Rethinking the Political Economy of Decentralization: How Elections and Parties Shape the Provision of Local Public Goods

Raúl A. Ponce-Rodríguez,* Charles R. Hankla,† Jorge Martinez-Vazquez,‡ and Eunice Heredia-Ortiz§

*Universidad Autónoma de Ciudad Juárez; rponce@uacj.mx
†Georgia State University; chankla@gsu.edu
‡Georgia State University; jorgemartinez@gsu.edu
§Development Alternatives Inc., DAI; eunice.heredia@dai.com

As more and more of the world's states devolve power and resources to sub-national governments, decentralization has emerged as one of the most important global trends of the new century. Yet, there is still no consensus as to the benefits of decentralization and how to design institutions that can realize these benefits. We investigate the political conditions under which the decentralization of authority will improve the delivery of public goods. Building off Oates' "decentralization theorem" to include inter-jurisdictional spillovers, we develop a new theory suggesting that the interaction of democratic decentralization (the popular election of sub-national governments) and party centralization (the power of national party leaders over sub-national office-seekers) will produce the best service delivery outcomes. To test this argument empirically, we develop a new dataset of sub-national political institutions. Our analyses, which examine educational and health service delivery in 135 countries across thirty years, provide support for our theoretical expectations.

As more and more of the world's states devolve power and resources to sub-national governments, decentralization has emerged as one of the most important global trends of the new century. Yet, there is still no consensus as to the benefits of decentralization and how to design institutions that can realize these benefits. In this article, we investigate the political conditions under which the decentralization of authority will improve the delivery of public goods.

We begin with Oates' (1972) decentralization theorem, in which he shows formally that the decentralized provision of local public goods will be more efficient. This theorem has influenced virtually all of the modern literature in decentralization, and it is the cornerstone of many of the arguments supporting decentralization programs today.

Publius: The Journal of Federalism, pp. 1–36
doi:10.1093/publius/pjy003

But Oates' theorem has a weakness: it makes the assumption that local public goods have no inter-jurisdictional spillovers. Unfortunately, in the real world, these goods often have cross-border effects, raising the risk that local officials may be unwilling to pay for their efficient provision because some of the benefits are "wasted" on the citizens of other constituencies. To take an example, will regional or local governments be ready to construct health centers and schools that citizens of neighboring jurisdictions may use? Such public goods may be efficient and to the benefit of a nation in the aggregate, but local officials may be unwilling to pay for them if they cannot internalize all of the credit.

In this article, then, we ask whether the hypothesized advantages of empowering sub-national governments will still hold even when public goods are assumed to spill over across jurisdictions. We develop an argument showing that, under certain political conditions, decentralization can still maximize the efficiency of public goods provision even when spillovers are present. More specifically, we contend that local public goods will best be provided when democratic decentralization is combined with party centralization. In democratically decentralized systems, subnational governments are elected by their citizens, ensuring the accountability mechanisms necessary to incentivize the provision of desired public goods. In party centralized systems, however, these local elections are contested by national parties that are controlled by central elites. Under these circumstances, national interests seep into local policy-making, increasing the motivation of local governments to provide efficient levels of public goods, even when their benefits might spill across jurisdictions.[1]

To test these arguments empirically, we make use of a new dataset of sub-national political institutions created for this project. Up to this point, scholars interested in sub-national political institutions have been forced to focus on individual or region-specific cases or to assume that national-level political institutions are replicated at the sub-national level. Our new dataset allows us to examine how the structure of sub-national political institutions influences educational and health policies (our proxies for public goods provision) in 135 countries across thirty years. This empirical analysis, to our knowledge the broadest quantitative exploration of sub-national politics in the literature, provides solid support for our theoretical expectations.

We organize the rest of the article as follows. We begin by reviewing the pertinent literature. We then discuss the basic intuition behind our analysis. This is followed by our empirical analysis and results and conclusion.

Review of the Literature

Much of the modern research on decentralization can be traced back to Tiebout's landmark 1956 study, which argued that a decentralized system of public service

delivery maximizes efficiency by allowing government services to vary according to the preferences of citizens in different jurisdictions. Oates in his 1972 formulation of the decentralization theorem picked up on this idea and qualified it by assuming away interjurisdictional spillovers. Ever since then, scholars have spent significant time critiquing and testing the proposition that decentralization improves governance.

To take a few examples from this expansive literature, Breton (2002), Treisman (2007), Lockwood (2002), and Besley and Coate (2003) examine whether central governments could themselves target public goods delivery to regional preferences, while Bardhan (2002) and Manor (1999) express skepticism that individuals will move to regions that provide the policies they prefer. Treisman (2007) and Tanzi (2002) assert that decentralization increases opportunities for corruption, while Shah (2003) and Manor (1999) worry that it can be counter-productive if sub-national civil servants are not sufficiently professionalized.

Despite the critics, most theoretical scholarship in political science and economics, following in the tradition of Tiebout and Oates, has viewed decentralization positively. On the empirical side, however, evidence for the proposed link between decentralization and efficiency has been mixed. Scholars seeing decentralization as a benefit include Lewis (1998), who associates improved water delivery with decentralization in Kenya, and Habibi et al. (2003), who points to evidence that strong sub-national governments have reduced infant mortality in Argentina. Studies of Bolivia (Faguet and Sanchez 2008), Argentina (Habibi et al. 2003), and Indonesia (Simatupang 2009), as well as cross-national quantitative analyses (Heredia-Ortiz 2006), also point to improved educational outcomes with decentralization.[2]

Among the skeptics, Davoodi and Zou (1998) argue that devolving power to sub-national governments slows economic growth in developing countries, Parry (1997) questions whether decentralization in Chile has improved educational outcomes, and, more recently, Malesky, Nguyen, and Tran (2014) find that public service provision mostly improved after the abolition of district-level representative councils in Vietnam.

A reasonable summary, then, is that most scholars continue to see decentralization as a route to improving the delivery of public goods, but with a number of significant caveats (Hankla 2009). If the benefits of decentralization are indeed conditional on other factors, something that many scholars suspect, it could help account for the mixed empirical findings outlined above. Thus far, however, the literature has spent little time considering how political institutions might matter in mediating the effects of devolving power to sub-national governments.

Of course, political economists have long investigated the implications of different institutional configurations for the delivery of public goods, but their efforts have focused largely on national governments. One structural factor that

scholars have found to shape national policy is political party organization, something that we examine very closely in our theory. More specifically, researchers have linked a more centralized party structure (with empowered national elites) to improved public goods provision. Hankla (2006) and Nielson (2003), for example, argue that democracies with centralized political parties are more likely to adopt free trade policies, and Hallerberg and Marier (2004) find a connection between centralized parties and balanced budgets in Latin America. Similarly, Hicken and Simmons (2008) suggest that education spending undertaken by decentralized parties is more particularistic and less effective. These scholars contend that party centralization shifts power from local elites, who might be tempted to shore-up their support with particularistic goods, to national party leaders, who have electoral incentives to consider the aggregate national interest.

