

# When Are Federations More Unequal? The Political Economy of Interregional Redistribution in Developing Federations

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**Abstract** Why do some countries redistribute more to poorer regions than others? This paper explores which factors explain variation in the degree of interregional redistribution among countries between 1983 and 2010. The main argument is that interregional redistribution increases with the need and capacity of strong presidents to build territorial coalitions with governors from poorer regions and, by implication, decreases with the ability of strong governors in rich districts to resist pressures to extract resources from their units. Using a multilevel structural equation model (the Generalized Linear Latent Multilevel Model, GLLMM), the study analyzes these and competing claims on the determinants of interregional redistribution using original data from the subnational units of four types of cases, ranging from decentralized and federal to centralized, unitary countries. Empirical results indicate that the type of redistributive coalition between presidents and governors complement purely structural and institutional models to explain fiscal redistributive outcomes in the context of sharp regional inequality.

**Keywords** Inequality · Redistribution · Interregional redistribution · Federalism · Presidents · Governors

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## Introduction

Why do some countries redistribute more to poorer regions than others? How can we explain variations in interregional redistribution in different cases? Although all federations (and many unitary countries) adopt interregional transfers to redistribute resources between rich and poor regions, there are significant differences in the levels of redistribution effectively achieved in the different revenue-sharing schemes. In some countries, these transfers are highly progressive (they are collected from richer districts and transferred to poorer ones), while in others they are not (Rodden 2009: 3).

Tensions between central authorities and subnational units on how much interregional redistribution is desirable and how much subnational fiscal autonomy the different states may enjoy, particularly rich ones, are on top of the political agenda in some developing countries such as Argentina, Brazil, Bolivia, India, Nigeria, and Russia, as well as in some developed democracies, such as Belgium, Canada, Italy, Spain, and the UK. In many of these cases, wealthier regions (such as Catalonia, Alberta, Delta state, Santa Cruz, Buenos Aires, or São Paulo) complain that they are being exploited by poorer regions. Why, under conditions of very high interregional inequality, do rich districts fail to dominate redistribution if they are the most powerful states? On the contrary, less developed units demand more revenue to fulfill the functions they are responsible for, claiming that rich provinces have imposed fiscal institutions biased against them. Why do poor units in these federations fail to seize the rich if they are usually more numerous?

Several authors have long claimed that federal countries and fragmented political units tend to produce less redistribution and, as a consequence, more inequality than unitary cases (Wildavsky 1984: 68; Lowi 1984: 379; Rodden 2009: 2–3; Beramendi 2012: 4). The main reason is that federalism is believed to be a political regime that institutionalizes veto points that enable defenders of specific territorial interests to block nationwide redistribution (Rodden 2009: 3; Beramendi 2012: 5–6). In particular, federalism is an institutional setting that empowers rich regions to constrain centralized transfer systems because they attempt against their own interests (Beramendi and Díaz-Cayeros 2008: 1).

Despite this widely held agreement in some of the literature, several studies have documented the enormous variation in the degree of redistribution achieved in developed federal democracies (Obinger et al. 2005) or in the redistributive power of the central government (Barberán et al. 2000; Bayoumi and Masson 1995; Castells et al. 1981; Domenech et al. 1999; Duboz and Nicot 1998; MacDougall 1977; Mélitz and Zummer 1998).<sup>1</sup>

In this paper, I explore which factors explain the variation in the actual degree of interregional redistribution among countries and why some of them increase interregional redistribution over time while others reduce it. This research follows recent developments in the literature on the political economy of federal redistribution (Alesina and Spolaore 2003; Wibbels 2005; Beramendi 2007, 2012) but with a focus

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<sup>1</sup> Most of these studies analyze the redistributive power of the central government, which expresses the central government's capacity to reduce regional disparities in terms of income. The redistributive power in a given country is estimated out of the elasticity coefficients of regional revenue and expenditure in relation to their initial revenue, which is the revenue existing prior to public sector action.

on developing countries. Studying redistribution in developing countries is relevant not only because there is fewer research on them than in developed cases but also for some theoretical reasons. Political struggles among regions are present in most developing and developed federations. But a key difference between them is that “the fiscal structures of developing federations are dominated by horizontal redistribution, that is to say, by transfers between territories as opposed to transfers between people with different income levels” (Díaz-Cayeros 2006; Beramendi and Díaz-Cayeros 2008: 2). The weak redistributive capacity of tax systems (or the welfare programs) put interregional redistribution at the core of the redistributive struggle in developing federations.<sup>2</sup>

The main argument in this paper is that although structural and institutional factors define the basic centrifugal or centripetal characteristics of federal systems (Beramendi 2012), powerful presidents and governors (in electoral and legislative terms) may alter (intensify or weaken) the amount of interregional redistribution achieved in developing democracies. More precisely, the distribution of electoral power between presidents and governors and the number of partisan allies in the developing or more developed regions of the country interact with political elites’ structurally induced preferences over redistribution and federal institutions to explain variation and change in interregional progressive transfers. These configurations define the type of coalitions, progressive/redistributive or regressive/conservative, between presidents and governors.

Changes in interregional redistribution are not only the consequence of time-invariant political institutions (e.g., presidentialism, electoral rules, and overrepresentation) as most of the literature for developed cases has claimed but also the result of political struggles and coalitions built among powerful actors who have different structurally induced preferences over redistribution. These factors are particularly relevant in developing countries, where inequality among regions is sharper, institutions tend to be more flexible (and changing), partisan structures and partisan ties are weaker (or weakening), and clashes among contending national and regional elites tend to be more direct or personalistic.

In order to analyze these claims, I selected four types of developing cases to have significant variation in all key variables over time, particularly in terms of the institutional structure of the state: decentralized federal (Argentina and Brazil), more or less centralized federal (Mexico), more or less decentralized unitary (Colombia), and centralized unitary cases (Chile).

I discuss the theoretical literature on the topic and the main contribution of this paper in the next section. Based on this review, I present the main theoretical claim in the following one. In the third section, I define and operationalize the variables and provide the data sources for the main and other competing hypotheses. I detail the methodological strategy to analyze the data and put forth the empirical findings in the fourth. I discuss the results and present the comparative implications in the final section.

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<sup>2</sup> This is a key reason for studying interregional redistribution in the five selected cases. The lack of comparative data and time series for analyzing interpersonal redistribution in these countries is another important motive.

## State of Research

Although a large literature studies the determinants of welfare or social spending across countries (see Bradley et al. 2003, for a review), fewer works analyze what accounts for the variation in interpersonal redistribution,<sup>3</sup> and even fewer studies explore the causes of interregional redistribution, particularly in developing nations. Despite their political relevance, how different federations (and unitary countries) reach and continually renegotiate the institutional arrangements to distribute funds among regions is a frequently ignored aspect in the literature on income inequality and redistribution. Some attention has been given to the relationship between federalism and the distribution of grants (Holcombe and Zardkoohi 1981; Grossman 1994; Dixit and Londregan 1996, 1998; Persson and Tabellini 1996) as well as institutions and interpersonal transfers (Persson and Tabellini 2000), but much less is known about federalism and changes in interregional redistribution (Rodden 2009: 3).

