0632***	
		(0.00692)	(0.00735)	(0.0176)	(0.0222)	(0.00513)	
	A5_A1	-0.0402**	0.0297*	0.0144	0.0242	-0.0513**	
		(0.0184)	(0.0168)	(0.0278)	(0.0408)	(0.0243)	
	A1112_A11	0.00366**	0.00370**	-0.0546**	-0.0523**	-0.0206	
		(0.00172)	(0.00164)	(0.0234)	(0.0223)	(0.0133)	
Obs (1)		10915	10915	94	94	4392	

(1) Median of observations for all 9 regressions. Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. All controls: basic controls plus population growth, index of human development and five clusters. The table reports panel corrected standard errors underneath coefficients. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.7.1
Brazil: Summary of results Tables A.3.1 to A.3.5 and A.4.1 to A.4.5

Indicator	Sewer	Water	Cprim	IM	Student-teacher ratio
difrank2		(-) FE, RE-Basic, H&T	(+) FE-All, (-) RE-Basic, H&T	(+) FE-Basic, RE-Basic, H&T	(+) FE-Basic, RE-Basic, H&T
enp		(+) FE, RE-Basic, H&T	(-) FE-All, (+) RE, H&T	(-) FE-Basic, RE, , H&T	(-) FE-Basic, RE-Basic, H&T
turnout		(+) FE, RE, H&T	(+) FE-All, RE-Basic, H&T,(-) RE-All	(+) FE-Basic, RE-All, H&T	(-) FE, RE, H&T
pc_a		(+) FE, RE, H&T	(-) FE-All, (+) RE-Basic	(-) FE, RE, H&T	(-) FE, H&T (+) RE-All
C_a		(+) FE, RE-Basic, H&T	(-) FE-All, (+) RE, H&T	(-) FE-Basic, RE, H&T	(-) FE, RE-Basic, H&T
C_b		(+) FE, RE-Basic, H&T	(+) RE, H&T	(-) FE, RE, H&T	(+) FE, RE-All (+) RE-Basic
C_c		(+) FE, RE-Basic, H&T	(-) FE-All, (+) RE, H&T	(-) FE-Basic, RE, H&T	(-) FE, RE-Basic, H&T
enp		(+) FE, RE-Basic	(-) FE-All (+) RE	(-) FE-Basic, RE	(-) FE-Basic, RE-Basic
turnout		(+) FE, RE	(+) FE-All, RE-Basic, (-) RE-All	(-) RE-Basic (+) RE-All	(-) FE, RE
enp			(-) FE-All	(+) FE-All, RE-All	(+) FE-Basic, RE
turnout				(+) FE	(+) RE-Basic
C_a			(+) FE-ALL, RE-Basic	(-) FE, RE-Basic	(-) FE-Basic, RE

Table A.7.2
Colombia: Summary of results Tables A.3.1 to A.3.5 and A.4.1 to A.4.5

Indicator	Sewer	Water	Cprim	IM	Student-teacher ratio
difrank2			(-) FE, H&T	(+) FE, H&T	(+) RE-All, H&T
enp		(+) FE	(+) FE, RE-All, H&T	(-) FE, H&T	
turnout	(-) RE-All	(+) RE	(-) FE, RE, H&T	(-) FE, H&T, (+) RE	
pc_a	(+) FE, H&T	(+) FE		(-) FE, H&T	(+) RE
C_a	(-) RE-All	(+) FE, RE-Basic		(-) FE, H&T, (+) RE-Basic	
C_b	(-) RE-All	(+) RE-Basic		(+) RE-Basic	
C_c	(-) RE-All	(+) FE, RE-Basic	(-) RE-Basic	(-) FE, H&T (+) RE-Basic	
enp	(-) RE-All	(+) FE	(+) FE	(-) FE	
turnout	(-) RE-All	(+) RE	(-) FE, RE	(-) FE (+) RE	
enp				(-) FE	(+) FE-All
turnout			(-) FE, RE	(-) FE	(+) FE-All
C_a			(+) FE	(+) FE	(-) FE-All

