How Political Factors Are Building Metropolitan Areas: The Case of Santiago De Chile

Felipe Livert[1], Xabier Gainza[2], Jose Acuña[1], and Nicolas Romero[3]

[1] *Universidad Alberto Hurtado,Chile*
[2] *University of the Basque Country (UPV,EHU), Spain*
[3] *Ministry of Housing and Urban Development, Chile*

Abstract

This paper analyses the effect of political factors and social capital on the allocation of public investment from the central government to local governments of the Santiago Metropolitan Area, Chile. Considering panel data of two decentralized and one centralized investment programs over the period 2009-2017, the paper explores if decentralized and centralized investment is equally subject to capture by political interests. Our results reveal that decentralized investment is distributed according to partisan criteria, whereas centralized investment is free from political influence. The reason is that local governments lobby for funds encouraged by their electoral results, but the central disburser does not consider its own electoral prospects. The analysis also points at the role of social capital limiting local governments' influence over an arbitrary distribution. Based on these results, the paper discusses the implications for metropolitan governance, highlighting the potential role of a two-tier governance scheme to retain the benefits of decentralization, acquire economies of scale in metropolitan service provision and reduce the margin for pork barrelling.

Keywords: Distributive politics; Social capital; Urban governance

Introduction

The allocation of public resources within different city areas is a key question for urban governance because it affects the provision of local infrastructure and shapes the urban growth pattern. General explanations place this issue halfway between the incumbent's ideology and technical considerations imposed by bureaucratic decision standards, but different political factors may also mediate investment decisions. The recent wave of decentralization has strengthen the role of local governments as service providers, introducing questions around the distribution of responsibilities between different government tiers and the adequate transfer system to finance urban infrastructure. Decentralization is a quest for finding better and more flexible ways of providing services (Ahmad & Brosio, 2009; Kahkonen & Lanyi, 2001); yet, local governments may pursue their own electoral interests in the distribution of public goods (Livert & Gainza, 2018). As the literature on distributive politics stresses, politicians are motivated by the desire to retain public office and, consequently, local governments may allocate urban infrastructure bearing in mind their re-election chances (Golden & Min, 2013).

In a similar vein, the delegation of powers to local authorities has motivated participatory reforms to include citizens in decision-making. Civic engagement in public affairs is a source for deepening democracy and improving the quality, accountability and flexibility of services because social capital increases citizens' control over public goods (Gaventa & Barrett, 2012). However, associations can also capture local resources if organized interest groups free ride the public good for their own benefit (Platteau, 2004).

This paper explores the role of political, social and institutional factors in the allocation of investment funds from the central government to the municipalities of the Santiago Metropolitan Area (Chile), and its impact on the urban dynamic. We examine three potential determinants for urban investment distribution. First, we analyze if the allocation of funds is mediated by electoral concerns; in particular, we test if distribution favors urban areas ruled by mayors belonging to the central government coalition parties. The aim is not only to test the existence of 'pork-barrel' politics, but also to understand the sources for such a political bias. Theoretically, distribution could be driven by national government's electoral interest or, on the contrary, may be due to municipal governments' capacity to put pressure on the central government, encouraged by their electoral power. Second, we analyze if the density of community-based organizations in urban areas is also a source for attracting investment funds. As mentioned, the participation of local social capital in urban governance can improve local governments' responsiveness and accountability, but also runs the risk of capture by these organized interest groups. Third, we contrast the influence of these factors against urban areas' socioeconomic characteristics and the city's growth dynamic. Urban investment can pursue spatial equity by concentrating in areas where the most vulnerable population lives, but such redistributive function could be undermined if investment is captured by electoral purposes or organized interests groups. Consequently, one last aim of the paper is to discuss the influence of these potential determinants over urban governance and the metropolitan growth pattern.

In particular, the paper addresses the following research questions: is urban investment distributed according to mayors' partisan alignment with the central government? Is centralized and decentralized investment equally subject to political influence? Do organized interest groups capture investment for their own benefit or, conversely, help improving the accountability of local governments? Do these factors affect urban governance and the metropolitan growth pattern? What mechanisms and institutional changes could narrow the scope for political clout? The analysis draws on panel data of public investment funds from the central government to the 52 municipalities of the Santiago Metropolitan Area (SMA) over the period 2009-2017. We considered one centralized and two decentralized urban investment programs as dependent variables. The intention is not only to gain additional evidence, but to test if a (de)centralized institutional design is more or less subject to capture by electoral concerns and organized interest groups. Independent variables are related with municipal and national electoral information, the local social capital, and municipalities' socioeconomic and urban characteristics. The identification strategy relies on fixed-effects considering heteroskedasticity and autocorrelation robust estimation.

This research adds two important contributions to the literature on urban governance. First, there is scant evidence on the influence of electoral interests in the distribution of investment on a metropolitan scale, despite a burgeoning literature on regional and national scales. An exception is Miranda & Tunyavong (1994) who found that electoral competition and regime maintenance mediated urban service delivery in Chicago. Nevertheless, the existence of a political bias yields important implications for the institutional design of intergovernmental transfers and the governance of the metropolitan area. Consequently, a second contribution of the paper is discussing the mechanisms that can limit the electoral influence and provide the basis for a more inclusive and balanced urban governance. The latter is particularly relevant in urban settings characterized by strong socio-spatial disparities, since urban infrastructure investment could be used as a redistributive mechanism to tackle spatial imbalances.

The remainder of the paper is organized as follows. In the next section, we summarize the academic literature on the potential determinants of urban service delivery. We focus on three determinants: the duties of local governments within a decentralization framework; the role of social capital in participatory governance of public service delivery, but also the risks of capture by organized interest groups; and the literature on distributive politics, which stresses electoral motivations in the distribution of funds. Next, we characterize the SMA in terms of its socio-spatial features and the governance framework. Section four presents the data and methodology for the empirical analysis, and section five summarizes the main results. In section six, we explore the implications of the results for urban governance and the metropolitan growth dynamic. The paper concludes with some reflections about the analysis and the implications for further research.