A large literature has also developed around the important issue of multilevel and shared governance. Scholars in this area examine how varying structures of power-sharing across tiers of government affect party behavior and policy outcomes around the world (e.g., Montero and Samuels 2004). To take some examples, researchers have investigated the political origins of decentralization, some seeing it in part as a hedge against the risks of losing power at the center (e.g., Dickovick 2011). Others have examined the causal relationship between party system nationalization on the one hand and the empowerment of sub-national governments on the other, postulating a direct relationship between party system and state organization (e.g., Chhibber and Kollman 2004; Garman, Haggard, and Willis 2001). Still others have looked at how geographic inequalities might favor regional parties (Kyriacou and Morral-Palacin 2015), and how regional parties can, in turn, undermine the cohesiveness of states (Brancati 2009). Beyond these issues, researchers have also addressed the role of decentralization on public goods provision (e.g., Grindle 2007, Kleider 2017), along with the question of how specific party structures can contribute to (or undermine) the stability of federalism (e.g., Filippov, Ordeshook, and Shvetsova 2004; Myerson 2006).

All of these scholars have improved our understanding of how partisan and sub-national institutions interact, but their focus has not been on connecting particular sub-national political institutions with public goods provision. Indeed, there are very few systematic studies in the literature that make this connection, but it is worth highlighting here several that do. First, Riker, in his 1964 study, suggests that decentralized parties could be both a driver of democratic decentralization and a protector of the benefits of federalism. Second, Wibbels argues in his 2005 book that the presence of centralized parties facilitates the efforts of national leaders to push sub-national governments into market reforms. Third, Hecock (2006) finds a positive relationship between sub-national political competition and educational

spending in Mexico. And, in a similar vein, Beazer (2015) shows that the benefits of decentralization in Russia are dependent upon the level of local electoral competition. Fourth, Hicken, Kollman, and Simmons (2015) posit that nationalized party systems are associated with improved public goods provision, a finding that gels with our argument that broad institutions can incentivize public goods distribution across jurisdictions. Finally, and perhaps most related to our own work, Enikolopov and Zhuravskaya (2007) conclude, after a cross-national empirical study, that devolving fiscal authority to sub-national governments is more likely to improve public goods (in this case, education) delivery when parties are centralized.

Despite some overlap, however, there are a number of significant differences between our argument and those set forth by these scholars. For example, Riker is primarily concerned with the causal relationship between party and democratic decentralization, rather than with the combinations of the two that would best generate public goods. Wibbels (2005), for his part, focuses on party centralization as a means of national control within a decentralized political system, and not on the incentives such structures create for internalizing externalities. Hicken, Kollman, and Simmons (2015) are interested in whether national legislative parties represent geographic or ideological cleavages, rather than in *local* party characteristics and *local* public goods. Likewise, Hecock (2006) and Beazer (2015) are more concerned with the level of partisan competition than with the questions of party organization that we study here. Moreover, in contrast to Enikolopov and Zhuravshaya's important 2007 study, we consider here the interaction between party centralization and democratic decentralization rather than that between party centralization and fiscal decentralization, and so our theory is significantly different. On the empirical side, our dataset measures party decentralization more directly and at the sub-national level.

To summarize, then, the purpose of our article is to merge insights from the decentralization literature with scholarship on institutions, all to identify the political conditions needed for realizing the benefits of decentralization. We turn to our theory in the next section.

Theory

In developing our theory, we address the implications of different institutional configurations for local public goods provision in the presence of interjurisdictional spillovers. We develop our arguments formally for plurality electoral systems in Ponce-Rodriguez et al. (2016), and for proportional electoral systems in Ponce-Rodriguez et al. (2017). For space reasons, we limit ourselves here to a conceptual

summary of our theoretical argument, but one that we believe can stand on its own reasonably well. More specifically, we consider four cases:

(1) countries that are *democratically decentralized* (i.e., they have democratically elected sub-national governments) and *party decentralized* (i.e., national leaders lack the power to select candidates for these sub-national elections);
(2) countries that are *democratically centralized* (i.e., they have no elected sub-national governments) but *party decentralized* (i.e., national leaders lack the power to nominate candidates for constituency elections to the national legislature);
(3) countries that are *democratically decentralized* (i.e., they have elected sub-national governments) but *party centralized* (i.e., national party leaders select candidates for sub-national elections); and
(4) countries that are *democratically centralized* (i.e., they have no elected sub-national governments) and *party centralized* (i.e., national party leaders nominate candidates to constituency elections for the national legislature).

We argue, first, that democratic decentralization produces incentives for politicians to provide citizens with the bundle of public goods that they desire. It can do so through two primary mechanisms: accountability and information. Elected subnational governments are accountable to their local constituents, and therefore have an incentive to provide the goods and services that these citizens desire, on pain of being voted out of office (see von Braun and Grote 2002). They are also likely to have more information about what these preferences are than officials in far-away national capitals. As a result, in keeping with the basic logic of the decentralization theorem, polities with elected sub-national governments are more likely to target public services to the needs and preferences of their constituents, allowing bundles of goods to vary across constituency. Of course, having these governments democratically elected is the key to ensuring that they are responsive to citizen desires (Bird and Vaillancourt 1998; Manor 1999).

Second, we contend that party centralization has the contrasting benefit of increasing the chances that any externalities from local public goods will be internalized. When democratically decentralized systems are party centralized, local elections will be contested mainly by parties which compete nationally. Countries with non-partisan local elections, as well as those with local elections contested primarily by regional parties or independents, will not, therefore, meet our definition of party centralized systems. Additionally, party centralized systems will be characterized by national parties that are internally centralized, meaning that national party elites will have control over the nomination of candidates for sub-national office (Carey and Shugart 1995). When both of these conditions are met, namely that national parties dominate local elections and are themselves internally centralized, the parties can serve as a conduit for linking the national and the local, as described below.

We have already noted that a common concern about democratic and fiscal decentralization is that local governments will under-provide public goods with beneficial spillovers beyond their constituencies. This is because such governments are unable to internalize and profit from the political rewards of providing these goods optimally. The "rational" policy is instead to ignore the benefits that arise in other jurisdictions and/or to free-ride on the expenditures of neighboring governments; in either case the production of public goods will not be optimal. A number of basic public services, such as primary health, general education, water treatment and environmental protection, are likely to generate spillover effects and may not receive sufficient financing from local governments when parties are decentralized.[3]

When parties are centralized, however, sub-national elected leaders do have incentives to provide more public goods with benefits that spill over into neighboring constituencies. National party leaders will be interested in generating optimal levels of public goods with spillover effects because they are concerned with their party's prospects in the country as a whole. In centralized parties, these national leaders have significant powers, not least nomination powers over sub-national politicians, and therefore can push them to optimally supply these goods. Not only that, but local officials in party centralized systems are likely to harbor the desire to move up within their own parties and, eventually, to acquire national office. They will thus have one eye on the national implications of their local policies, and are therefore less likely to eschew public goods with spillovers.