Although some studies have showed enormous variation in redistribution in different cases,<sup>4</sup> there is very little we know about the main causes of cross-country differences. The public economics literature views transfers and grants as “efficient responses by benevolent governments to potential inefficiencies associated with externalities and inter-jurisdictional inequity” (e.g., Boadway and Flatters 1982; see Rodden 2009: 12). However, as Rodden (2009: 12) claims, the efficiency arguments that may explain the Canadian equalization system should also apply to the USA as well, but such a system has not emerged there.

Stressing the limitations in this literature, Rodden (2009, 2010) compares the redistributive power of the intergovernmental transfer schemes of both developed and developing cases, including two Latin American cases, Argentina and Brazil. His main argument is that a national low-income coalition in federations in the twentieth century favored progressive intergovernmental transfers. However, presidentialism and a territory-based upper chamber undermined the creation of such a national low-income coalition that favors progressive intergovernmental transfers both in Argentina and Brazil (as well as in the USA) (Rodden 2009: 14, 2010: 13). Argentina and Brazil, as Rodden claims, are both presidential cases and have overrepresented chambers, but they are very different federations in terms of their interregional redistribution schemes. I compare these two cases with others in the region to show

<sup>3</sup> Some of the most relevant works in this literature explore whether democratic institutions (since the classic work of Meltzer and Richard 1981), electoral rules (Austen-Smith 2000; Persson and Tabellini 2000; Iversen and Soskice 2006), constitutional veto points (Bradley et al. 2003), the strength of the working class and leftist political parties (Hicks and Swank 1984; Boix 1998; Huber and Stephens 2001; Pontusson et al. 2002; Bradley et al. 2003; Kwon and Pontusson 2003, unpublished; Iversen and Soskice 2006), unionization and wage-bargaining centralization (Wallerstein 1999; Pontusson et al. 2002; Bradley et al. 2003), welfare spending (Bradley et al. 2003), and previous levels of inequality (Meltzer and Richard 1981; Kenworthy and Pontusson 2005; Iversen and Soskice 2006) have a systematic effect on interpersonal redistribution. Other works find that capital mobility and immigration (Alderson and Nielsen 2002); development (gross domestic product (GDP) per capita); education (Nielsen and Alderson 1995); or demographic variables, such as female participation in the labor force and the proportion of female-headed households (Bradley et al. 2003), have an impact on interpersonal redistribution.

<sup>4</sup> Other studies report large variation in how grants are distributed depending on the type of grant under analysis. Instead of focusing in a particular type of grant, this paper includes all transfers (legally mandated and discretionary) from the central government to subnational units in the operationalization of interregional redistribution (see below).

there is large variation in the amount of redistribution achieved in the different presidential systems in Latin America and even among overrepresented ones.

Gibson (1997) and Gibson and Calvo (2000) also argue that federalism and political institutions, such as legislative overrepresentation both in the Upper as well as in the Lower Chambers of Congress, play a role in the politics of redistribution. Gibson's early work on the topic (1997) shows that the Peronist party in Argentina has constituted a redistributive coalition that transferred funds to resource poor, but vote-rich, regions. Gibson and Calvo (2000: 32) apply this argument to market reforms in this country, claiming that "structural reforms were concentrated primarily on economically developed regions of the country, while public spending and patronage in economically marginal but politically overrepresented regions sustained support for the governing party." Despite their contributions, no work has, to my knowledge, brought into the analysis the role of coalition building at subnational level according to regional leaders' preferences regarding centralization and redistribution (González 2012). Investing in less developed districts is not only more efficient for presidents in terms of the political return for each invested dollar. Governors from less developed districts, unlike their counterparts from richer states, tend to support redistributive presidents because they prefer and need more redistribution.

Other scholars point to the territorial distribution of income rather than the endogenous institutional variables as responsible for the constitutional choices and institutional designs in federal arrangements (Bolton and Roland 1997; Alesina and Spolaore 2003; Wibbels 2005; Beramendi and Díaz-Cayeros 2008; Beramendi 2007, 2012). In particular, Beramendi (2007, 2012) argues that once a fiscal decentralization institutional design is selected and set, it will maintain and reinforce the same patterns of inequality that facilitated its emergence in the first place. Historically, powerful politicians in unequal federations, such as Argentina and Brazil, both democratically elected and authoritarian, increased overrepresentation and created or modified transfers systems that favored the less developed and less populated provinces to strengthen their governing coalition. Hence, the territorial structure of inequality and these political institutions defined the basic redistributive characteristics of federal systems. But the claim that I make in this paper is that democratically elected presidents and governors may also alter (intensify or weaken) these historical redistributive features of the federal systems.

Some of these authors put poor and rich citizens' preferences at the front of the theoretical argument to explain the degree of vertical and horizontal redistribution (Beramendi and Díaz-Cayeros 2008; Beramendi 2012). Beramendi (2007, 2008) and Beramendi and Díaz-Cayeros (2008) are primarily worried about the relative centralization of the tax-transfer system and have much less to say about the progressivity of interregional transfers (Rodden 2009: 13). This work concentrates on interregional redistribution (and not on interpersonal redistribution, mostly due to the lack of available data), which is at the center of the redistributive struggle in developing federations and relies on political elites' preferences, competition, and alliances rather than on the citizens' opinions across states.

This research follows several studies that empirically analyze the political economy of the central governments' interregional redistributive efforts (Rao and Singh 2001; Díaz-Cayeros 2004; Beramendi and Díaz-Cayeros 2008; Rodden 2009; 2010; Beramendi 2008). By the main lines of these works, it claims that structural and

institutional factors define the basic centrifugal or centripetal characteristics of federal arrangements (Beramendi 2012). These studies focus on the composition and weight of the Upper Chamber in national policymaking, the malapportionment (I prefer to use the term overrepresentation) of Lower Chambers,<sup>5</sup> and the territorial integration of party structures (Beramendi and Díaz-Cayeros 2008: 15). Although this study supports the argument that overrepresentation, electoral rules, and party systems are crucial to understand the politics of redistribution in federal countries, it also claims that these are relatively time-invariant (static) institutional variables (especially overrepresentation) which cannot account for changes across similar countries and over time in redistribution. As the paper will show, there has been substantial variation over time in the amount of interregional redistribution within each of the selected cases and this is left unaccounted for in most of the existing models. To overcome this limitation and to contribute to the growing literature devoted to the study of the determinants of inequality and redistribution in developing democracies, I rely on more sensitive, context-specific variables that may contribute to account for changes over time. Instead of depending solely on structural and institutional factors, this work includes redistributive coalitions between presidents and governors into the equation to explain fiscal redistributive outcomes in contexts of sharp regional inequality and more recurrent institutional change.

## Presidential and Gubernatorial Preferences Regarding Redistribution

As a general principle, I argue that political elites will support the fiscal structure that best serves their electoral interests (Beramendi 2012: 10; O'Neill 2005). But decisions on fiscal structures depend on very different preferences about redistribution. In this regard, I claim that structural determinants shape national and regional politicians' preferences regarding redistribution. In Beramendi's (2012: 33) words, "preferences for fiscal structures depend critically on the geography of income inequality." This is so because "[t]he distribution of wealth across regions (...) influences the degree to which there are regional demands for redistribution" (Wibbels 2005: 169).