Potential determinants of urban service delivery

Decentralization and multilevel governance

A first determinant for an efficient provision of public resources is how responsibilities should be distributed across government levels within a framework of multilevel governance. In the last decades, the literature on decentralization has addressed the importance of local governments as service providers in theoretical and practical terms (Ahmad & Brosio, 2009). The debate has surpassed the academic circles, and processes of decentralization are underway in different socioeconomic and institutional contexts around the world. Yet despite this general trend, there are different *meanings* and *intensities* in decentralization processes, ranging from political decentralization, i.e., the devolution of powers and responsibilities, to economic (fiscal) decentralization, which involves transferring autonomy in service provision and (in some cases) fiscal capacity to local authorities. We focus mainly on the latter strand of the debate.

Potentially, there are both, political and economic advantages from decentralization. Politically, decentralization is a quest for deepening democracy because it facilitates citizens' engagement by bringing closer decision-making (Andersson & Van Laerhoven, 2007). Other advantages stem from the possibility to make government decisions more transparent and accountable (Ackerman, 2004).

Economically, decentralization is expected to improve the responsiveness, flexibility, efficiency and accountability of service delivery. Advocates of decentralization stress that local governments will be more responsive to the preferences of their constituencies and will find better and more flexible ways of providing services (Oates, 1999). In theory, local governments can improve service provision because closeness provides them with better information about citizens' needs and preferences (Goldfrank, 2002). Efficiency gains originate from competition among jurisdictions that encourage them to provide the best combination of taxes and services. Last, local governments are likely to be accountable to citizens because closeness favours auditing the provision of public goods.

A major issue in this regards, particularly in developing countries, is if decentralization responds adequately to the preferences and needs of the poor, which are much more dependent on basic social services. Empirical case studies seem to render contradictory results. For instance, the view that decentralization may be a pro-poor strategy was empirically supported by Faguet (2008), who found that decentralization increased investment in basic social services and human capacity formation in Colombia and Bolivia, while holding running costs constant. By contrast, Inchauste (2009) found no evidence of a clear improvement in the poorest Bolivian municipalities or for the poorest people. In this sense, Robinson (2007) warns that the available evidence on the outcomes for the poor draws in examples from individual countries or is temporarily limited, thus rendering the task of generalization problematic.

An important concern is how the provision of local public goods is financed. In some cases, decentralization *just* entails the transfer of financial resources to sub-national governments in the forms of grants or transfers, whereas in others it also involves tax-raising powers. In principle, both systems may be adequate to finance the provision of public goods. If local governments have no (or limited) revenue raising capacity, they will need resources, flexibility and autonomy for their decisions, while holding accountable. This implies a proper transfer system to reduce vertical and horizontal imbalances. Vertical imbalances arise from the mismatch between local governments' revenues and expenditure, while horizontal imbalances refer to the differences in fiscal capacities among constituencies (Bird & Smart, 2002). Transfers from higher-level to lower-level government tiers compensate for vertical imbalances, whereas equalization transfers among territories are designed to tackle spatial disparities. Although most countries have formal equalization transfer systems, the particular institutional design of horizontal transfers differ significantly across countries because it is a concept with many different interpretations (should revenues *or* expenditures be equalized?) and it is politically sensitive.

In the last decades several authors have stressed the importance of transferring also tax raising capacity to overcome the fiscal gap between revenues and expenditure. The so-called literature on second generation fiscal federalism emphasizes the importance of revenue generation because this way local governments tend to be more accountable to citizens, provide public goods more efficiently and tend to be less corrupt (Weingast, 2009). Obviously, the more the local government depends on its own resources, the more autonomy will enjoy, but also the more room will be for territorial imbalances, considering tax base differentials and fiscal policy options. A major concern is how the tax system will balance the incentives of subnational governments to levy taxes to finance adequately the provision of public services, while compensating lagging areas for horizontal imbalances.

Despite the alleged benefits of decentralization, it also involves several risks, particularly in the developing world. The first is whether decentralization increases territorial disparities. In theory, a decentralized regime would let territories getting along on their own, although in practice intergovernmental transfers are designed to compensate for the fiscal gap. Considering the socioeconomic context of the Global South, decentralization may exacerbate spatial inequalities as poorer areas lack richer areas' competitive and fiscal capacities. Empirical evidence seems to support such perception. While in high income countries decentralization has had positive effects over regional income distribution, decentralization may lead to higher territorial inequalities in developing and emerging economies (Lessmann, 2012; Rodríguez-Pose & Ezcurra, 2009).

Another important caveat is when localities differ in their degree of influence over the central government. If local governments are able to condition central policymaking, stronger areas may put pressure on institutional reforms for their own benefit (Rodríguez-Pose & Gill, 2005). This is particularly relevant in the discussion of the method for revenue sharing across areas. If intergovernmental transfers are allocated on a discretionary basis, there is wider margin for political influence than in formula-based allocation schemes.

Third, decentralization can also lay the conditions for local elites' capture of public resources and institutional underperformance (Sidel, 2005). Local level politics is often under less scrutiny than national politics and, besides, local politicians find stronger pressure for coercion and particularistic interests from organized groups. On this point, Bardhan & Mookherjee (2000) provide a formal model of the determinants of capture, including the greater cohesiveness of special-interest groups and the higher level of voter influence at the local level. Although capture may also occur in different government tiers, proximity and the institutional design of the local state may exacerbate it. A partial decentralization scheme in which local governments have no capacity to raise resources on their own and spending depends on intergovernmental transfers for local service delivery may suffer stronger pressures for patronage because they do not have to pay the cost of their own outlays (the *moral haz-*

ard argument). Following this line of enquiry, Khemani (2010) argues that grants-financed spending at the local level enables politicians to target benefits to organized interest groups in exchange of political support. The capture of public resources not only affects the provision of public goods, it may also affect the institutional design of intergovernmental transfers. When higher tier politicians face increasing participation by swing voters, they will have incentives to decentralize spending because it enables them to win elections by dividing swing voters and providing targeted benefits to core supporters on the local level (Khemani, 2010).

Civic engagement, social capital and capture

The delegation of power and responsibilities to lower government tiers is often discussed together with the processes and mechanisms for inclusive and participatory governance.