To summarize, sub-national leaders in systems with democratic decentralization and party centralization have two masters whose interests are sometimes in competition, namely party chiefs in the national capital and local voters in the constituencies. Without the former, local politicians cannot be nominated and without the latter they cannot be elected. These competing loyalties produce incentives for sub-national officials to provide both differentiated local public goods and to spend more money on goods with spillover effects. They also motivate national party leaders to support the provision of local goods to ensure constituency success while also coordinating across jurisdictions to maximize national electability (Snyder and Ting 2002).

Our argument, therefore, is that systems mixing democratic decentralization with party centralization will have the best outcomes from the perspective of the optimal supply of local public goods, other things equal. Systems that are centralized in both ways lack sufficient incentives to differentiate and target goods to local preferences, and systems that are decentralized in both dimensions have little incentive to generate optimal levels of public goods with geographical externalities.

A few final issues present themselves. First, an observer could reasonably ask whether countries that mix centralization and decentralization in the reverse way,

those with no locally elected governments but with decentralized parties, produce the same beneficial results. We think not. Even if politicians elected to the national legislature from local districts have incentives to concern themselves with local preferences, their ability to force the central government to differentiate tax and spending bundles according to constituent preferences will be limited.

Moreover, theoretical models developed by Lockwood (2002) and Besley and Coate (2003) indicate that, while central governments may provide different constituencies with different bundles of public goods, a more decentralized approach to decision-making is likely to produce more efficient differentiation. When central governments differentiate their taxation and expenditure, they are more likely to be focused on rewarding supporters or winning over swing districts than in allocative efficiency (Treisman 1996; Khemani 2007).

Second, it is worth noting that our models assume genuine competition at the sub-national level. Without competition and the resulting risk of losing office, the accountability mechanism created by democratic decentralization is significantly reduced (as shown by Hecock 2006 and others). While it is impossible for us to control fully for local electoral competition in a cross-national model, we have restricted our dataset only to those country-years coded as electorally competitive by the Database of Political Institutions (see below).

Third, and relatedly, we recognize that party centralization could risk undercutting the benefits of democratic decentralization if national party leaders have the power to override local authority. We believe, however, that the need for co-partisans to be elected at the local level will constrain the efforts of national party leaders to dominate local politics, especially when competition is keen. For this reason, we argue that party centralization, when combined with democratic decentralization, will generally have salubrious effects.[4]

Fourth, while past research indicates that democratic decentralization and party decentralization are interconnected (e.g., Hankla and Manning 2017; Garman, Haggard, and Willis 2001; Chhibber and Kollman 2004), this relationship is far from determinative. As our data indicate (see below), there remain numerous country-years where parties are centralized despite the fact that local elections are held. This variation is enough to conclude that state institutions and party structures, while interconnected, are distinct enough to warrant independent analysis.

Empirical Analysis

In this section, we test whether political institutions do indeed affect the efficiency with which local public goods are provided. More specifically, we evaluate the key expectation stemming from our theory: that the combination of democratic decentralization and party centralization will lead to the best delivery of local

public goods, other things equal.[5] To do this, we make use of a series of quantitative models of all electorally competitive countries from 1976 to 2006, contingent on data availability. Our most expansive model considers 1929 observations and 135 countries, to our knowledge the broadest examination of sub-national political institutions in the literature.

We employ fourteen different measures of education policy and eighteen different measures of health policy to operationalize our dependent variable, the provision of public goods at the sub-national level. Such measures are often used in the empirical literature to denote public goods provision at the sub-national level (see, for example, Enikolopov and Zhuravskaya 2007 and Faguet and Sanchez 2008). We discuss how our thirty dependent variables are coded and provide some summary statistics in tables 1 and 2.

We select such a large number of dependent variables to maximize the robustness of our results and to test how widely applicable they are. If we find similar relationships across numerous policy areas, especially when they are coded for different country-years, it will provide particularly strong support for our arguments. Of course, in many countries, education and health indicators are trending up, and these movements are especially rapid in the more successful developing countries. That said, the System Generalized Method of Moments (GMM) model (discussed below) allows us to deal with non-stationarity when it exists, and the random effects model (also discussed below) allows for comparisons in the level of the indicator across countries, not just within comparisons across time.

We select educational and health inputs and outcomes as our dependent variables because they allow us to examine both allocative efficiency gains (i.e., differentiation based on local preference—the main hypothesized benefit of decentralization as reflected in the decentralization theorem) and the degree to which public goods are provided in the face of spillovers (our hypothesized benefit of centralized parties).

Why should this be so? First, our indicators of educational and health provision are subject to strong inter-jurisdictional spillover effects. The inhabitants of a country benefit from the educational attainment of their fellow citizens—in general, greater knowledge accumulation leads to reduced crime, economic improvements, and greater political participation that spill outside the limits of any single jurisdiction. Another source of spillover effects occurs with population mobility—local residents may move outside a jurisdiction after receiving their education, and residents of neighboring jurisdictions may sometimes register for schools not provided in their own locales. For these reasons, the provision of education, as measured by our indicators, can be associated with a greater willingness on the part of local leaders to provide public goods in the presence of spillovers. The same is likely to be the case with the provision of basic health

Table 1. Summary statistics—education-dependent variables

Variable	Computation method (Source: World Bank)	Mean	Range
Primary school enrollment adjusted	The ratio of total enrollment in school to the total population of primary school age.	88.40	25.74–100.00
Primary school enrollment adjusted—Female	The ratio of total female enrollment in school to the total female population of primary school age.	86.26	21.35–100.00
Primary school enrollment—Net	The ratio of total enrollment in primary school to the total population of primary school age.	86.89	25.61–100.00
Primary school enrollment—Net Female	The ratio of total female enrollment in primary school to the total female population of primary school age.	84.65	21.18–99.99
Primary school enrollment—Gender Parity	The ratio of girls to boys in primary school.	0.948	0.496–1.17
Children out of school	The ratio of primary aged children not enrolled in school to the total population under age 14 years.	12.31	0–74.26
Children out of school—Female	The ratio of primary aged girls not enrolled in school to the total population of girls under age 14 years.	14.70	0–79.73
Net intake ratio in grade one	The ratio of children of relevant age entering the first grade of primary school to children in the population of relevant age.	61.16	11.95–99.06
Adult literacy rate	Percentage of population 15 years old and above who can read and write a simple sentence.	74.87	12.85–99.77
Persistence to fifth grade	The percent of children enrolled in the first grade of primary school who eventually reach fifth grade.	81.98	18.93–100
Primary completion rate	The ratio of total entrants in the last grade of primary school to the total population of relevant age.	82.08	14.09–118.57
Primary completion rate—Female	The ratio of total female entrants in the last grade of primary school to the total female population of relevant age.	80.76	11.08–121.03