Table A.7.3
Mexico: Summary of results Tables A.3.1 to A.3.5 and A.4.1 to A.4.5

Indicator	Sewer	Water	edu15	IM	Student-teacher ratio
difrank2	(-) FE, RE, H&T	(-) FE, RE, H&T	(-) FE, RE, H&T	(+) FE, RE-Basic, H&T	(+) FE, H&T
enp	(+) FE, RE, H&T	(+) FE, RE, H&T	(+) FE, RE, H&T	(-) FE, RE, H&T	(-) FE, H&T
turnout	(-) FE, RE, H&T	(-) FE, RE-Basic, H&T	(-) FE, RE-Basic, H&T	(+) FE, RE, H&T	(+) FE, RE-Basic, H&T
pc_a	(+) FE, RE-Basic, H&T	(+) FE, H&T	(+) FE, RE-Basic, H&T	(-) FE, RE, H&T	(-) FE
C_a	(+) FE, RE, H&T	(+) FE, RE, H&T	(+) FE, RE, H&T	(-) FE, RE, H&T	(-) FE-All (+) RE-Basic
C_b	(-) FE, RE, H&T	(-) FE, RE, H&T	(-) FE, RE-Basic, H&T	(+) FE, RE, H&T	(+) FE, RE-Basic, H&T
C_c	(+) FE, RE, H&T	(+) FE, RE, H&T	(+) FE, RE, H&T	(-) FE, RE, H&T	(-) FE, H&T, (+) RE-Basic
enp	(+) FE, RE	(+) FE, RE	(+) FE, RE	(-) FE, RE	(-) FE (+) RE-Basic
turnout	(-) FE , RE	(-) FE	(-) FE, RE-All	(+) FE, RE	(+) FE, RE-Basic
enp	(-) FE, RE	(-) FE, RE	(-) FE, RE-Basic	(+) FE, RE	(+) RE-Basic
turnout	(-) FE, RE	(-) FE, RE	(-) FE, RE-Basic	(+) FE, RE	(+) FE, RE-Basic
C_a	(+) FE, RE	(+) FE, RE	(+) FE, RE	(-) FE, RE	(-) FE, RE-Basic

Table A.8.1

Brazil: Summary of results Tables A.5.1 to A.5.5 and A.6.1 to A.6.5

Fiscal Variable	Sewerage	Water	Cprim	IM	Student-teacher ratio
Municipal revenue per capita (A_P)		(+) FE-Basic, RE	(+) FE-Basic, RE	(-) FE, RE-Basic	(-) FE-Basic, RE-Basic
Total transfers/ current revenue (A5_A1)		(-) FE, RE-All (+) RE-Basic	(+) FE-Basic, RE	(-) FE, RE	(-) RE
Urban property tax revenue/ tax revenue (A112)A11)		(-) FE (+) RE-Basic	(-) FE, RE	(+) FE, RE	(+) FE

Table A.8.2

Colombia: Summary of results Tables A.5.1 to A.5.5 and A.6.1 to A.6.5

Fiscal Variable	Sewerage	Water	Cprim	IM	Student-teacher ratio
Municipal revenue per capita (A_P)	(-) FE-Basic, RE-All	(-) FE-Basic, RE-All	(+) RE-Basic	(-) FE, RE-Basic	(-) RE
Total transfers/ current revenue (A5_A1)	(-) RE	(-) RE	(-) RE	(-) FE, (+) RE-Basic	
Urban property tax revenue/ tax revenue (A112)A11)	(-) RE	(+) RE	(-) FE, RE		(-) RE

Table A.8.3

Mexico: Summary of results Tables A.5.1 to A.5.5 and A.6.1 to A.6.5

Fiscal Variable	Sewerage	Water	edu15	IM	Student-teacher ratio
Municipal revenue per capita (A_P)	(+) FE, RE	(+) FE, RE-Basic	(+) FE, RE-Basic	(-) FE, RE	(-) FE, RE-Basic
Total transfers/ current revenue (A5_A1)	(-) FE-All, RE	(-) FE-All, RE	(+) FE-Basic(-) RE-Basic	(+) FE-All, (-) RE	(-) FE, RE-Basic
Urban property tax revenue/ tax revenue (A112)A11)	(-) FE, RE	(-) FE	(-) FE-Basic, RE-Basic	(+) FE, RE	(+) FE