Similar to decentralization, participatory governance has potential outcomes over the democratic process and the provision of public services. Much of the literature has focused on its role for deepening democracy. The deliberation of ideas and collective decision-making fosters the construction of citizenship and makes the democratic process more inclusive and transparent (Blas & Ibarra, 2006). Participation is also a source for empowerment and inclusion, particularly for those social groups usually excluded from decision-making (Gaventa & Barrett, 2012).

Civic engagement can also increase the quality and performance of public services (Andrews, 2012; Needham, 2008). The advantages for public service delivery stand from different sources. By playing an active role in producing public goods and services, citizens and local governments can engage into a synergetic relationship that is not to be found in centralized, hierarchical governance forms (Ostrom, 1996). Community organizations can enhance performance by enabling citizens to overcome collective action problems associated with government and market failures, such as budget constraints, different demands by different social groups and information asymmetries (Dollery & Wallis, 2006). Organizations develop expertise and capacities for addressing social problems, thus matching users' preferences and lowering production costs. Last, civic engagement also improves responsiveness and accountability of local governance as it entails wider forms of control and influence over public service providers (Ackerman, 2004).

There are, nonetheless, several cautions to be considered. The first is that, although citizen engagement overall contributes to democratization, empowerment and institutional performance, it can also have negative consequences steaming from disempowerment and a reduced sense of agency, lack of accountability and representation in networks, denial of state services and resources, and reinforcement of social hierarchies and exclusion (Gaventa & Barrett, 2012). There are two major reasons that tip the scale to one or the other side of the outcomes. On the one hand, effective participatory governance requires particular political and socioeconomic conditions; above all, that civil society actors need to be willing and able to participate and public officials need to be interested in participatory governance (Speer, 2012). Besides, decentralization and legal reforms may be necessary conditions but not sufficient ones: sharing political power and control with citizens depends to a significant degree on the institutional incentives and local politicians' expectations of future rewards and penalties associated with their actions (Andersson, 2007).

The other reason for the fuzziness of the impacts is that the literature tends to group very different items under the participatory governance umbrella. For instance, the seminal work by Putnam, Leonardi, & Nanetti (1993) that links institutional performance with the presence of dense networks of formal and informal associations and the accompanying norms of generalized trust and reciprocity involves both, social structures (networks, formal and informal associations) and the intangibles steaming from these (trust, reciprocity). However, each dimension is likely to have a different impact (Andrews, 2012). In fact, Knack (2002) found that, while generalized reciprocity and social trust improve government performance, there is no effect for aspects of social capital identified with civic engagement, such as activity in associations. This is so because the beneficial effects of group membership depends on the purpose of the group, its diversity and inclusiveness, and the intensity of group's activities (Stolle and Rochon, 1998, cited in Knack (2002)). Moreover, civic engagement through group membership also imposes major risks for governance in terms of capture. As discussed in the previous section, local elites can also harbour resources for their own benefit at the expense of the community (Platteau, 2004).

Distributive politics

A third potential determinant for public service delivery is the political incentives of the distributor to channel resources to particular groups or areas based on its own interests. In the past two decades, the literature on distributive politics has documented the significance of partisan and electoral concerns for public resource distribution in many countries around the world (Golden & Min, 2013). Political interference includes manipulating fiscal variables along the electoral cycle to convince voters that the politicians have recently been doing 'an excellent job', i.e. political business cycle (Rogoff, 1990), showing political favouritism for culturally constructed population subgroups (Kramon & Posner, 2013) or benefitting particular areas to maximize their re-election chances, i.e. 'pork-barrel' (Tavits, 2009).

Although the literature has addressed several forms of political distortions, probably the most spread is concentrating resources in particular geographical areas with electoral motifs, while diffusing costs across voters. The analyses on arbitrary spatial allocation of resources to increase electoral chances are based on two different formal models. The 'core supporter model' states that politicians will channel resources to support groups because the optimal strategy for risk-averse candidates is to redistribute to core supporters (Cox & McCubbins, 1986). Assuming that swing groups are riskier investments, Cox and Mc Cubbins (1986) predict that politicians will invest little in opposition groups, somewhat more in swing groups, and the most in their support groups. By contrast, Dixit & Londregan (1996), building on Lindbeck & Weibull, (1987), state that parties will woo groups that are politically central and most willing to switch their votes, and only in the specific case of a political party having adequate information about its constituents and being able to target goods to specific individuals will parties favour their own support group ('machine politics').

Empirical evidence on 'pork-barrels' supports both the core and the swing voter hypothesis or, to be more precise, core vs. swing 'districts' hypothesis, as empirical analyses overall use data from electoral units rather than individual voters (Golden & Min, 2013). For instance, Case (2001) proved that, in Albania, social assistance block grants were biased toward the communes that voted with the majority party in local elections. Rodríguez-Pose, Psycharis, & Tselios (2016) also found that in Greece political parties rewarded loyal territories that returned them to office rather than favouring disputed areas that may bring them more votes in the future. In Brazil, Brollo & Nannicini (2012) estimated that the municipalities ruled by the same political party of the Brazilian president received larger transfers. Interestingly, they showed that the political effect was primarily driven by the fact that the federal government penalized municipalities run by mayors from the opposite coalition who were due to win by a narrow margin. On the contrary, Johansson (2003) reached a different conclusion: she found evidence of pork-barrels in intergovernmental grants in swing municipalities in Sweden. Kwon's (2005) analysis too supported the swing voter thesis in South Korea, as subsidies tended to be allocated to swing provinces in which electoral contests were competitive.

One last question refers to the effects of such an opportunistic political behavior. Golden and Min (2013) argue that the literature has paid too much attention to how resources are distributed and too less to the redistributive consequences of patterns of allocation; however if *allocations are welfare maximizing, then the political conflicts that lie behind them are spurious, incidental or irrelevant* (Golden and Min, 2013, p. 75). Reformulating the latter words to bring them into an urban context, if allocations do not lead to an *equitable and sustainable* urban pattern[1] , then the political conflicts that lie behind them are *real, primary or relevant* [our emphasis]. This is what motivates us in the following.