(continued)

Table 1. Continued

Variable	Computation method (Source: World Bank)	Mean	Range
Govt education expenditure—% govt Spending	Government expenditure, at all levels, on education as a percent of total government expenditure.	14.49	4.77–32.40
Govt primary education expenditure—% govt Spending on Ed	Government expenditure, at all levels, on primary education as a percent of total government education expenditure.	35.66	1.26–98.67

Table 2. Summary statistics—Health-dependent variables

Variable	Computation method (Source: World Bank)	Mean	Range
Infant mortality rate	Number of infants dying before one year of age per 1000 live births.	37.61	2.3–143.4
Public health expenditure—% GDP	Total public expenditure on health as a percentage of GDP.	3.39	0.267–8.43
Public health expenditure—% govt Spending	Total public expenditure on health as a percentage of total government spending.	11.05	2.20–29.17
Children receiving DPT immunization	The percentage of children aged 12–23 months who have received adequate DPT vaccination.	82.65	15–99
Children receiving Hepatitis B immunization	The percentage of children aged 12–23 months who have received adequate HepB3 vaccination.	78.70	1–99
Children receiving measles immunization	The percentage of children aged 12–23 months who have received adequate Measles vaccination.	81.56	16–99
Improved sanitation facilities	Percent of population with access to improved sanitation facilities, generally those which separate waste from human contact.	67.82	3–100
Improved sanitation facilities—Urban	Percent of urban population with access to improved sanitation facilities, generally those which separate waste from human contact.	76.38	12.3–100

(continued)

Table 2. Continued

Variable	Computation method (Source: World Bank)	Mean	Range
Improved water source	Percent of population with access to improved drinking water sources, such as piped water.	83.44	21.4–100
Improved water source—Urban	Percent of urban population with access to improved drinking water sources, such as piped water.	93.24	37.3–100
People using basic drinking water	Percent of population with access at to improved drinking water sources within a 30 minute round trip walk.	81.42	16.73–100
People using basic drinking water—Urban	Percent of urban population with access at to improved drinking water sources within a 30 minute round trip walk.	92.29	59.49– 100
People using basic sanitation	Percent of population with access to improved sanitation facilities, unshared with other households.	67.99	3.15–100
People using basic sanitation—Urban	Percent of urban population with access to improved sanitation facilities, unshared with other households.	74.69	10.04–100
TB detection rate	Percent of estimated cases of tuberculosis in a given year which are reported to WHO.	68.71	6.5–130
TB treatment success rate	Percentage of registered tuberculosis cases which successfully completed treatment.	75.12	9–97

services such as vaccination. In many countries, basic health is under the authority of sub-national governments, and it is a common occurrence for citizens to cross jurisdictional boundaries in pursuit of care. In addition, as with education, there are clear national spillover effects associated with a healthier population. Most obviously, the social benefits of immunization depend at least partially on its widespread application, and so any single jurisdiction is unlikely to internalize all of the benefits of an effective vaccination program.

Our educational and health indicators also capture allocative efficiency effects. Improved political accountability resulting from democratic decentralization provides decentralized governments greater incentives to act in accordance with the needs and preferences of their constituents. While most constituencies will prize superior educational outcomes, different sorts of practices are likely to produce

these outcomes in different locales. For example, in one jurisdiction, limited resources might best be channeled into increasing the number of teachers, whereas in another improved educational materials might be the focus. As a result, we believe that superior educational provision likely reflects (other things equal) an ability on the part of officials to consider local preferences and conditions. In a similar way, while all citizens are likely to favor high quality health services, scarce local resources may, for example, be more efficiently used on medical centers in one constituency and on medicines in another. The positive health outcomes that we measure are therefore more likely to obtain, we believe, when local governments can target their resources to the differing needs of their constituents. More inputs directed towards health are also likely to reflect a higher level of local accountability.

Moreover, the literature bears out our use of educational and health outcomes to measure allocative efficiency and the internalization of spillovers. For example, two papers (Faguet and Sanchez 2008; Solé-Ollé and Esteller-Moré 2005) conclude that decentralization leads to better adjustment between investment patterns and local demands (in Bolivian municipalities in the first instance and Spanish provinces in the second). Similarly, in a more recent paper, Arze del Granado, Martinez-Vazquez, and McNab (2016) analyze the effects of decentralization on the composition of public expenditures for a large panel of countries and conclude that decentralization of public goods delivery is usually accompanied by an increase in educational and health expenditures. This finding suggests that decentralization, via greater responsiveness of public officials and preference matching, can increase allocative efficiency by altering the composition of public expenditures (which is part of our empirical tests). And an analysis by Cerniglia and Longaretti (2013) shows that the targeting of educational services to the specific preferences of different jurisdictions can contribute to more rapid human capital accumulation and accelerated growth. Moreover, we rely on educational and health outcomes because they are among the most important services that are generally delivered at the sub-national level, and because there is ample data available to measure them.

On the right side of the equation, our theory requires that we consider both the existence of elected sub-national governments and the level of party decentralization at the sub-national level. We develop an original dataset of sub-national political institutions to capture both of these measures, which we code for all countries between 1975 and 2007, where data are available. As part of this dataset, we code for the presence of elections, the structure of legislative-executive relations, the electoral system, the extent to which the national party system is replicated, and the centralization of parties at both the highest sub-national level and the municipal level (defined as the lowest level of sub-national government).

It is also worth noting that, although our dataset includes information on both regional and municipal institutions, we focus on municipalities (defined as the lowest sub-national authority) in this analysis. We believe that the municipal level of government, in the aggregate, is most likely to matter for the primary education and health outcomes that we consider. In many countries, either full or shared authority over these policy areas is allocated to local governments, particularly in the case of education.

Of course, there is significant national variation in the actual policy control devolved to municipal authorities to provide primary education and health services, as well as in the fiscal resources allotted for those tasks. We include two variables from Graham and Strøm's (2017) Varieties of Federalism data—*Subnational Taxation Power* and *Subnational Education Power*—in an attempt to control for these sources of variation. The first measures when regional governments are able to levy their own taxes, and the second when regional governments have significant authority over education policy. Unfortunately for our purposes, these variables are measured at the regional level rather than the municipal level, and they do not pick up on all the nuances of subnational authority. Nevertheless, they are the most useful and comprehensive indicators available.