Presidents prefer centralization and no distribution as their first-order strategy. If they control enough votes and congressional seats, they would prefer to centralize and to prevent redistributing revenue. But presidents usually need to redistribute revenue to secure regional votes, build up congressional majorities, and form territorial governing coalitions. To do that, they reallocate federal funds across the territory. Hence, redistribution is the presidents' second-order strategy. But presidents do not redistribute to all districts uniformly: when they reallocate federal funds, they prefer to redistribute to less developed districts. There are three main reasons for them to do this. First, these districts prefer and need redistribution (I develop this idea further below). Second, political leaders from less developed districts tend to be weaker political challengers to the president than those from more developed and populated districts (who control

<sup>5</sup> On the effect of overrepresentation on the distribution of federal grants, see also, among others, Atlas et al. (1995), Lee (2000) as well as Rodden (2002), Arretche and Rodden (2004) unpublished, for Brazil, Gibson and Calvo (2000), Gibson, Calvo, and Falletti (2004), (Lodola 2005, 2010, unpublished), and Gordin (2006) for Argentina.

more money and votes). Third, the political return for each invested dollar is larger in these units rather than in more developed ones.

Governors, as a general principle and as a first-order strategy, prefer no redistribution either. They would rather administer their own wealth rather than having a central government taking fiscal decisions for them. However, this general principle varies significantly across provinces depending on their districts' structural characteristics, such as their taxing capacity, fiscal autonomy, and main economic activities (e.g., industrial production). Provincial executives from more developed states with large taxing capacity prefer, as a first-order strategy, to tax and administer their own wealth rather than having a central government in charge of collecting and redistributing it to other subnational units (which is their second-order strategy) (Beramendi 2007: 785).<sup>6</sup> They would rather prefer a relatively weak central government in order to prevent redistribution to less developed regions. They would also benefit from a weaker central government because they may have more leverage and influence for extracting resources (as well as other privileges or concessions) from it in a one-to-one basis.

On the contrary, less developed and more fiscally dependent provinces prefer more redistribution as their first-order strategy. They usually do not have enough own revenue to comply with all the functions they are responsible for (and the social needs they usually face in their districts) and favor a central government capable of extracting resources from richer districts and redistributing wealth to them. Unlike their counterparts from richer districts, they support a redistributive president. They want subnational units with less fiscal authority in relation to tax collection (rather than in spending, where they would rather have much leeway), to prevent stronger units to have large autonomy. As a second-order strategy, they would support to tax and administer their own wealth.

## Hypotheses

All in all, and rephrasing Beramendi (2012: 42–43), interregional redistribution in unequal federations is a positive function of the need and capacity of strong presidents to build up territorial coalitions with governors from poorer regions (the progressive/redistributive coalition) and, by implication, a negative function of the ability of strong governors in rich districts (the regressive/conservative coalition) to resist their pressures to extract resources from their units.

When presidents are strong, they will be more likely to craft territorial governing coalitions with poorer districts. After all, governors from these districts prefer and need redistribution, investing in them is more efficient (in terms of the political return for each invested dollar), and they tend to be weaker political challengers to the president than governors from more developed districts. Stronger presidents in developing federations would favor the progressive/redistributive coalition, increasing transfers to less developed districts and reducing allocations to richer districts. Weaker presidents, on the contrary, would be less capable of resisting pressures from larger and more

<sup>6</sup> I include tax autonomy (or authority) into this discussion to stress why less developed provinces do not have it as a first-order preference as the more developed do. This discussion has implications for provincial preferences over redistribution.

**Table 1** Presidential and gubernatorial power and interregional redistribution

	Stronger president	Weaker president
Strong governors in poorer districts	Interregional redistribution	Distributive tensions
Strong governors in richer districts	Distributive tensions	Regional concentration

developed districts. Governors from these districts would press the president to reduce redistribution. When presidents are weak, the regressive/conservative coalition will be more likely to win.

Strong governors from developed districts would struggle against presidents and governors from poorer districts to reduce interregional redistribution and administer their own wealth. Governors from less developed districts, on the contrary, would favor it, as they would get national transfers financed mainly from richer districts.

*Ceteris paribus* then, I expect that changes in interregional redistribution will be conditional on the distribution of electoral power and the type of district: strong presidents will redistribute more to poorer districts and less to richer ones (H1); strong governors from developed districts would resist interregional redistribution (and intensify regional concentration), while strong governors from less developed districts would favor it (H2).

Distributive tensions will increase but the status quo in terms of interregional redistribution will prevail when both presidents and governors in richer districts are strong or when presidents are weak and governors in poorer districts are strong (see Table 1).

So far, within this theoretical argument, the degree of interregional redistribution depends mostly on the distribution of electoral power and the degree of interregional inequality. Political parties have been absent until now. In addition to the abovementioned conditions, we should expect more redistribution when presidents have a larger number (or share) of their partisan allies in the developing regions of the country and fewer in richer states. Under this setting, interregional redistribution and partisan ties should reinforce each other. On the contrary, we should expect less interregional redistribution when presidents have a smaller number of their partisan allies in developing districts or more allies in developed states. If presidents are weak and they have a larger number of partisan allies in richer districts, we should expect more regional concentration (and interregional inequality to rise) (see Table 2).

Distributive tensions will mount but the status quo will prevail in terms of interregional redistribution when presidents are strong but the number of partisan governors is larger in richer districts, or when presidents are weak and the number of allies is larger in poorer districts.

**Table 2** Presidential power, number of allied governors, and interregional redistribution

	Stronger president	Weaker president
Larger number (or share) of allies in poorer districts	Interregional redistribution	Distributive tensions
Larger number (or share) of allies in richer districts	Distributive tensions	Regional concentration



## Main Variables

The main dependent variable is the *Index of Interregional Redistribution* (IIR). The IIR was estimated based on the literature on the redistributive power of the central government.<sup>7</sup> This index has not been calculated, to the best of my knowledge, in Latin American countries. It measures the central government's ability to reduce regional disparities in terms of income, analyzing the change in the Gini coefficient before and after transfers. To obtain the IIR, I calculated the following:

- i. Subnational units' initial revenue, which is their own revenue per capita (without national transfers)
- ii. Subnational units' final revenue, which is the sum of their initial revenue per capita and national transfers per capita (see details in Table 2, online Appendix)
- iii. A Gini coefficient for each state' initial and final revenue, for each country, and each year in the time series.
- iv. The IIR, for which I subtracted the final income Gini to the initial income Gini. The IIR reports this difference in the Gini coefficients before and after transfers. If it is positive, there is redistribution.

Most of the literature on the redistributive power of the central government in developed countries uses the GDP per capita of the state as the main measure of states' initial income (see Rodden 2009: 6). I use subnational units' initial *own* (current and capital) *revenue* for two main reasons: first, this is a good proxy of the wealth the district produces on its own (i.e., their productive and/or extractive capacity) and, fundamentally, the revenue it can collect autonomously, without the distributive intervention of the federal government (which is exactly what we want to measure). Of course, the federal government's distributive intervention depends on constitutional or legal frameworks that determine how tax authority is distributed in a country, being it federal or unitary. But this is precisely what I want to address: how much revenue is in the hands of each district and how much the central government redistributes among them.