The Santiago Metropolitan Area: socio-spatial characteristics and the multilevel governance framework

The Santiago Metropolitan Area (SMA) is by far the largest metropolitan area of Chile as it accounts, on aggregate, for 40% of the total population and the 49% of GDP. Like other Latin American metropolises, Santiago has high level of inequality and residential segregation (Jordán, Rehner, & Samaniego, 2010). It holds an income-based index GINI of 0.55, which is in line with other cities of the sub-continent, such as Bogotá (0.61), Mexico City (0.56), Quito (0.54), Rio de Janeiro (0.53), Buenos Aires (0.52) and Guatemala City (0.50) (UN-HABITAT, 2010). Spatially, richest municipalities are clustered in the northeast cone whereas the poorest spread to the south and the northwest. Residential segregation in the SMA has historical roots, but recent changes in the urbanization pattern driven by the public and the private sector are changing its dimension and characteristics. The state has traditionally provided extensive housing facilities since its main objective was to reduce the housing deficit, no matter the living conditions or the localization. But the emphasis on reducing the housing deficit neglected the impacts on the urban form and the spatial distributions of household, which resulted in high concentrations of low-income citizens in particular areas (Hidalgo, 2007). The private sector has also reinforced this spatial pattern, as medium and high-income citizens sorted to benefit from the amenities of the city centre and several suburban residential areas (Livert & Gainza, 2011).

[1]Golden and Min identify welfare maximization with the preferences of the median voter, but this may be a rather narrow interpretation, particularly for urban settings.

The SMA has a multi-level governance scheme within a highly centralized country. The metropolitan area is composed by 52 municipalities (*comunas*) that belong to the Metropolitan Region. There is no metropolitan authority, but the Regional Government serves the 47 municipalities of the SMA, as well as other rural *comunas* outside the metropolitan area. The Regional Government has limited autonomy as the regional executive is appointed by the national government and represents its interests. At the local level, *comunas* are legally autonomous but in practice decision-making capacity and autonomy are limited because local authorities are highly dependent on the central government funds. Local responsibilities include basic duties, such as planning and regulation, local ordinances, urban service delivery and so on.

Municipalities generate their own revenues through a combination of taxes: commercial licenses (34% of the total), property taxes (32%), circulation permits (11%) and other fees (OECD, 2013). The high dependence on commercial licences and property taxes reinforces income gap between wealthier and poorer areas since poorer comunas collect much less revenue from these. This pattern is further reinforced because low-income properties (usually, social housing) are exempt from paying the property tax. The Municipal Common Fund (MCF) is a horizontal transfer mechanism that works as an equalisation fund. Nevertheless, it barely compensates for the disparities generated by the revenues municipalities generate on their own because disparities are too large, and also because the MCF mainly accounts for operational expenditure (OECD, 2013). As a result, large income disparities persist, even after MCF transfers.

There are also different grants from the central government to the *comunas* to compensate for vertical fiscal imbalances and to decentralize the execution of local infrastructure programs.

Programs, data and methodology

For the empirical analysis, we considered three urban investment programs from the central government to the 52 *comunas* of the SMA over the period 2009-2017.

The Urban Improvement Program (*Programa de mejoramiento urbano*, PMU) finances investment projects in minor infrastructures and social equipment (basic health services, street lightning, paving, parks, green areas, sports grounds, community centres, etc.). The aim of PMU is to create employment and to improve the living conditions of the most vulnerable population. Consequently, 75% of funds are distributed depending on the regional unemployment rate, whereas the remaining 25% are devoted to emergency projects. Municipal governments select the projects they want to apply for and these are submitted to the Regional Government and the Regional Development Sub Secretary (SUBDERE), which are the institutions in charge for PMU. If the project proposal is selected, municipalities receive a transfer as part of the municipal budget.

The Neighbourhood Improvement Program (*Programa de mejoramiento de Barrio*, PMB) is focused on improving the living conditions of low-income areas by providing sanitation

Characteristics of Urban Investment Programs

	Decentralized Financing		**Centralized Financing**
	PMU	**PMB**	**PPP**
Aim: Improve the living conditions of vulnerable population	X	X	X
Requirement: To be approved by the National Investment System on socioeconomic evaluation basis	X	X	X
Assignment criteria: Formula based on the proposal and the local population characteristics			X
Responsible institution: Citizens' committees present projects to the Ministry of Housing and Urbanism			X
Responsible institution: The municipal government presents projects to the Regional Government	X	X	

services (drinking water, sewerage) and improving land conditions for residential use. Municipalities apply for PMB funds in a competitive process. The National Investment System evaluates project proposals, which are then forwarded to the SUBDERE to distribute PMB funds.

Participatory Paving (*Pavimentos Participativos*, PP) is intended to street paving. In this case, organized citizens' committees apply for PP funds and these committees have to co-finance between 5 percent and 30 percent of the construction costs, except for the most vulnerable committees and for 50 municipalities with the higher poverty rate. Municipal governments and the Ministry of Housing and Urbanism (MINVU) also fund construction costs. Applications are evaluated by the MINVU based on the committees' and municipalities' contribution, the neighbourhood age, the number of beneficiaries and technical considerations. We considered four groups of independent variables as potential determinants for the distribution of funds in these three programs: the socioeconomic conditions of the *comuna*; physical urban variables since the growth pattern of the city may influence the assignment of urban improvement programs; the presence of community-based organizations as a measure of local social capital; and electoral variables.

The variables related to the socioeconomic conditions of the *comuna* are *municipal revenues per capita; staff expenses per capita,* which is the expenditure in salaries for municipal staff per capita and it is regarded as a proxy for local governments' technical capacity to formulate projects when competing for funds; and textitpoverty, the percentage of people below the poverty line. The physical urban variables include the area's *density* and the *new housing space* constructed in the *comuna* as indicators of the growth pattern.

Two type of community-based organizations were considered: number of *associations per capita* and *neighbourhood associations per capita.* While the former is a proxy for the local social capital as it brings into a single variable the organizational density in the *comuna*, the latter reflects the presence of interest groups on urban issues, which could potentially free ride urban investment for their own benefit.