Table A.9.1

Coefficients of political variables. Dependent variable: Log-odds ratio of Sewage coverage, panel estimation (fixed effects)

		COLOMBIA		MEXICO	
Log of	**Population rank**	**Coefficient**	**n**	**Coefficient**	**n**
difrank2	0-10,000	(0.012)	635	-0.21***	1923
	10,000-30,000	(-0.039)	724	-0.284***	1349
	30,000-50,000	(0.031)	183	-0.245***	442
	50,000-250,000	(-0.105)	166	-0.118**	546
	>250,000	(-0.343)	48	-0.002	127
enp	0-10,000	(-0.033)	635	1.544***	1924
	10,000-30,000	(0.064)	724	2.199***	1349
	30,000-50,000	(0.204)	183	2***	442
	50,000-250,000	(0.48)**	166	1.553***	546
	>250,000	(0.472)	48	0.147	127
turnout	0-10,000	(0.242)	635	-7.029***	1925
	10,000-30,000	(0.057)	724	-7.179***	1351
	30,000-50,000	(0.789)*	183	-7.291***	443
	50,000-250,000	(-0.721)	166	-6.499***	547
	>250,000	(-0.218)	48	-5.924***	127
pc_a	0-10,000	(-0.004)	344	0.094	626
	10,000-30,000	(0.06)*	440	0.218***	679
	30,000-50,000	(0.098)	129	0.17***	253
	50,000-250,000	(0.164)**	122	0.122**	383
	>250,000	(0.2)	45	0.013	95
C_a	0-10,000	(0.03)	635	0.29	1924
	10,000-30,000	(0.063)	724	0.485***	1349
	30,000-50,000	(0.299)*	183	0.523*	442
	50,000-250,000	(0.331)	166	-0.28	546
	>250,000	(0.438)	48	-1.259*	127
C_b	0-10,000	(0.061)	635	-0.601***	1924
	10,000-30,000	(-0.007)	724	-0.679***	1349
	30,000-50,000	(0.127)	183	-0.619***	442
	50,000-250,000	(0.177)	166	-0.55***	546
	>250,000	(0.202)	48	-0.429*	127

Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.9.2

Coefficients of political variables. Dependent variable: Log-odds ratio of Water coverage, panel estimation (fixed effects)

		BRAZIL		COLOMBIA		MEXICO	
Log of	**Population rank**	**Coefficient**	**n**	**Coefficient**	**n**	**Coefficient**	**n**
difrank2	0-10,000	-0.042	4595	0.003	635	-0.183***	1904
	10,000-30,000	-0.022	3605	-0.046	724	-0.201***	1349
	30,000-50,000	-0.029	769	-0.041	183	-0.22***	442
	50,000-250,000	-0.029	882	0.013	166	-0.175***	546
	>250,000	-0.155*	172	-0.314	48	0.008	127
enp	0-10,000	0.209**	4596	0.025	635	1.009***	1904
	10,000-30,000	0.023	3605	0.088	724	0.979***	1349
	30,000-50,000	0.315**	769	0.527***	183	0.907***	442
	50,000-250,000	-0.018	882	0.215	166	1.223***	546
	>250,000	0.404	172	0.539	48	0.057	127
turnout	0-10,000	1.071***	4596	-0.04	635	-4.017***	1905
	10,000-30,000	1.565***	3605	-0.003	724	-3.767***	1351
	30,000-50,000	1.689***	769	1.1*	183	-3.428***	443
	50,000-250,000	0.857*	882	-0.659	166	-4.261***	547
	>250,000	4.057***	172	1.477	48	-4.624***	127
pc_a	0-10,000	0.039	1892	0.004	344	0.079	620
	10,000-30,000	-0.003	1814	0.069	440	0.14***	679
	30,000-50,000	0.104*	459	0.16	129	0.067	253
	50,000-250,000	0.041	575	0.119	122	0.099*	383
	>250,000	0.159	156	0.261	45	0.164	95
C_a	0-10,000	0.299***	4596	0.02	635	0.357**	1904
	10,000-30,000	0.159*	3605	0.062	724	0.142	1349
	30,000-50,000	0.407***	769	0.585***	183	0.371	442
	50,000-250,000	0.033	882	0.091	166	-0.138	546
	>250,000	0.581*	172	0.574	48	-1.324**	127
C_b	0-10,000	0.042	4397	0.068	635	-0.313***	1904
	10,000-30,000	0.094*	3513	0.025	724	-0.322***	1349
	30,000-50,000	0.092	753	0.136	183	-0.19**	442
	50,000-250,000	0	870	0.08	166	-0.343***	546
	>250,000	0.534**	172	0.063	48	-0.435**	127

Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.9.3

Coefficients of political competition variables. Dependent variable: Log of primary education (gross rate), panel estimation (fixed effects)

Log of	Population rank	BRAZIL Coefficient	n	COLOMBIA Coefficient	n	MEXICO (1) Coefficient	n
	0-10,000	0.006**	4603	-0.01**	648	-0.037***	1927
	10,000-30,000	0	3605	-0.003	730	-0.043***	1349
difrank2	30,000-50,000	0.012***	769	0.014	181	-0.029***	442
	50,000-250,000	0.004	882	-0.001	166	-0.017***	546
	>250,000	0.003	172	-0.006	48	-0.01	127
	0-10,000	-0.024***	4604	0.04	648	0.207***	1928
	10,000-30,000	-0.013	3605	0.009	730	0.297***	1349
enp	30,000-50,000	-0.041***	769	-0.071**	182	0.285***	442
	50,000-250,000	-0.009	882	-0.008	166	0.191***	546
	>250,000	0.019	172	-0.055	48	0.076**	127
	0-10,000	0.033	4604	-0.059*	648	-0.748***	1929
	10,000-30,000	0.112***	3605	-0.031	730	-0.793***	1351
turnout	30,000-50,000	0.201***	769	-0.175	182	-0.889***	443
	50,000-250,000	-0.026	882	-0.203	166	-0.683***	547
	>250,000	0.069	172	-0.129	48	-0.579***	127
	0-10,000	-0.003	1899	-0.024**	366	0.009	626
	10,000-30,000	-0.002	1814	0.003	428	0.023***	679
pc_a	30,000-50,000	-0.01**	459	-0.003	126	0.026***	253
	50,000-250,000	-0.005	575	0.023*	124	0.016***	383
	>250,000	-0.006	156	-0.021	45	0.018***	95
	0-10,000	-0.018**	4604	0.022	648	0.083***	1928
	10,000-30,000	-0.004	3605	0.002	730	0.115***	1349
C_a	30,000-50,000	-0.025**	769	-0.076**	182	0.104***	442
	50,000-250,000	-0.012	882	-0.023	166	-0.002	546
	>250,000	0.022	172	-0.048	48	-0.108***	127
	0-10,000	0	4405	-0.033*	648	-0.074***	1928
	10,000-30,000	-0.002	3513	0.002	730	-0.082***	1349
C_b	30,000-50,000	0.001	753	-0.014	182	-0.078***	442
	50,000-250,000	0	870	-0.023	166	-0.065***	546
	>250,000	0.004	172	-0.029	48	-0.045***	127

Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.9.4

Coefficients of political variables. Dependent variable: Log-odds ratio of Infant mortality, panel estimation (fixed effects)