Second, a large share of some states' total GDP in developing federations, particularly the poorest and the least developed, depends heavily on federal transfers.<sup>8</sup> Thus, if we measure their initial income as their GDP per capita, we are including in our measure of GDP the actual impact of federal transfers. In order to avoid serious endogeneity, I use their own current and capital revenue as a better measure of their initial income.

<sup>7</sup> A large literature measures the redistributive capacity of the central government, since the early MacDougall Report 1977 to more recent works (e.g., Sala-i-Martin and Sachs 1992; Bayoumi and Masson 1995; Mélitz and Zumer 1998; Barberán et al. 2000). There are also works measuring interpersonal redistribution that use a similar estimation strategy but using a different unit of analysis (individuals' final income instead of governments' transfers) (e.g., Bradley et al. 2003: 196; Iversen and Soskice 2006: 172).

<sup>8</sup> Federal transfers account for 75 % average of the total revenue, or more (reaching in some cases over 90 %), for the entire series (1983–2011) in almost half of the Argentine provinces (10 out of 24: Catamarca, Chaco, Corrientes, Formosa, Jujuy, La Rioja, Misiones, San Juan, San Luis, Santiago del Estero, and Tucumán), three Brazilian states (Acre, Amapá, and Roraima), all regions in Chile, four Colombian departments (Amazonas, Guainía, Vaupés, and Vichada), and six Mexican states (Campeche, Chiapas, Hidalgo, Tabasco, Tlaxcala, and Yucatán).

To sum up, the states' own revenue is a better proxy to study federal redistribution in developing nations. The correlation between the two measures of redistributive power (the Gini measured with states' own revenue per capita and GDP per capita as their initial income) is 0.0839, indicating that the two indices are not measuring the same and that they are not being related to a similar theoretical construct.

To calculate the IIR, I use *total* (capital, current, and social) federal transfers to each district. Federal transfers include legally mandated (also called automatic or earmarked) funds,<sup>9</sup> discretionary transfers (non-earmarked), and budget allocations made by ministries of the federal executive in the provinces or states (such as infrastructure, housing projects, and social plans). Although revenue-sharing arrangements are relatively sticky and they do not change much from year to year, most of the other transfers change substantively across time. Hence, the IIR shows a lot of variation across cases and time (see Fig. 1).

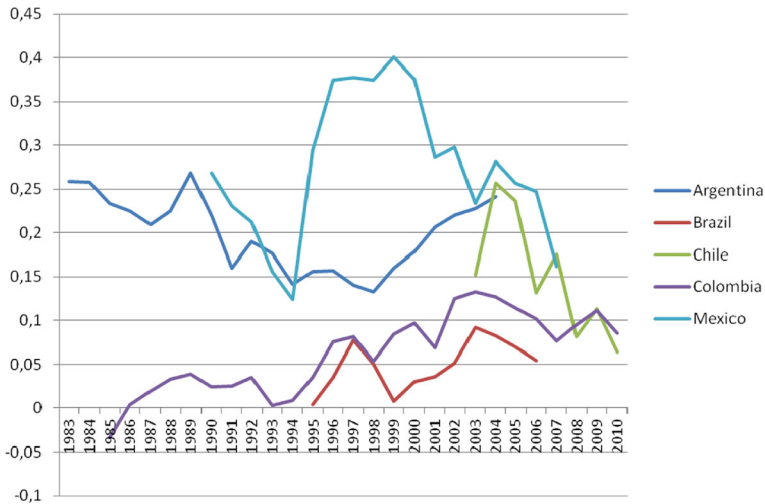
Subnational governments' revenue is divided into states' own (or *initial*) current and capital revenue and total revenue (including transfers from the central government) (defined according to how statistical agencies in each country report it, see Table 2, online Appendix, for a general description of the main variables and data sources and the online appendix for more details on the composition of states' initial and final revenue). In this particular aspect, the literature analyzes how specific transfers, grants, and funds produce specific impacts in terms of economic convergence, programmatic results, or different kinds of distortions.<sup>10</sup> As a result, we seem to have a better understanding of the effects of specific redistributive policies rather than on the politics of redistribution. I analyze total transfers and propose a general argument to fill up this gap.

The main independent variables are *presidential electoral support*, *gubernatorial partisan power*, and *number (and share) of allied governors*. Political power can be a very diffuse concept but, according to the objectives of this work, the power of the president is the capacity of the federal executive to take action and depends on the institutional capabilities given by the constitution and the legal framework (Shugart and Carey 1992; Negretto 2009), his electoral and partisan power (Shugart and Carey 1992; Mainwaring and Shugart 1997; Coppedge and Mejía 2001), and his popularity or public support (Neustadt 1991). The institutional dimension has remained quite stable for most of the period under analysis in the selected cases. The other dimensions have more change over time. The main problem with the data used to measure them as well as with public support data is that they are not available for all the cases and years in this study. I selected the share of votes as a proxy for presidential power because it is readily available and it is easy to compare across countries and over time. Future research could include more sophisticated measures, including the partisan power and popularity of the presidents. Presidential electoral support is measured as the share of votes that the presidents' electoral coalition got in national elections.

When I use the concept of gubernatorial power in this article, I am basically referring to the governors' electoral resources (or their ability to get votes and gain or retain

<sup>9</sup> Regulated by the revenue-sharing laws in the different countries (see Table 2, online Appendix).

<sup>10</sup> Bagchi 2003; Bosch et al. 2010; Cappelen et al. 2003; Castells and Solé Ollé 2005; Coulombe and Lee 1995; de Oliveira 2008; Garrido and Sotelsek 2002; Maciel et al. 2008; Martínez-Vazquez and Timofeev 2010; Porto 1994; Ramakrishnan and Cerisola 2004; Rangarajan and Srivastava 2004.



**Fig. 1** Index of interregional redistribution (IIR), yearly values (1983–2010). Source: author’s calculation based on official data from national statistics offices (see data sources in the Appendix)

popularity among voters) and their capacity to influence policymaking in the state assembly (King and Cohen 2005: 225) or the bill approval process (Kousser and Philips 2012: 2). More precisely, gubernatorial partisan power encompasses two main dimensions: first, the governors’ electoral power (share of votes in the election) and partisan control over the legislature (share of seats in the assembly and whether the main party in the legislature is the party of the governor, coded as 1 in case they are the same and 0 otherwise);<sup>11</sup> and second, how politically linked governors are to the federal government (I include a dummy variable for cases in which presidents and governors are in the same governing coalition, coded as 1 in case they are politically allied and 0 otherwise).<sup>12</sup> The number of allied governors of the president is the number of allies in both developed and developing states. The *share of allies* is the number of allied governors in each region, divided by the total number of governorships in the region. I coded the variable ally as 1 if presidents and governors are in the same governing coalition in a given year and 0 otherwise. The coding was completed during fieldwork in three countries (Argentina, Brazil, and Colombia) and was based on official electoral

<sup>11</sup> These variables do not take into account the fact that party control in subnational legislatures can change over time and during the governor’s term in office, especially in contexts with high levels of party factionalization.