Last, political variables include: *coalition*, a dummy variable that takes the value 1 if the mayor is from one of the political parties of the central government coalition;*intendente*, a dummy variable that takes the value 1 if the mayor is from the regional government political party; and the *percentage of vote of the winning party* in municipal and national elections. The percentage of vote in municipal elections was considered a proxy for local governments' power to influence central government's decisions supported by their electoral results, whereas a high share of vote in national elections could be indicative of central government's strategic behaviour to compensate core areas.

Table 1: Summary Statistics

Variable	**N**	**Mean**	**Std.Dev**	**Min**	**Min**
PP	467	237037.2	380058.2	0	3444969
PMB	468	93630.51	286306.6	0	3100599
PMU	468	237477.3	191125.3	0	1218681
Intendente	468	0.22	0.41	0	1
Coalition	468	0.41	0.49	0	1
Winner Municipal election (%)	468	51.63	10.50	27.04	82.39
Winner National election (%)	468	54.39	11.06	17.80	79.43
New housing space (1,000 sq m)	468	78.70	116.59	0	762.23
Density	468	5165.48	4980.84	2.87	17566.86
Associations	468	209.60	205.97	15	2307
Neighbourhood associations	468	69.5	67.91	1	827
Municipal revenues	468	94.96	100.92	7.95	542.91
Staff expenses	468	54.52	30.96	16.29	210.83
Poverty	468	10.53	5.43	0	28

Note: All fiscal variables were adjusted to thousand pesos of 2017 and these are found per capita level to compare properly between comunas.

In order to test the influence of these variables, the following econometric model was estimated for each urban investment program:

$$Log(urban\ investment_{it}) = \alpha + \beta\mathbf{X_{it}} + \gamma\mathbf{Z_{it}} + \delta\mathbf{W_{it}} + \Upsilon\mathbf{V_{it}}$$

Where *urban investment* is at *per capita* level. $\mathbf{X_{it}}$, $\mathbf{W_{it}}$, $\mathbf{Z_{it}}$, $\mathbf{V_{it}}$ are vectors that group, *comuna, urban, social capital and political* variables, respectively. The variables are related with the area's socioeconomic conditions, the physical urban characteristics, community-based organizations and political factors.

The econometric model adopted a fixed-effects (FE) heteroscedasticity and autocorrelation robust estimation with municipal and annual time effects. The municipal fixed effects control for municipal-specific factors that are fixed over time, and the year fixed effects control for factors that vary over time but are common across all municipalities.

Robust standard errors were estimated clustering them at the municipality level to control for serial and spatial correlation.

Result Section

In Table 2 the results are summarized. According to our estimations, PMB and PMU are subject to different forms of electoral influence, whereas PP seems to be outside of political clout. Mayors belonging to the central government's coalition parties received, respectively, 70 percent and 30 percent more PMB and PMU funds than non-coalition localities, suggesting pork-barrel politics. In the case of PMU, the role of the *intendente* is also important for the assignment, since those *comunas* ruled by the regional government's political party obtained 50 percent more investment. The percentage of votes for the major is also a factor that affects PMB funds distribution. The latter result suggests majors' role as strongmen gaining funds for their constituents, since the higher the electoral share, the greater the influence they exert when competing for funds[2] . Last, national results are not relevant, thus the central government seems not to be considering its electoral prospects when distributing funds.

The two variables related with the local social capital, total associations and neighbourhood associations per capita are not significant for the distribution of urban investment in any of the three programs. This result indicate no sign of capture by organized interest groups.

Regarding the socioeconomic conditions of the *comuna*, the three urban programs are negatively related with municipal revenues per capita, showing a redistributive pattern in the assignment of funds, i.e., the less revenue raising capacity of the local government, the more funds it will get to compensate for the fiscal asymmetry. Nonetheless, only PP considers the rate poverty for the assignment of funds. This means that only the latter program seems committed to improve the living conditions of the most vulnerable population, despite being one of the alleged aims of the three programs.

[2] We also tested the influence of the *vote margin* instead of the *percentage of votes*, obtaining similar results. While vote margin reflects electoral competition, we believe the percentage of votes is a better proxy for majors' lobbying capacity (please note that vote margin and percentage of votes are strongly correlated).

Table 2: Fixed-effects estimation results

	Dependent Variable		
	(PMB)	(PMU)	(PP)
Intendente (dummy)	0.0835	0.444**	0.0520
	(0.394)	(0.184)	(0.148)
Coalition (dummy)	0.711***	0.306**	0.00579
	(0.180)	(0.119)	(0.118))
Winner municipal election (%)	0.0498***	-0.00200	0.00417
	(0.0133)	(0.00512)	(0.00593)
Winner presidential election(%)	0.00949	-0.000115	-0.000379
	(0.0188)	(0.00632)	(0.00782)
New housing space (1000 sq m)	0.0104**	-0.000477	0.000156
	(0.00474)	(0.00131)	(0.00199)
New housing space$\hat{2}$	-2.32e-05**	2.94e-07	8.65e-07
	(1.08e-05)	(1.92e-06)	(3.37e-06)
Density (ln)	-5.463**	-2234	-3.574***
	(2.301)	(1.743)	(1.204)
Associations per capita (ln)	-0.121	-0.123	0.155
	(0.269)	(0.129)	(0.157)
Neighbourhood associations per capita (ln)	0.235	-0.00685	-0.156
	(0.249)	(0.103)	(0.0988)
Municipal revenues per capita (ln)	-2.259***	-1.104*	-1.145*
	(0.722)	(0.659)	(0.613)
Staff expenses per capita (ln)	0.0378	0.610	-0.272
	(0.877)	(0.506)	(0.741)
Poverty (ln)	-0.0671	0.0413	0.397*
	(0.257)	(0.114)	(0.197)
Constant	17.99	5788	17.00*
	(14.19)	(-7.835)	(-8.862)
FE Municipalities	YES	YES	YES
FE year	YES	YES	YES
N	234	450	282
R-squared	0.329	0.284	0.306
Number of id	47	52	43

Robust standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Last, urban form variables also affect the distribution PMB and PP. Density is negatively related, i.e., investment in basic services and paving is concentrated in low density areas. In turn, PMB funds are channelled to new built-up areas where the construction of new housing space is concentrated. However, our estimations reveal a non-linear relationship, indicating an inflection point from which on investment tends to grow at a lower rate.