To operationalize our two primary independent variables, we begin by coding three component variables—*Municipal Elections, Municipal Role of Parties*, and *Municipal Party Decentralization*. Our operationalization of the first of these variables—*Municipal Elections*—is fairly permissive, requiring for a "1" only that multiparty or competitive non-party assembly elections are held. Our second variable is *Municipal Role of Parties*, which we code between "0" and "4", and only when local elections are held. Higher numbers on this variable indicate that national parties, defined as those competing successfully in multiple geographical areas, win more local seats.

When this variable, in turn, takes a value above "2", meaning that national parties control more than 75 percent of municipal assembly seats, we code our third component variable—*Municipal Party Decentralization*. This variable measures candidate nomination powers as conceived by Carey and Shugart (1995) and varies from "0" to "2", with higher numbers indicating that national parties have less control over nominating candidates for municipal elections. In systems coded "0", national party leaders have full powers to nominate candidates for local office, whereas in systems coded "1", they have the power to name their candidates but voters control the ballot order (as in open list systems). The least centralized systems are coded "2"; here, local candidates can take the party name by winning primaries or by collecting signatures.

We then use these component variables to create the two independent variables that we include in our models. Our first dummy variable, labeled *Democratic*

Decentralization, Party Centralization, is coded "1" when (1) there are municipal elections, and (2) more than 75 percent of municipal council seats are held by national parties, and (3) national party leaders exercise centralized power over municipal party nomination (i.e., party centralization is coded "0" above). Our second, labeled *Democratic Decentralization, Party Decentralization*, is coded "1" when (1) there are municipal elections, and either (2) 75 percent or fewer of municipal council seats are held by national parties, or (3) national party leaders do not control party nomination in municipal elections.[6] Our omitted reference category, of course, is systems with no democratic decentralization at all.[7] To our knowledge, this article is the first to consider party system nationalization and party centralization simultaneously in a large empirical model.[8]

Beyond our key theoretical indicators, we control for potentially confounding political factors by including five institutional variables, all but the last coded as part of our original dataset. The first of these is *Municipal Centrally Appointed Executive*, coded "1" when the national or regional government appoints the mayor. This control is necessary because our primary independent variables are based on assembly elections, and there are some systems where local assembly members are voted into office but local executives are not. The second is *Municipal Directly Elected Executive*, coded "1" when municipal executives are directly elected and not removable (except through impeachment or election recall) by the municipal assemblies. The third institutional control that we include is *Municipal Plurality*, coded "1" when municipal council elections are held using a plurality (as opposed to a proportional or mixed) electoral system.

While there is little research on the impact of these institutions at the municipal level, some previous scholarship at the national level points to the potential benefits of strong unitary executives. When executive authorities are elected and subjected to reasonable legislative oversight, they may produce better public outcomes than either unelected mayors or mayors selected by dominant assemblies (see, for example, Mukherjee 2003; Egger, Koethenbuerger, and Smart 2010; Sabatini 2003). In addition, some research suggests that proportional electoral systems may have certain benefits over simple plurality systems (see, for example, Lijphart 1977). For these reasons, we anticipate that *Municipal Centrally Appointed Executive* and *Municipal Plurality* will be negatively associated with governance outcomes, while *Municipal Directly Elected Executive* will be positively associated. For all three of these variables, of course, democratically centralized systems are coded "0".

Our fourth control variable—*Regional Elections*—receives a "1" when elections are held at the regional, or highest sub-national, level. Elected government at this intermediate level, when it exists, may have an independent impact on public goods delivery. *Programmatic Parties*, the last of our political controls, comes from the V-Dem dataset of Coppedge et al. (2017) and codes each country's parties

from "0", or fully clientelistic, to "4", or fully programmatic. Following the literature, we anticipate that governance outcomes will be better under programmatic parties.

In addition to these variables, we include in the models a series of economic and social controls, namely *Logged GDP per capita* in purchasing power parity, *Fertility* rate, *Logged Population Density*, decade dummies, and world region dummies. We take the data for all of these indicators from World Bank (2010).

Finally, because our theoretical model assumes elections, we restrict our observations to country-years that are minimally electorally competitive at the national level. We use a six out of seven on the *Legislative Index of Electoral Competitiveness* from the Database of Political Institutions as our cut-off (Beck et al. 2001). A number of our country cases are better characterized as hybrid regimes than as full democracies, but we still include them to increase our number of observations and because our theoretical mechanism is primarily about electoral accountability, which should function at least to some degree in these systems. That said, we also use the *Polity* scores for our country-years to control for the varying levels of democracy that exist in our dataset (Marshall and Jaggers 2000).

We present summary statistics on all of our independent variables in table 3, as well as a complete listing of all country-years coded "1" on our primary *Democratic Decentralization, Party Centralization* variable in table 4.

To ensure the robustness of our empirical tests, we estimate three separate models for our dependent variables. Our primary models use a random effects framework with AR1 autocorrelation correction, decade dummies, and world region dummies. In addition, to avoid any chance of bias arising from the assumption of random effects, we also estimate fixed effects models as our first robustness test. These models include both country and year dummies, as well as robust standard errors. Fixed effects estimations better address not only omitted variable biases, but they also consider only the less important cross-temporal variation present in our data.

Estimating both random and fixed effects models provides the additional benefit of testing whether the independent variables can predict changes in education and health performance both across countries and across time. The random effects models consider variation both within and between country cases, but they are primary concerned with the between variation that dominates the data. The fixed effects models, in contrast, examine only within variation, as they include dummies for each country.

Our final robustness tests make use of the Arellano-Bond System GMM estimator (see Blundell and Bond 1998, Roodman 2009). This approach allows us to address any potential reverse causality in the models by instrumenting endogenous variables with their differences and lags. In our GMM models, we treat three variables—*Fertility*, *Logged GDP per capita*, *and Logged Population*

Table 3. Summary statistics—independent variables

Variable	Computation method and source	Mean	Range	Expected relationship with good governance outcomes (sign may change according to direction of Y)
Democratic decentralization, party centralization	Coded "1" when (1) there are municipal elections, and (2) more than 75% of municipal council seats are held by national parties, and (3) national party leaders control party nomination in municipal elections. Based on the three component variables below. (Source: Original Dataset)	0.515	Dummy	Positive
Democratic decentralization, party decentralization	Coded "1" when (1) there are municipal elections, and either (2) 75% or fewer of municipal council seats are held by national parties, or (3) national party leaders do not control party nomination in municipal elections. Based on the three component variables below. (Source: Original Dataset)	0.320	Dummy	Insignificant or Positive with a smaller sign than Democratic Decentralization, Party Centralization
Municipal elections	Coded "1" when competitive elections are held at the municipal level. (Source: Original Dataset)	0.837	Dummy	Used to calculate the primary independent variables
Municipal role of parties	When *Municipal Elections* indicates the presence of municipal elections, this variable is coded "0" to "4", with higher numbers indicating that national parties win more local seats. (Source: Original Dataset)	2.62	0–4	Used to calculate the primary independent variables