<sup>12</sup> The index of gubernatorial power is a composite measure of all the aforementioned shares and dummies. Dummies contribute 0.5 points to the index in case they are coded as 1, to balance the effect of each measure. I am assuming that a 50 % share of votes received by the governor, a 50 % share of the seats in the state legislative controlled by the governor’s party, whether the main party in the legislature is the party of the governor and whether the president and the governor are in the same governing coalition all weight equally in the index. The maximum possible theoretical value is 4, but since the dummies are coded 0.5 instead of 1, the maximum possible value is 3 and the minimum is 0. I calculated the average value for each year and for all governors and classified the average partisan power of governors (a single measure for each year and each country). The gubernatorial partisan power index is “very high” when values range between 3 and 2, “high” for values between 2 and 1.6, “medium” for values between 1.6 and 1.4, “low” for values between 1.4 and 1, and “very low” for values less than 1.

data, information from newspapers, and interviews with provincial experts in each of the countries.

In structural terms, we can classify districts according to their demography, development level, and factor endowments. Here, I use a series of control variables for each subnational unit: population, per capita gross geographic product (GGP), regional poverty (number of people or families below poverty line or with unsatisfied basic needs), and industrialization (state industrial gross domestic product). These variables are measured at the provincial/state level. I also construct a simplified classification of provinces according to their structural characteristics. I divide the federation into two main regions, as Gibson (1997) and Gibson and Calvo (2000) do. I labeled them developed<sup>13</sup> and less developed interior provinces.<sup>14</sup> I include dummy variables for each of these two categories. I also included some national structural controls (e.g., economic growth), which are some of the key variables that the literature considers critical determinants of inequality levels (Roine et al. 2009).

## Alternative Hypotheses

An alternative, though complementary, explanation along the lines of Beramendi's (2012: 12–13) is that a centrifugal system of representation should be associated to less interregional redistribution. Such a system is characterized by highly overrepresented legislative chambers, relatively weak nationalized elections, and highly fragmented party systems with a weak national leadership. In contrast, lower overrepresentation and relatively stronger national party organizations define a system of centripetal representation, which should be associated to more redistribution. For the author, under a centrifugal representation, there is little or no salience of national elections, local leaders focus on the protection of unit-specific interests, the costs for regional elites to challenge national parties are very low, and federal politics become a conflict about the distribution of resources among territorial units. These circumstances create very narrow windows for interregional redistribution (Beramendi 2012: 13). According to this argument, we should expect more redistribution in more nationalized and less fragmented party systems as well as in less overrepresented federal systems.

To measure *overrepresentation* I use the Loosemore-Hanby index of electoral malapportionment (Samuels and Snyder 2001; Calvo and Murillo 2004), which is the proportion of national deputies from a given province (state or department) over the total provincial population. For Rodden (2009: 15–16), in very overrepresented federal systems, the strategy of the president putting together the cheapest possible winning coalition in Congress includes poor and small jurisdictions. Hence, more overrepresentation should be associated to more interregional redistribution when the less populated districts are mainly poor. For Beramendi, more overrepresentation should be empirically associated to less interregional reallocation because elites from richer states will constitute a blocking minority during negotiations of redistributive

<sup>13</sup> In Argentina, this region includes the provinces of Buenos Aires, Córdoba, Santa Fe, and the Federal Capital. In Brazil, it encompasses all the Southern region states and the Federal District. In Colombia, the departments of Antioquia, Atlántico, Bogotá, Santander, and Valle del Cauca. In Mexico, the DF, Campeche, Chihuahua, Nuevo León, and Quintana Roo.

<sup>14</sup> This region includes all the other provinces, states, or departments.

initiatives. This works as a logic of local strongholds against the logic of integrated national parties (Beramendi 2012: 42–43).

Following the logic of this argument, more fragmented and less nationalized party systems will be associated to less interregional redistribution. According to Beramendi and Díaz-Cayeros (2008: 16), in a territorially integrated party structure, opportunistic behavior by local incumbents is likely to be constrained and national policies will reflect less their specific interests. National party elites will not only monitor and punish deviant regional party officials but also “facilitate political exchanges in which regional executives renounce their capacity to veto national policy in exchange of influence within the party shaping national policy.” To measure party system fragmentation, I use the *effective number of parties*, calculated following Laakso and Taguepera’s (1979) formula (data from Coppedge (2007)). *Party system nationalization* is calculated following Jones and Mainwaring’s (2003) formula.<sup>15</sup>

It is not clear what the expected outcome would be in countries that combine relatively nationalized and weakly fragmented party systems (or cases in which these variables increase over time) with large overrepresentation (such as Argentina, and Chile to a lesser extent). Argentina and Mexico stand out as the two of the selected countries with the least fragmented and most nationalized party systems (together with Chile; see Table 1, online Appendix). Accordingly, these two cases should have centripetal systems of representation. However, it is less clear how overrepresentation interacts with the former two variables: in Argentina overrepresentation is high, relatively lower in Chile, and much lower in Mexico. In the empirical analysis, I run different models to test the effect of these variables in the different cases.

Most of the abovementioned theoretical arguments claim that parties matter when trying to account for interregional redistribution. But few of these works (if any) take into consideration parties’ ideological positions. We can incorporate an alternative (and to some extent complementary) argument: as a general principle, we could argue that left-leaning parties favor more redistribution, being it interpersonal or interregional. On the contrary, right-leaning parties try to prevent it (see among others, Iversen and Soskice 2006; Kemmerling and Bodenstern 2006). To check the influence of ideology on interregional redistribution, I coded the party of the president in a continuum from 1 (right) to 5 (left), including centrist positions (2 center right, 3 center, and 4 center left).

## Case Selection and Data

I use yearly aggregated data for all the selected countries and data for all the provinces or states of the three main federations in the region, Argentina, Brazil, and Mexico, and the regions and departments in the two unitary cases, Chile and Colombia. I cannot calculate measures of gubernatorial power in the Chilean case, as governors are not elected (they are nominated by the president), so this case is excluded from the second part of the analysis. I selected the three major federations in the region and two unitary countries to have significant variation in all key variables over time. The period covered

<sup>15</sup> For Colombia, I use data from Battle and Puyana (2011), who calculated the index based on Mainwaring and Jones’s (2003) formula.

for each of the variables oscillates between 1983 and 2011, depending on the data availability of the country and variable (Table 2, online Appendix). In all cases, I collected data for the period before and after fiscal and administrative decentralizing reforms were implemented in each country.<sup>16</sup>

## Methods

With the abovementioned case selection and data structure, I report basic descriptive statistics for the dependent variable and then I test the main hypotheses using two strategies. First, I explore whether country-level factors affect interregional redistribution using national-level variables and aggregating national means for variables measured at the district level. The unit of analysis is the country-year. This is a traditional approach to deal with variables measured at different levels of aggregation (Gelman and Hill 2007: 7).

Due to the panel structure of the data, some linear regression (OLS) assumptions may be problematic, especially the independency of observations and errors as well as the equal variance of errors for all observations. I use panel-corrected standard errors (PCSE) regressions (Beck and Katz 1995) to correct for heteroskedasticity and autocorrelation.<sup>17</sup>

Although it provides evidence on the relevance of national level factors, the traditional approach has some limitations. First, we can only explore the relevance of between-group variation but not within-group variation, which is a key aspect in the theoretical argument. This reduces the variability in the data, yielding inappropriate estimates of the standard errors of the regression parameters (Croon and van Veldhoven 2007: 46). Second, and due to the hierarchical structure of the data, one must account for the correlation of the outcome and the error term within states/provinces in a given year. In a classical regression, we should include province-level indicators as well as province-level predictors. But we cannot include both because the predictors would become collinear (Gelman and Hill 2007: 7). Including over 100 dummies for each subnational unit in the dataset reduces parsimony, generates unnecessary noise, and ignores the random variability associated with group-level characteristics (Luke 2004: 7).