Implications for metropolitan governance

Our results yield important implications for the governance of the metropolitan area. Estimations reveal the existence of electoral concerns in the distribution of urban investment in two out of the three programs analyzed, since municipalities governed by political parties of the central government ruling coalition receive a significant greater proportion of funds than non-aligned *comunas* do. In the case of PMU, the significance of the *intendente* (regional governor) variable suggests that this program is concentrated in areas where mayors belong to the regional governor party, indicating a stronger preference for partisan municipalities amongst the benefitted areas.

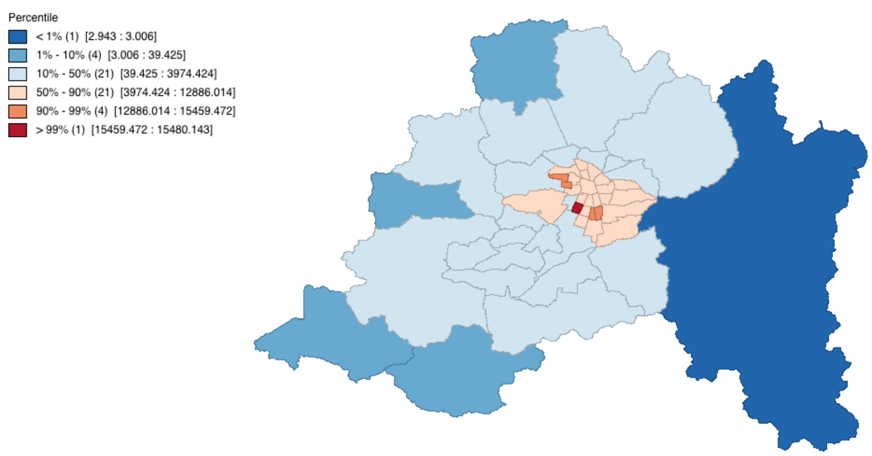
Nevertheless, not every investment flow seems akin to distributive politics, since the centralized PP program is free of electoral clout. We believe there are two reasons why decentralized programs are subject to political influence, whereas the centralized program is not. First, pork barrel politics is driven by local governments' influence in the competition for grants rather than centrals government's electoral strategic behavior, i.e., aligned mayors, encouraged by their local electoral results claim for their piece of cake. Such a view is supported by the significance of the variable electoral share in municipal elections, whereas national election results are not relevant. This result is consistent with Livert and Gainza (2018), who showed for the whole Chile that municipal electoral results give local politicians a stronger capacity to put pressure over the distribution of funds, even when the central government decides on disbursements. A major conclusion is that, when mayors act as strongmen knocking the central government's door, a decentralized investment program is rather exposed to political pressure than a centralized program.

A second reason for centralized investment to be free of political distortions is the role of social capital. PP funds are channeled through citizens' committees, thus reducing the margin of local governments to interfere in the distribution of funds. Since community based organizations are responsible for the applications, local governments have no chance to lobby for funds backed by their electoral support. Besides, there is no signal of capture by local interest groups, as the two variables related to social capital remain not significant in the econometric analyses for every program. Our results, thus, provide additional evidence on the importance of community-based organizations for the control and accountability of local governments.

There are other important conclusions to be drawn about the redistributive function of investment. Urban investment is likely to reduce spatial imbalances if it is allocated according to the socioeconomic conditions of the municipalities. The three programs analyzed have redistributive purposes as they aim to improve the living conditions of low-income areas that lack basic services. Our estimations indicate that municipalities with fewer revenues receive more funds, suggesting that the three funds reduce somewhat horizontal imbalances across *comunas*. However, if we consider the distribution within *comunas*, not every program is having the same impact. In fact, only PP seems to be focused on improving the living conditions of the most vulnerable population, as it is the only program in which investment is positively related to the poverty rate. An explanation for the underperformance of decentralized investment is that its redistributive function may be limited if it is mediated by local governments' electoral interests.

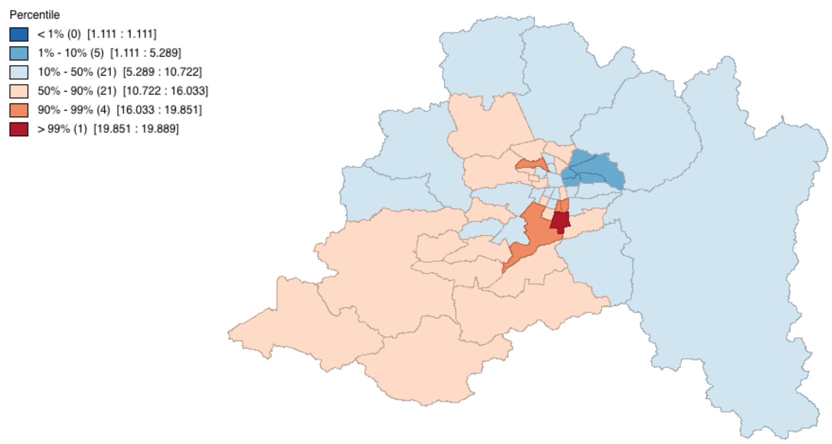
The allocation of public investment also affects the spatial growth pattern. As pointed, PMB is geared towards neighbourhoods where new housing space has been built, mainly because new areas lack the basic infrastructure that this program is aimed to. On the other hand, density is negatively related with PMB and PP, indicating that investment in sanitation services and paving is directed to lower-density areas. To some extent, these are the expected results since new-built, low-density areas often lack basic infrastructure. However, we should bear in mind that in Santiago, as well as in other Latin American metropolises, the density profile is related to the socio-spatial organization of the city. The richest municipalities of the northeast cone are characterized by low density, suburban areas, whereas the city centre and some poor *comunas* in the south and the northwest of the first urban ring have very high-density rates (Figures 1 and 2). In this sense, the evaluation of proposals should consider the particular socioeconomic conditions of the *comuna*, along with physical, urban form, variables.