(continued)

Table 3. Continued

Variable	Computation method and source	Mean	Range	Expected relationship with good governance outcomes (sign may change according to direction of Y)
Municipal party decentralization	When *Municipal Role of Parties* indicates that national parties play a major role in municipal elections (i.e. is coded "3" or "4"), this variable is coded "0" to "2", with higher numbers indicating that national parties have less control over nominating candidates for municipal elections. (Source: Original Dataset)	0.303	0–2	Used to calculate the primary independent variables
Municipal centrally appointed executive	Coded "1" when national government appoints municipal executive.	0.051	Dummy	Negative
Municipal directly elected executive	Coded "1" when (1) there are municipal elections, and (2) the municipal mayor or other executive is directly elected and cannot be removed by the municipal council. (Source: Original Dataset)	0.309	Dummy	Uncertain (Positive?)
Municipal plurality	Coded "1" when (1) there are municipal elections, and (2) a plurality system is used to elect the municipal assembly. (Source: Original Dataset)	0.257	Dummy	Uncertain (Negative?)
Regional elections	Coded "1" when competitive elections are held at the regional level (Source: Original Dataset)	0.456	Dummy	Uncertain (Positive?)
Programmatic parties	Party linkage sources, coded from pure clientelistic (0) to pure programmatic (4). (Source: V-Dem)	2.31	0–4	Positive
Polity	Level of democracy, coded from pure authoritarian (-10) to pure democratic (10). (Source: Polity IV)	5.23	−9 to 10	Positive

Subnational taxation power	Coded "1" when regional governments have the power to raise taxes. (Source: Variations in Federalism)	0.398	Dummy	Positive
Subnational education power	Coded "1" when regional governments have authority in education policy. (Source: Variations in Federalism)	0.378	Dummy	Positive
Fertility	Lagged average births per woman (Source: World Bank)	3.15	1.08–7.79	Negative
Logged GDP per capita	Lagged Logged GDP per capita ppp (Source: World Bank)	8.91	5.91–11.13	Positive
Logged population density	Lagged logged people per square kilometer (Source: World Bank)	3.97	0.356–8.80	Positive
Legislative electoral competitiveness (Lagged)	Lagged Legislative Index of Electoral Competitiveness (Source: Database of Political Institutions)	N/A	1–7	Used to restrict dataset to countries with multiple parties in the national legislature (scoring 6 or 7)

Table 4. Countries coded "1" on democratic decentralization, party centralization (note: only electorally competitive country-years included; coded "1" for 1975–2006 unless otherwise stated)

Albania (1992–2006), Argentina (1975, 1984–2006), Austria, Azerbaijan (2000–2006), Benin (2002–2006), Bolivia (1995–2006), Bosnia (2003–2006), Botswana, Bulgaria (1991–2006), Burkina Faso (1995–2006), Burundi (2005–2006), Cambodia (2002–2006), Cameroon (1996–2006), Republic of Congo (1994–1997, 2003–2006), Costa Rica, Croatia (1993–2006), Denmark, Dominican Republic, Ecuador (1980–1996), Egypt (1996–2006), El Salvador (1983–2006), Equatorial Guinea (2000–2006), Estonia (1993–2006), Fiji (1975–1987, 1994–1997), Finland, France, Gabon (1997–2006), Gambia (1975–1994, 1997–2006), Georgia (1993–1994, 1998–2006), Greece, Guatemala (1995–2006), Guinea (2005–2006), Guyana (1994–2006), Haiti (1991, 1995–1997, 2001–2003, 2006), Honduras (1982–2006), Hungary (1991–2006), Israel, Italy, Ivory Coast (2001–2006), Jamaica (1975–1983, 1987–2006), South Korea (1995–2006), Latvia (1994–2006), Lebanon (1998–2006), Lesotho (2005–2006), Lithuania (1995–2006), Macedonia (1996–2006), Madagascar (1995–2006), Malawi (2000–2005), Mali (1993–2006), Mexico, Moldova (1995–2006), Mongolia (2001–2006), Morocco (1997–2006), Mozambique (1998–2006), Namibia (1992–2006), Nepal (1992–2001), Nicaragua (1990–2006), Niger (2004–2006), Panama (1985–2006), Paraguay (1991–2006), Peru (1981–2006), Portugal (1977–2006), Romania (1992–2006), Russia (2000–2006), Senegal (1990–2006), Sierra Leone (2004–2006), Slovak Republic (1993–2006), Slovenia (1994–2006), Spain (1979–2006), Sri Lanka (1975–1990), Sweden, Taiwan (1993–2006), Tanzania (1996–2006), Thailand (1976, 1980–2006), Trinidad, Tunisia (1995–2006), Ukraine (1998–2006), United Kingdom, Uzbekistan (2000–2006), Venezuela, Yemen (2001–2006), Yugoslavia (1993–2001), Zambia (1992–2006), Zimbabwe (1984–2006)

Density—as endogenous, since public goods distribution can potentially impact their levels. These models also correct for panel effects, autocorrelation (with a lagged dependent variable), and heteroscedasticity (with robust standard errors). But the primary threat to inference that the GMM models can help overcome is non-stationarity, which is present in several of our health-related dependent variables. One downside, however, is that because GMM models generate dozens of instruments, they put tremendous pressure on our data and reduce our degrees of freedom. As a result, we only present GMM models for those dependent variables with a unit root (assessed using a Fisher test).

Results

If our theory is correct, we would expect the coefficient for *Democratic Decentralization, Party Centralization* to be statistically significant and associated with better governance. We would also expect the coefficient for *Democratic Decentralization, Party Decentralization* to be associated with better governance, but to be either smaller or statistically insignificant.

In other words, when *Democratic Decentralization, Party Centralization* is statistically significant, we can be confident that the combination of democratic decentralization and party centralization produces better outcomes than the residual category of no local elections. And, when, in these same models, *Democratic Decentralization, Party Decentralization* is not statistically different from having no elections, we have an especially strong reason to see the role of party centralization as critical. This combination of significance for our first variable and insignificance for our second, which appears often in our models, is the best evidence for our arguments.

Our theory would be borne out even more strongly if we could show that there is a statistically significant difference between our two primary explanatory variables. If there is such a difference, we can be confident not only that *Democratic Decentralization, Party Centralization* has a more certain impact on governance than *Democratic Decentralization, Party Decentralization*, but also that the impact of the two variables is clearly distinct.