I address these limitations using a multilevel structural equation model. Multilevel models are used when data are collected in units (provinces and states) nested in clusters (countries). Among them, structural equation models with latent variables, mainly developed in biometrics and psychometrics

<sup>16</sup> For Argentina, I include years before and after the 1988 fiscal decentralization reforms and the 1992–1993 legal changes that decentralized health and education policies. In Brazil, I include years before and after the 1988 fiscal decentralization reforms and the changes in the Unified Health System (SUS) and in the education fund system (FUNDEF) after 1994. For Colombia, I include observations for the period before and after political decentralization reforms that led to the election of mayors and local authorities (1988), as well as the fiscal and administrative decentralization policies implemented after the 1991 constitutional reform. The same is done with Mexico (after the presidencies of Miguel de la Madrid, 1982–1988, and Carlos Salinas de Gortari, 1989–1994) and Chile (after the 1992 mayoral election).

<sup>17</sup> Only to test the consistency of results correcting for heteroskedasticity, I run a generalized least squares regression (GLS). These results are almost identical to those in PCSE. They are available upon request.

(Rabe-Hesketh et al. 2004: 168), are usually applied to explain variation in outcomes measured at the aggregate level (e.g., ratings of school climate) out of some aggregate and individual level factors. I use this model because of the structure of my data: I try to account for changes in an aggregate group variable (the index of interregional redistribution) on the basis of variables measured at both the provincial level (or level 1, e.g., the political power of governors, type of province, and state GDP) and the country level (the group level or level 2, e.g., the effective number of parties, nationalization of the party system, and economic growth). The units of analysis in this strategy are subnational units-years, which allow me to increase the number of observations and make more controlled comparisons (Snyder 2001: 93).

The generalized multilevel structural equation model I use is the Generalized Linear Latent Multilevel Model (GLLAMM). I use a latent variable approach because the number of observations at the lowest level is sometimes low, leading to unobserved heterogeneity. This is another problematic aspect of models that include the same variable at both the individual level and the aggregated group level: the observed group average obtained by aggregating individual observations may not be a very reliable measure of the unobserved group average if only a small number of level 1 observations are sampled from each level 2 group.<sup>18</sup> The multilevel latent covariate model takes the unreliability of the group mean into account when estimating the contextual effect (Ludtke et al. 2008: 204). The latent variables, or random effects, can be interpreted as unobserved heterogeneity at the different levels inducing dependence among all lower-level units in the same higher-level unit (Rabe-Hesketh et al. 2004: 167; Skrondal and Rabe-Hesketh 2004).

## Descriptive Analysis on Interregional Redistribution

The IIR shows large variation among the selected cases. Argentina ends up the series with the largest value (24 points in 2004), followed by Mexico (16 points in 2007) and the two unitary cases: Chile (6 points in the same year) and Colombia (9 points in 2010). Brazil is the least redistributive country among the five, with a redistributive power of 5 points in 2006 (Fig. 1). These data indicate that the selected federations redistribute little more than double of the selected unitary cases: the average for the three federations is 15.23 points and for the unitary countries is 7.47 points. Colombia is the country that experienced the largest increase in its redistributive power: 12 points between 1985 and 2010.<sup>19</sup>

<sup>18</sup> There is debate on how many level 2 units should be included in a multilevel model. Gelman (2006: 524) models a multilevel regression with as little as 3 level 2 units. Besides taking care of the normality assumption, another important requirement for him is getting a non-zero variance. Gelman recommends running a multilevel model because alternative non-multilevel models are similar to it with a group-level variance set to 0 or infinity.

<sup>19</sup> Argentina stands out as the country that redistributes the most (it has the largest average IIR) and where interregional inequality has experienced the sharpest decline (according to a Gini index that measures income differences between the average income of each province and the national average) but still remains as the most interregionally unequal of the selected nations. Brazil closely follows Argentina in terms of interregional inequality.

## Empirical Analysis

Regression results are reported in Tables 3 to 8 in the Appendix. I first analyze aggregated yearly data results (Table 3, online Appendix). The number of cases in these regressions is low due to limited available data. Therefore, standard errors are high for most coefficients and conclusions should be taken with caution. Despite this caveat, preliminary results support some of our theoretical expectations regarding national-level determinants of interregional redistribution. *Ceteris paribus*, more gubernatorial and presidential powers, as well as more fragmented party systems, are associated to less interregional redistribution. Gubernatorial power is particularly robust: holding all the other factors in the model constant, a 1 % increase in this variable produces between 5 and 7 % decrease in the dependent variable (log-log model). A 1 % rise in the effective number of parties index decreases redistribution in between 2 and 3 %. Party system nationalization also moves as expected: a 1 % increase in this index augments redistribution in 4.6 %.<sup>20</sup> The presidential share of votes moves in the theoretically expected direction and reaches the usual standards of statistical significance in most models, except when presidential ideology is included into the model. A one-point rise in the left-right continuum increases the index of interregional redistribution in about 0.2 %.<sup>21</sup>

It is difficult to conclude on the relevance of overrepresentation due to mixed results. Larger values in this variable augment progressive transfers in two out of three models. In model 2, the coefficient moves in the opposite direction, it is not statistically significant (as in all GLS models), and the standard error is large.

In sum, the aggregate picture seems to indicate that leftist presidents with nationalized and less fragmented party systems encourage interregional redistribution. Powerful governors in fragmented party systems appear to be an obstacle for that. The main variables in the models account for about 70 % of the variance in the index of interregional redistribution.

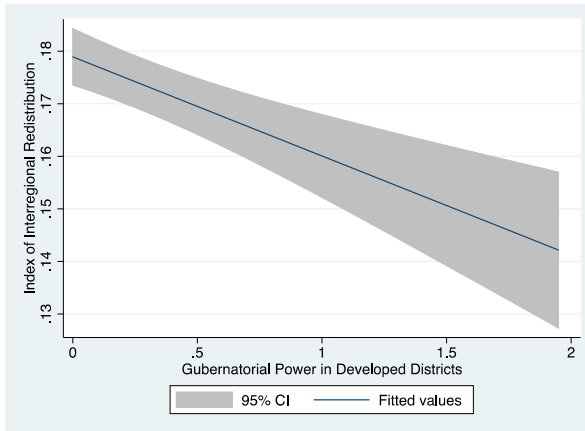
The aggregated yearly data do not show us whether changes in subnational level variables have an influence over aggregated results. Using subnational data, I first report basic bivariate relationships using linear prediction plots. These prediction plots seem to support some of our main theoretical expectations: as the power of governors in developed districts increase, there is less redistribution; the opposite seems to be true for the power of governors in developing districts. Figure 2 shows the negative relationship between gubernatorial power in more developed districts and the index of interregional redistribution. Figure 3, on the contrary, shows the positive relationship between these two variables.