Figure 1: **Residential density by *comuna***



The indications above suggests the importance of a metropolitan authority to tackle spatial imbalances and reduce the margin for arbitrary spatial allocation of funds. The current decentralized governance framework of the SMA offers potential benefits in terms of accountability by bringing decision-making closer to citizens and the responsiveness of service provision to local demands. The latter is particularly relevant in metropolitan areas characterized by strong socio-spatial disparities, as local residents' needs and preferences may differ significantly depending on the socioeconomic status of the area. However, a system organized in a set of small, fragmented municipalities also faces important limitations. First, large fiscal

Figure 2: **Poverty by *comuna***



disparities among local governments exist, in both revenue raising capacity and expenditures. The vertical (from central to local government) and horizontal (among local governments) transfer system barely compensates for imbalances between the revenues that municipalities generate on their own. An upper government tier could endorse better the redistributive function by taxing on a metropolitan-scale basis and distributing funds according to spatial equity principles.

Second, municipalities account for strong administrative, economic, social and environmental interdependencies that cannot be properly accommodated in a decentralized framework. Besides, there are several functions and services that surpass local jurisdictions' boundaries. While different formal and informal institutional mechanisms could be implemented to increase coordination across areas (voluntary cooperation agreements, special purpose agencies to provide services jointly, etc.), a metropolitan government seems a rather efficient solution to address interdependencies and internalize the externalities generated in local service provision (R. M. Bird & Slack, 2007). Third, a decentralized system is rather prone to distributive politics, since local governments' lobbying capacity seems the main source for bringing pork home. Consequently, a central authority would reduce the margin for partisanship in intergovernmental relations.

Alternatively, a two-tier governance framework made of a metropolitan authority and *comuna*-level local governments could take advantage of the agglomeration benefits of the upper tier, while retaining the flexibility of the bottom tier for urban service provision. Although, in principle, the current distribution of responsibilities between a regional governor and a set of municipal governments follows a two-tier scheme, in practice suffers from several caveats. On the one hand, there are issues that have a metropolitan-wide nature rather than regional, such as transportation, urban services, or strategic urban planning to improve the competitive position of the city. On the other, in the actual design, the regional governor is appointed by the central government, which opens the door for partisan concerns in the distribution of public goods. An elected metropolitan authority would certainly limit the scope for partisan favouritism, even though it is not fully free of political distortions.

Obviously, a two-tier structure raises additional concerns about the distribution of responsibilities between government levels, the efficiency loses that may engender if services are duplicated and the lack of transparency as responsibilities are diluted. As a general principle, the upper tier should be responsible for the provision of public services that are metropolitan in scope, generate externalities and show economies of scale, whereas the lower tier should be in charge of services that generate benefits only in its jurisdiction (see (R. M. Bird & Slack, 2007) for a tentative distribution of responsibilities in a two-tier model). Besides, the distribution of responsibilities should be clearly defined to avoid duplication of services and general confusion about who citizens are paying for and which tier is responsible for what. Nevertheless, if duties are clearly demarcated and taxes correctly specified among different government levels, a two-tier system is likely to render benefits in terms of economies of scale and scope at the metropolitan level, while retaining the flexibility and responsiveness advantages of local service delivery.

Concluding remarks

This paper has addressed the influence of political factors in the distribution of local investment from the central government to the municipalities of the Santiago Metropolitan Area. Considering the allocation of funds in two decentralized and one centralized investment programs, the paper has revealed that in decentralized programs distribution follows partisan criteria favoring aligned areas against non-aligned ones.

We believe our research contributes in four major ways to a better understanding of urban governance processes. In the first place, there is scant evidence in the academic literature on how partisan alignment shapes the distribution of funds across city areas, in spite of the implications it has for urban governance and the city's growth pattern. This paper is a first attempt, but a venue for further research is open.

A second lesson to be learned is how political influence is exercised in the distributive game. According to the analysis, local governments' lobbying capacity is a major force for the competition for funds, whereas the central disburser seems no to be looking for electoral returns when assigning resources. This bottom up influence explains why decentralized investment is rather subject to political interferences than centralized investment.

A third interesting result is the potential benefits of community-based organizations reducing the margin for a politically motivated, discretionary distribution of intergovernmental transfers. As discussed throughout the paper, the literature on participatory governance has signalled the benefits of civic engagement over the democratic process, the performance of public services and the responsiveness and accountability of local governments, although it also involves threats for local governance, mainly associated to the risk of capture by organized interest groups. Our analysis suggest no sign of capture and, besides, social capital acts as a control mechanism to limit local governments' influence over an arbitrary spatial allocation of funds. We believe the latter is a modest contribution to the academic literature since, to the best of our knowledge, no research has determined the potential role of the local social capital limiting pork barrel politics.

Last, the paper has approached the implications for the governance of the metropolitan area, discussing the benefits of a two-tier governance system. Although not completely free from political bias, a system made of a metropolitan authority and a network of local governments is likely to improve metropolitan governance by taking advantage of economies of scale in urban service provision, while retaining the benefits of a decentralized system.

References

- Ackerman, J. (2004). Co-governance for accountability: beyond "exit" and "voice". World Development, 32(3), 447-463

- Ahmad, E., & Brosio, G. (2009). Does decentralization enhance service delivery and poverty reduction? Edward Elgar Publishing.

- Andersson, K., & Van Laerhoven, F. (2007). From local strongman to facilitator: Institutional incentives for participatory municipal governance in Latin America. Comparative Political Studies, 40(9), 1085-1111.

- Andrews, R. (2012). Social Capital and Public Service Performance: A Review of the Evidence. Public Policy and Administration, 27(1), 49-67.

- Bardhan, P. K., & Mookherjee, D. (2000). Capture and governance at local and national levels. American Economic Review, 90(2), 135-139.

- Bird, R. M., & Smart, M. (2002). Intergovernmental fiscal transfers: International lessons for developing countries. World Development, 30(6), 899-912.

- Bird, R. M., & Slack, E. (2007). An Approach to Metropolitan Governance and Finance. Environ Plann C Gov Policy, 25(5), 729-755.

- Blas, A., & Ibarra, P. (2006). La participación: estado de la cuestión. Cuadernos De Trabajo Hegoa, (39)

- Brollo, F., & Nannicini, T. (2012). Tying your enemy's hands in close races: the politics of federal transfers in Brazil. American Political Science Review, 106(04), 742-761.