In table 5, we present full models for two example dependent variables; these show each of the statistical techniques that we adopt (including GMM for the non-stationary drinking water dependent variable) and use our full panoply of controls. In table 6, we present the results of our primary independent variables for the fourteen education policy variables, and we do the same in table 7 for the sixteen health policy variables. The results in both tables are drawn from full random effects models like those shown in table 5, but we omit the control variables for space reasons. In all three tables, we also show the results of a *t*-test comparing the differential effects of our two primary independent variables.

Overall, the empirical results provide strong support for our hypotheses. Taking first the fully reported models in table 5, the *Democratic Decentralization, Party Centralization* variable is statistically significant in four of the five estimations and in the expected direction but not significant in the other, while the *Democratic Decentralization, Party Decentralization* variable is not statistically significant in any of the models. These results support our expectations that combining municipal elections with centralized parties is particularly felicitous for public goods provision. And the size of these predicted effects is also worthy of consideration. Model 1, for instance, indicates that the combination of democratic decentralization and party centralization produces a 2.20 percentage point reduction in children out of school, and the fixed effects estimation in Model 2 more than doubles that predicted effect.

As noted above, such a finding, while clearly supportive of our theory, is of course distinct from evidence that the effects of *Democratic Decentralization, Party Centralization*, and those of *Democratic Decentralization, Party Decentralization* are statistically different from one another. We test this relationship for each of the

Table 5. Example results of the complete models

Variable	Model 1 Y= children out of school (N= 1,182, 118 countries) Random Effects with AR(1) correction	Model 2 Y= children out of school (N= 1,182, 118 countries) Fixed effects with country and year dummies	Model 3 Y= people using basic drinking water—Urban (N= 1,043, 128 countries) Random effects with AR(1) correction	Model 4 Y= people using basic drinking water—Urban (N= 1,043, 128 countries) Fixed effects with country and year dummies	Model 5 Y= people using basic drinking water—Urban (N= 814, 126 countries) Arellano-Bond GMM with lagged Y
Democratic decentralization, party centralization (lagged)	−2.20***	−5.51***	0.328***	0.659	0.257**
	(0.761)	(1.86)	(0.120)	(0.773)	(0.122)
Democratic decentralization, party decentralization (lagged)	−0.281	−.288	−.090	−0.632	0.201
	(1.04)	(1.78)	(.173)	(0.606)	(0.125)
Significant difference?	Yes(**)	Yes (***)	Yes (**)		No
Municipal centrally appointed executive (lagged)	−3.28*	−3.60*	−.355	−0.911	0.027
	(1.80)	(1.86)	(.278)	(0.573)	(0.100)
Municipal directly elected executive (lagged)	0.622	2.70*	−0.024	0.130	−0.094*
	(0.929)	(1.59)	(0.155)	(0.627)	(0.051)
Municipal plurality (lagged)	2.07**	3.81***	−0.205*	−0.321	−0.086
	(0.827)	(1.47)	(0.124)	(0.456)	(0.054)
Regional elections (lagged)	1.39*	2.67*	0.125	0.631*	0.106*
	(0.844)	(1.49)	(0.115)	(0.336)	(0.064)
Programmatic parties (lagged)	−0.861*	−1.55	0.081	0.119	0.025
	(0.454)	(1.47)	(0.068)	(0.167)	(0.029)
Polity (lagged)	−0.031	0.088	−0.006	−0.076*	0.005
	(.069)	(0.179)	(0.011)	(0.044)	(0.006)

Subnational taxation power (lagged)	1.20	3.70	−0.130	0.125	−0.123*
	(1.13)	(2.70)	(0.193)	(0.590)	(0.065)
Subnational education power (lagged)	0.203	9.44***			
	(1.73)	(1.77)			
Fertility (lagged)	7.49***	2.47	−1.71***	−0.020	−0.164***
	(0.685)	(2.81)	(0.164)	(0.700)	(0.049)
Logged GDP per capita (lagged)	−2.11**	−1.29	1.90***	2.50***	0.045
	(0.867)	(4.86)	(0.183)	(0.754)	(0.054)
Logged population density (lagged)	−1.13*	−38.71***	1.74***	13.97***	0.035
	(0.601)	(12.43)	(0.300)	(3.31)	(0.037)
North and Central America	3.69		−0.146		0.021
	(3.01)		(1.72)		(0.111)
South America	−2.94		3.21*		0.138
	(3.18)		(1.77)		(0.090)
Sub-Saharan Africa	3.86		−5.86***		−0.152
	(2.93)		(1.32)		(0.110)
Middle East and North Africa	4.03		−1.95		−0.163
	(3.39)		(1.77)		(0.131)
Europe	11.29***		−1.04		−0.234***
	(2.57)		(1.31)		(0.085)
R^2	0.690	0.044	0.686	0.108	

***$P < 0.01$, **$P < 0.05$, *$P < 0.10$. All tests are two-tailed. Standard errors are in parenthesis.

Table 6. Results summary for the education models

Variable	Model 1 Y= Primary school enrollment adjusted (N= 857, 113 countries)	Model 2 Y= Primary school enrollment adjusted—female (N= 754, 108 countries)	Model 3 Y = Primary school enrollment—net (N= 857, 113 countries)	Model 4 Y = Primary school enrollment—net female (N= 754, 108 countries)	Model 5 Y = Primary school enrollment—gender parity (N= 1,603, 128 countries)	Model 6 Y= Children out of school (N= 1,182, 118 countries)	Model 7 Y= Children out of school—female (N= 1,006, 114 countries)
Democratic Decentralization, Party Centralization (Lagged)	2.81*** (0.982)	3.29*** (1.07)	2.70*** (0.980)	3.19*** (1.06)	0.008** (0.003)	−2.20*** (0.761)	−2.68*** (0.859)
Democratic Decentralization, Party Decentralization (Lagged)	0.577 (1.29)	0.457 (1.40)	0.603 (1.28)	0.618 (1.39)	0.003 (0.005)	−0.281 (1.04)	−0.608 (1.13)
Significant Difference?	Yes (*)	Yes (**)	Yes (*)	Yes (*)	No	Yes (**)	Yes (**)

Variable	Model 8 Y = net intake ratio in Grade 1 (N = 430, 82 countries)	Model 9 Y = adult literacy rate (N = 195, 93 countries)	Model 10 Y = persistence to fifth grade (N = 756, 92 countries)	Model 11 Y = primary completion rate (N = 1,152, 118 countries)	Model 12 Y = primary completion rate—Female (N = 1,075, 113 countries)	Model 13 Y = govt education expenditure, % govt spending (N = 1,013, 120 countries)	Model 14 Y = govt primary education expenditure, % govt spending on Ed (N = 783, 104 countries)
Democratic decentralization, party centralization (lagged)	6.05***	3.37*	−1.20	0	1.48	−0.283	3.65***
	(2.36)	(1.90)	(1.37)	(.999)	(1.10)	(.515)	(1.23)
Democratic decentralization, party decentralization (lagged)	4.04	0.524	−2.20	−1.11	−.279	−0.575	4.10**
	(2.97)	(2.87)	(1.95)	(1.37)	(1.54)	(.648)	(1.84)
Significant difference?	No	No					No

***$P < 0.01$, **$P < 0.05$, *$P < 0.10$. All tests are two-tailed. Standard errors are in parenthesis. All estimates are generated from random effects models with the full panoply of controls.