I also run a second set of regressions using GLLAMM to explore whether variations in subnational and national variables help us explaining changes in interregional redistribution (Tables 4, 5, 6, 7, 8, online Appendix). The number of cases is larger with these models because I use yearly provincial- and national-level data. Once again,

<sup>20</sup> I do not include party system fragmentation and nationalization in the same model due to the high correlation between the two variables ( $-0.8$  and  $p=0.00001$ ).

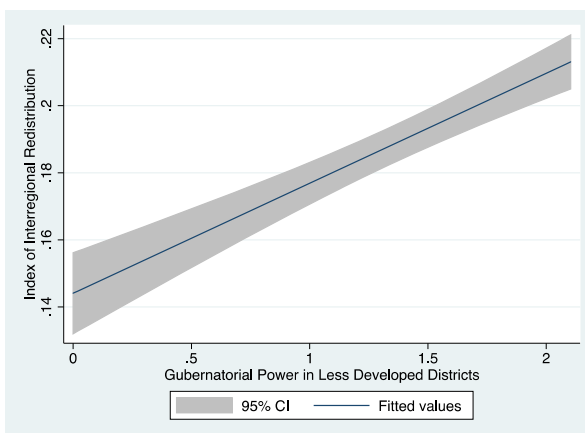
<sup>21</sup> This relationship is statistically significant in PCSE, but it does not reach the usual standards in GLS.



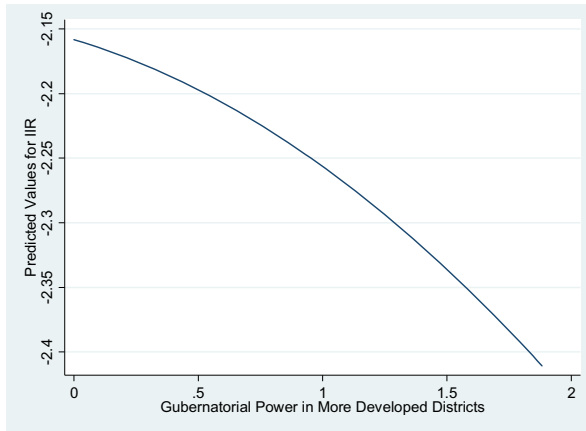


**Fig. 2** Linear prediction plot (with confidence interval) between the IIR and gubernatorial power in developed districts

preliminary results support some of the main theoretical expectations: controlling for the third variables in the model, more gubernatorial power (calculated as the national yearly average) is associated to less interregional redistribution. But interestingly, results vary significantly when we take into account variations in gubernatorial power across states: the interaction term between gubernatorial power and developed districts is negative, relatively robust, and statistically significant. While the interaction term with less developed districts has the opposite sign, being also robust and statistically significant. Hence, and in line with the theoretical argument, results seem to indicate that stronger governors from richer states have imposed reductions in interregional redistribution while stronger governors in less developed states have struggled to increase it. Controlling for the other variables, an average 1 % increase in the index of gubernatorial power in rich states decreases interregional redistribution in about



**Fig. 3** Linear prediction plot (with confidence interval) between the IIR and gubernatorial power in less developed districts



**Fig. 4** Gubernatorial power in more developed districts and predicted values for the log of the IIR

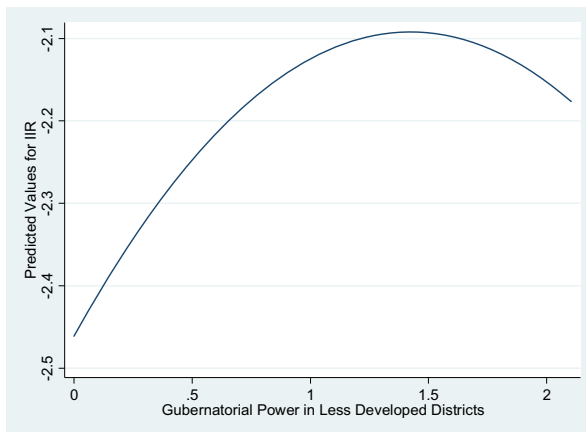
0.9 % (Table 4, model 1, online Appendix); but the same increase in gubernatorial power in less developed states augments redistribution in 2.3 % (Table 4, model 2, online Appendix). All these results are statistically significant across the different models.<sup>22</sup>

The relatively large variance components for level 1 (0.377 in model 1 and 0.824 in model 2) and level 2 (0.430 in model 1 and 0.124 in model 2) in these (as well as in the other) models not only justify the need of running a multilevel regression (as Gelman 2006: 524 suggests) but also can be interpreted as evidence that we still need better theories and predictors in the regressions due to potentially un-modeled variability (Luke 2004: 26–29).

I also calculated the predicted values of this GLLAMM (using the prediction command GLLAPRED). Figures 4 and 5 show the relationships between gubernatorial power in both developed and developing districts and the model's predicted values for the natural logarithm of the index of interregional redistribution. These more precise results confirm those in Figs. 2 and 3: strong governors from developed districts reduce interregional redistribution; governors from less developed districts, on the contrary, favor it. Interestingly, the positive relationship between gubernatorial power in less developed provinces and interregional redistribution is reversed at higher values of the independent variable. This may be an indication that presidents thwart redistribution when governors in less developed districts are very powerful (and can become potential competitors to them or challenge national policies).

The expected regression results partially hold for presidential power. Powerful presidents reduce transfers to all districts, but they seem to somewhat benefit less developed districts in relation to richer provinces. The coefficient for presidential

<sup>22</sup> These are the results of the summing up the coefficients for (the log of) gubernatorial power and the interaction term between this variable and the dummies for developed and less developed districts.

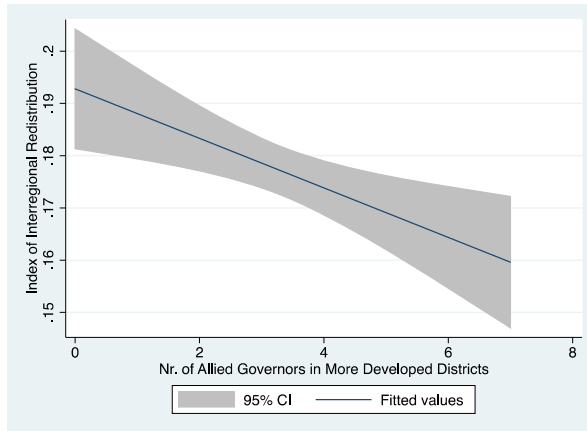


**Fig. 5** Gubernatorial power in less developed districts and predicted values for the log of the IIR

electoral power in model 1 (Table 5, online Appendix) indicates the effect of this variable when the reference category is 0; in this case, when the district is less developed. Although the coefficient is negative ( $-0.017$ ), its value is about 60 % of the value when the reference category is a developed district ( $-0.028$ ). Furthermore, the interaction term indicates that a 1 % increase in the president's share of votes diminishes redistribution in about 0.02 % to richer provinces and 0.015 % to less developed districts (Table 5, models 1 and 2, online Appendix).<sup>23</sup> The interaction term between presidential power and developed districts moves in the expected direction but is not statistically significant (Table 5, model 1, online Appendix).