Log of	Population rank	BRAZIL Coefficient	n	COLOMBIA Coefficient	n	MEXICO Coefficient	n
difrank2	0-10,000	-0.004	4603	0.009**	658	0.187***	1927
	10,000-30,000	0.003	3603	0.02	739	0.179***	1349
	30,000-50,000	-0.002	769	0.017*	182	0.128***	442
	50,000-250,000	-0.046***	882	0.016***	165	0.084**	546
	>250,000	0.012	172	0.029**	48	0.085	127
enp	0-10,000	-0.035	4604	-0.031***	658	-0.918***	1928
	10,000-30,000	-0.007	3603	-0.06	739	-1.205***	1349
	30,000-50,000	0.028	769	-0.069**	182	-1.181***	442
	50,000-250,000	0.061	882	-0.054***	165	-0.659***	546
	>250,000	0.064	172	-0.007	48	-0.222	127
turnout	0-10,000	0.006	4604	-0.079***	658	2.58***	1929
	10,000-30,000	0.081	3603	-0.086***	739	3.019***	1351
	30,000-50,000	0.148	769	-0.119**	182	3.244***	443
	50,000-250,000	0.162	882	-0.151***	165	2.993***	547
	>250,000	-0.808**	172	-0.211**	48	2.698***	127
pc_a	0-10,000	-0.016	1899	-0.006	342	-0.066**	626
	10,000-30,000	-0.011	1814	-0.008*	423	-0.062**	679
	30,000-50,000	0.01	459	-0.007	119	-0.077***	253
	50,000-250,000	-0.019	575	-0.01**	118	-0.043	383
	>250,000	0.014	156	0.019	42	-0.08**	95
C_a	0-10,000	-0.037	4604	-0.033***	658	-0.515***	1928
	10,000-30,000	-0.003	3603	-0.058*	739	-0.54***	1349
	30,000-50,000	0.039	769	-0.067**	182	-0.604***	442
	50,000-250,000	0.068*	882	-0.051***	165	0.11	546
	>250,000	0.02	172	-0.016	48	0.603**	127
C_b	0-10,000	-0.025*	4405	-0.004	658	0.231***	1928
	10,000-30,000	-0.016	3511	0.016	739	0.338***	1349
	30,000-50,000	-0.01	753	-0.044***	182	0.337***	442
	50,000-250,000	-0.002	870	-0.026*	165	0.373***	546
	>250,000	-0.025	172	-0.023	48	0.398***	127

Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

Table A.9.5

Coefficients of political competition variables. Dependent variable: Log of student-teacher ratio in primary education, panel estimation (fixed effects)

Log of	Population rank	BRAZIL Coefficient	n	MEXICO Coefficient	n
difrank2	0-10,000	0.001	5218	0.026***	1927
	10,000-30,000	0.004*	3830	0.011***	1349
	30,000-50,000	-0.007*	792	0.005	442
	50,000-250,000	-0.002	902	0.009	546
	>250,000	-0.002	172	0.005	127
enp	0-10,000	-0.013	5219	-0.123***	1928
	10,000-30,000	-0.012	3830	-0.114***	1349
	30,000-50,000	0.022	792	-0.127***	442
	50,000-250,000	0	902	-0.123***	546
	>250,000	0.017	172	-0.186**	127
turnout	0-10,000	-0.035	5219	0.307***	1929
	10,000-30,000	-0.106***	3830	0.401***	1351
	30,000-50,000	0.023	792	0.485***	443
	50,000-250,000	-0.019	902	0.412***	547
	>250,000	-0.102	172	0.533***	127
pc_a	0-10,000	-0.005	2309	-0.012	626
	10,000-30,000	-0.009**	2097	-0.008**	679
	30,000-50,000	0.009*	504	-0.008*	253
	50,000-250,000	-0.005	623	-0.014**	383
	>250,000	-0.011*	159	0.01	95
C_a	0-10,000	-0.015*	5219	-0.061***	1928
	10,000-30,000	-0.018**	3830	0.001	1349
	30,000-50,000	0.021	792	-0.015	442
	50,000-250,000	-0.002	902	0.018	546
	>250,000	0.016	172	-0.031	127
C_b	0-10,000	0.014***	5219	0.042***	1928
	10,000-30,000	0.01**	3830	0.055***	1349
	30,000-50,000	0.032***	792	0.058***	442
	50,000-250,000	0.009	902	0.014	546
	>250,000	0.008	172	0.01	127

Coefficients of control variables are not reported. Basic controls: logarithm of: per capita gross domestic product or its proxy, population and demographic density. Statistical significance is conventionally noted: ***p<.01, **p<.05, *p<.1

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