- Case, A. (2001). Election goals and income redistribution: Recent evidence from Albania. European Economic Review, 45(3), 405-423.

- Cox, G. W., & McCubbins, M. D. (1986). Electoral Politics as a Redistributive Game. The Journal of Politics, 48(02), 370-389.

- Dixit, A., & Londregan, J. (1996). The Determinants of Success of Special Interests in Redistributive Politics. The Journal of Politics, 58(04), 1132-1155.

- Dollery, B., & Wallis, J. (2006). Revitalizing the contribution non-profit organizations can make to the provision of human services. Int J of Social Economics, 33(7), 491-511.

- Faguet, J. (2008). Decentralisation's Effects on Public Investment: Evidence and Policy Lessons from Bolivia and Colombia. The Journal of Development Studies, 44(8), 1100-1121.
- Gaventa, J., & Barrett, G. (2012). Mapping the Outcomes of Citizen Engagement
- Golden, M., & Min, B. (2013). Distributive Politics Around the World. Annual Review of Political Science, 16(1), 73-99.
- Goldfrank, B. (2002). The Fragile Flower of Local Democracy: a Case Study of Decentralization/Participation in Montevideo. Politics & Society, 30(1), 51-83.
- Hidalgo, R. (2007). ¿Se acabó el suelo en la gran ciudad?: Las nuevas periferias metropolitanas de la vivienda social en Santiago de Chile. EURE (Santiago), 33(98), 57-75.
- Inchauste, G. (2009). Decentralization in Bolivia: has it made a difference? Does Decentralization Enhance Service Delivery and Poverty Reduction, , 161-191.
- Johansson, E. (2003). Intergovernmental grants as a tactical instrument: empirical evidence from Swedish municipalities. Journal of Public Economics, 87(5–6), 883-915.
- Jordán, R., Rehner, J., & Samaniego, J. L. (2010). Metropolitan panorama Latin America. Volume I: megacities and sustainability. Santiago de Chile: ECLAC.
- Kahkonen, S., & Lanyi, A. (2001). Decentralization and governance: does decentralization improve public service delivery?
- Khemani, S. (2010). Political capture of decentralization: Vote-buying through grants-financed local jurisdictions. Policy Research Working Paper, (5350)
- Knack, S. (2002). Social capital and the quality of government: Evidence from the states. American Journal of Political Science, , 772-785.
- Kramon, E., & Posner, D. N. (2013). Who benefits from distributive politics? How the outcome one studies affects the answer one gets. Perspectives on Politics, 11(02), 461-474.
- Kwon, H. Y. (2005). Targeting Public Spending in a New Democracy: Evidence from South Korea. British Journal of Political Science, 35(02), 321-341.
- Lessmann, C. (2012). Regional Inequality and Decentralization: An Empirical Analysis. Environment and Planning A, 44(6), 1363-1388.
- Lindbeck, A., & Weibull, J. W. (1987). Balanced-budget redistribution as the outcome of political competition. Public Choice, 52(3), 273-297.
- Livert, F., & Gainza, X. (2011). Socio-spatial inequality in a pro-growth city, Santiago de Chile (1990-2009). International RC21 Conference: The Struggle to Belong. Dealing with Diversity in 21st Century Urban Setttings, Amsterdam, The Netherlands.

- Livert, F., & Gainza, X. (2018). Distributive politics and spatial equity: the allocation of public investment in Chile. Regional Studies, 52(3), 403-415.
- Miranda, R. A., & Tunyavong, I. (1994). Patterned Inequality?: Reexamining the Role of Distributive Politics in Urban Service Delivery. Urban Affairs Review, 29(4), 509-534.
- Needham, C. (2008). Realising the Potential of Co-production: Negotiating Improvements in Public Services. Social Policy and Society, 7(2), 221-231.
- Oates, W. E. (1999). An essay on fiscal federalism. Journal of Economic Literature, 37(3), 1120-1149.
- OECD. (2013). Revitalising Chile's urban governance architecture. (pp. 141-210) Organisation for Economic Co-operation and Development.
- Ostrom, E. (1996). Crossing the great divide: coproduction, synergy, and development. World Development, 24(6), 1073-1087.
- Platteau, J. (2004). Monitoring elite capture in Community-Driven development. Development and Change, 35(2), 223-246.
- Putnam, R., Leonardi, R., & Nanetti, R. Y. (1993). Making democracy work. Civic traditions in modern Italy. New Jersey: Princeton University Press.
- Robinson, M. (2007). Does decentralisation improve equity and efficiency in public service delivery provision? IDS Bulletin, 38(1), 7-17.
- Rodríguez-Pose, A., & Ezcurra, R. (2009). Does decentralization matter for regional disparities? A cross-country analysis. Journal of Economic Geography, 10(5), 619-644.
- Rodríguez-Pose, A., & Gill, N. (2005). On the 'economic dividend' of devolution. Regional Studies, 39(4), 405-420.
- Rodríguez-Pose, A., Psycharis, Y., & Tselios, V. (2016). Politics and Investment: Examining the Territorial Allocation of Public Investment in Greece. Regional Studies, 50(7), 1097-1112.
- Rogoff, K. (1990). Equilibrium Political Budget Cycles. The American Economic Review, 80(1), 21-36.
- Sidel, J. T. (2005). Bossism and democracy in the Philippines, Thailand and Indonesia: towards an alternative framework for the study of 'local strongmen'. Politicising Democracy (pp. 51-74) Springer.
- Speer, J. (2012). Participatory Governance Reform: A Good Strategy for Increasing Government Responsiveness and Improving Public Services?
- Tavits, M. (2009). Geographically targeted spending: exploring the electoral strategies of incumbent governments. European Political Science Review, 1(1), 103-123.
- UN-HABITAT. (2010). State of the World's Cities. Bridging the urban divide (UN-HABITAT ed.). Nairobi, Kenya: UN-HABITAT.

- Weingast, B. R. (2009). Second generation fiscal federalism: The implications of fiscal incentives. Journal of Urban Economics, 65(3), 279-293.