In order to further specify the model, I interacted presidential power, gubernatorial power, and type of district (developed or less developed interior) (Table 5b, models 3 and 4, online Appendix). One way to interpret these results is that there is a two-way interaction between presidential and gubernatorial power that differs for each level of type of district; or, put in other words, the triple interaction term indicates how the type of district modifies the presidential and gubernatorial power interaction. Hence, and holding constant the usual third variables in the model, results indicate that interregional redistribution augments when presidential and gubernatorial powers increase and when districts are less developed. On the contrary, interregional redistribution diminishes when the first two variables interact with more developed districts. These interaction terms could be a further indication that redistribution varies depending on whether powerful presidents build up coalitions with powerful governors from richer or less developed provinces. Both triple interaction terms are statistically significant (the one for developed provinces is in the limit of

<sup>23</sup> These are the results of the summing up the coefficients for (the log of) presidential electoral power and the interaction term between this variable and the dummies for developed and less developed districts.



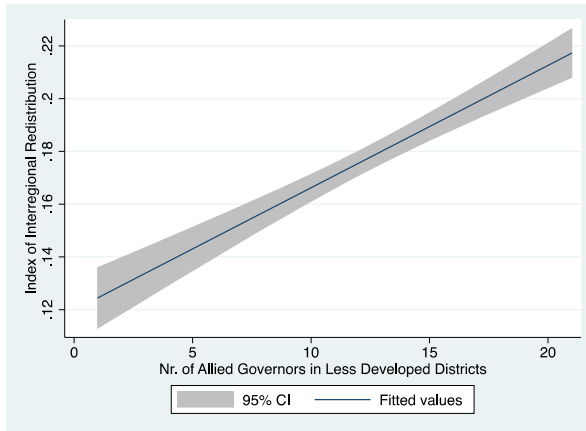
**Fig. 6** Linear prediction plot (with confidence interval) between the IIR and the number of allied governors in more developed districts

statistical significance), relatively robust, and have the expected sign, despite the limitations due to the loss of degrees of freedom.<sup>24</sup>

Some of the coefficients of the main independent variables and the two-way interaction terms, as well as their statistical significance, change considerably when the triple interaction term is included in the model. One of the most likely reasons for this is that these coefficients are now the conditional effects and indicate the effect of the main independent variables and two-way interactions when the other variables involved in the triple interaction are zero. The conditional effect is very different from the unconditional effect obtained when there is no interaction term included in the model. When the triple interaction is significant, then this interaction should be the one evaluated to assist in the interpretation of the model, even when the two-way interaction terms lose statistical significance (Aiken and West 1991: 50).

The empirical evidence also seems to partially support the relevance of the territorial distribution of the presidents' allied governors in richer and poorer regions to explain interregional redistribution. Figures 6 and 7 show, respectively, the positive and negative relationships between the number of allied governors in poorer and richer states and the dependent variable. GLLMM outcomes also reveal differences depending on the territorial distribution of allies. The interaction term between the number of allied governors and developed provinces is negative and statistically significant, while the product between allied governors and less developed districts is positive and significant. *Ceteris paribus*, a unit increase in the number of allied governors in developed states decreases interregional redistribution in about 0.12 % (Table 6, model 1, online Appendix). On the contrary, one more allied governor in developing

<sup>24</sup> The coefficients for the control variables are omitted in Table 5b, online Appendix, to save space.



**Fig. 7** Linear prediction plot (with confidence interval) between the IIR and the number of allied governors in less developed districts

states reduces redistribution in about half of the previous value (0.06 %; Table 6, model 1, online Appendix).<sup>25</sup>

All in all, the results indicate that the coefficients for gubernatorial power are not only substantially more robust but also more statistically significant in relation to the ones for presidential power and number (or share) of allies.

I also included all key variables and the main controls in a fully specified GLLAMM (Table 7, online Appendix). The results support the main theoretical expectations. The coefficients for gubernatorial power and its interaction with type of province remain robust, statistically significant, and with the expected sign in all models. The presidential share of votes and the number of allied governors move in the expected direction and reach the standards of statistical significance in all models (as well as in PCSE, except for the first variable in model 2). When these two variables are interacted with the type of province, their coefficients move in the expected direction but lose statistical significance in most models. Once again, the empirical evidence from the fully specified models seems to underscore the role gubernatorial power (and its interactions with type of province) plays in accounting for changes in interregional redistribution.

Alternative arguments receive varying degrees of empirical support. First, and in line with Beramendi's (2012) claims, more fragmented party systems tend to be associated to less interregional redistribution in most models. *Ceteris paribus*, a 1 % increase in partisan fragmentation decreases redistribution in values between 0.02 and 1.7 %, depending on the model specification (see online Appendix Tables 3–8). These effects are robust, significant in all but one model, and similar to previous results for aggregated national data reported in Table 3, online Appendix.

<sup>25</sup> These are the results of the summing up the coefficients for number of presidential allies and the interaction term between this variable and the dummies for developed and less developed districts. The share of allies (instead of the number of allies) is not a statistically significant variable explaining changes in the outcome. This may mean that specific allies are more important than the total share of them, but more research is needed to code different types of allies.

Second, the coefficient for the presidents' ideology is positive and statistically significant, indicating that leftist presidents redistribute more than right-leaning ones, as we theoretically expected. Controlling for the third variables, a one-point rise in the left-right continuum increases interregional redistribution in about 0.4 % (Table 8, model 1, online Appendix). Despite this result and although the coefficient for the interaction term between presidential share of votes and ideology is significant and has the correct sign, the product of the two coefficients indicates that a 1 % rise in the share of votes and a one-point increase in the left-right position impact in a 0.15 % decrease in interregional redistribution (Table 8, model 2, online Appendix). This result goes in line with the one indicating that powerful presidents tend to reduce transfers to all districts (although they seem to benefit less developed districts in relation to richer provinces).

Finally, in relation to the control variables, more national growth is associated to more redistribution, as theoretically expected in the literature. But, as GDP per capita augments, interregional redistribution tends to diminish.<sup>26</sup> This may be a further indication supporting the argument that richer states tend to press for less redistribution.

## Final Comments

This paper intends to raise awareness on the need to study interregional redistribution in unequal developing democracies. After all, this form of redistribution is at the core of the redistributive struggle in these countries, much more than interpersonal redistribution. Trying to do so, it brings a new measure of interregional redistribution, compares it across countries, and shows that it changes substantially across time and cases. Hence, it claims that there is substantial variation in interregional redistribution that is left unaccounted for in most of the existing models based either on relatively time-invariant institutional or structural variables.

Using data for a large number of cases, I show that federations are more unequal when presidents are subject to the pressures of powerful governors from rich districts (the regressive/conservative coalition), when their party is right-leaning, and when they rule in a fragmented party system. On the contrary, federations are more redistributive when powerful presidents build up territorial coalitions with governors from poorer regions (the progressive/redistributive coalition), when their party is left-leaning, and when party systems are more nationalized or territorially integrated.

Clearly, more research is needed, both in the format of case studies and quantitative analyses for larger number of cases and longer time periods, to determine what affects the final degree of interregional redistribution in developing democracies. However, this paper provides some evidence indicating that it may be worth paying more attention to two factors: first, the electoral power that affect political elites' ability to impose their structurally induced preferences and how they form redistributive

<sup>26</sup> This is the case for most models in the different tables. The coefficients for industrial GDP do not allow us to reach any clear conclusion.

coalitions and second, the intensity of interregional inequalities that define how severe redistributive struggles will be.

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