Table 7. Results summary for the health models

Variable	Model 1 Y = infant mortality rate(N = 1,929, 135 countries)	Model 2 Y= public health expenditure—% GDP (N = 1,633, 135 countries)	Model 3 Y= public health expenditure—% govt spending (N = 1,628, 135 countries)	Model 4 Y= children receiving DPT immunization (N = 1,926, 135 countries)	Model 5 Y= children receiving Hepatitis B immunization (N = 986, 114 countries)	Model 6 Y = children receiving measles immunization (N = 1,929, 135 countries)	Model 7 Y=improved sanitation facilities (N = 1,895, 134 countries)	Model 8 Y= improved sanitation facilities- urban (N = 1,905, 134 countries)
Democratic decentralization, party centralization (lagged)	−0.966*** (.307)	0.282*** (0.095)	0.975*** (0.343)	1.73* (0.991)	22.53*** (3.89)	0.684 (1.02)	−0.015 (0.114)	0.169* (0.092)
Democratic decentralization, party decentralization (lagged)	−0.246 (.405)	0.149 (0.129)	0.571 (0.453)	0.337 (1.26)	13.08*** (4.10)	0.745 (1.29)	0.128 (0.149)	0.078 (.121)
Significant difference?	Yes (*)	No	No	No	Yes (***)			No

Variable	Model 9 Y= improved water source (N = 1923, 135 countries)	Model 10 Y= improved water source—Urban (N = 1,927, 135 countries)	Model 11 Y = people using basic drinking water (N = 1,075, 133 countries)	Model 12 Y = people using basic drinking water—Urban (N = 1,043, 128 countries)	Model 13 Y = people using basic sanitation (N = 1,075, 126 countries)	Model 14 Y = people using basic sanitation—Urban (N = 1,075, 113 countries)	Model 15 Y = TB detection rate (N = 857, 113 countries)	Model 16 Y = TB treatment success rate (N = 986, 128 countries)
Democratic decentralization, party centralization (lagged)	0.370***	0.276***	0.015	0.328***	0.134	0.656***	7.55***	1.25
	(0.121)	(0.106)	(0.196)	(0.120)	(0.226)	(0.184)	(1.62)	(1.90)
Democratic decentralization, party decentralization (lagged)	0.186	0.163	−0.425	−0.090	0.447	0.559**	7.77***	1.36
	(0.160)	(0.140)	(0.281)	(0.173)	(0.328)	(267)	(2.15)	(2.27)
Significant difference?	No	No		Yes (**)		No	No	

***P <0.01, **P <0.05, *P < 0.10. All tests are two-tailed. Standard errors are in parenthesis. All estimates are generated from random effects models with the full panoply of controls.

models and find that the two variables are indeed significantly different from one another in the first three models, either at the 5 percent or the 1 percent level.

Tables 6 and 7 provide even more compelling evidence for the relationships we theorize. In table 6, which presents results for the education models, the predicted effects are present in fully nine of the fourteen models. In each of these models, the first variable is associated with better governance and statistically significant, and the second is also associated with better governance but insignificant and smaller. Further, in six of these fourteen models, our argument is further borne out by the statistically significant difference between the two variables.

Table 7, showing the results for the health indicators, leads to similar conclusions. Here, ten of the sixteen models show *Democratic Decentralization, Party Centralization* to be significant and in the expected direction, and *Democratic Decentralization, Party Decentralization* to be in the expected direction but with a smaller coefficient. Further, in three of these models, the two variables are significantly different from one another.

In addition to the overall support that the models give to our argument, a few interesting nuances are worth highlighting. In table 6, it is notable that overall government expenditure on education is unrelated to either variable, but that expenditure on primary education is strongly associated with democratic decentralization. These results suggest that the key effect of devolving power to local government is not an overall increase in resources, but rather a shift in resources from secondary and higher education to primary education. This finding is consistent with the role of decentralization in improving accountability, given the central importance of primary education to most citizens in the developing world. It also makes sense given the greater role played by most municipal governments in early education.

It is also interesting to note that the effects of combining party centralization and democratic decentralization on health outcomes seem to be stronger in urban areas. Perhaps this is because of the reduced barriers to political organization in more densely populated areas. Further, in education policy, as expected, *Democratic Decentralization, Party Centralization* is associated with reduced gender bias, possibly because of the greater ability of women to demand services in these environments.

The models with country and year fixed effects (only shown for the two dependent variables in table 5) also support our theory, though somewhat less robustly. Of the thirty models for each dependent variable, nine present the first independent variable as significant in the expected direction and the second as insignificant or weaker, as expected. In six of these nine, the two primary independent variables are also significantly different from one another. The somewhat weaker results for the fixed effects models are likely due to the fact that our two primary independent variables change much more across countries than

they do across time. To be more specific, *Democratic Decentralization, Party Centralization* has a "between" standard deviation of 0.452 and a "within" standard deviation of only 0.216. The relevant numbers for *Democratic Decentralization, Party Decentralization* are similar at 0.438 and 0.146. As a result, the coefficients are less likely to be statistically significant with country fixed effects than with random effects. Finally, of the four models run with Arellano-Bond GMM (i.e., those with unit roots), two models show support for our theory.

Which control variables matter for our educational and health outcomes? Here, perhaps the most interesting findings are that municipalities with plurality electoral systems, as well as those with centrally appointed executives, tend to provide public service delivery that is inferior to those with proportional electoral systems and locally selected leaders. This effect is consistent with previous findings related to national-level institutions. In addition, as expected, there is reason to believe that programmatic parties will deliver better governance. More surprisingly, systems with directly elected, as opposed to assembly elected, mayors sometimes show inferior performance. This finding is very weak and inconsistent, however, and more research is needed to understand better the impact of direct executive election.

The variables coded at the regional level—*Regional Elections, Subnational Taxation Power*, and *Subnational Education Power*—are also sometimes associated with negative outcomes. This surprising finding may indicate that empowered regional governments sometimes weaken municipal authority. Again, more research will be necessary to elucidate fully these relationships. Likewise, the *Polity* variable lacks any consistent effect, probably due to its low variation in models that are already limited to systems with competitive elections. As expected, we find that all three economic and social controls—low fertility, high population density, and high GDP per capita—are strongly associated with positive health and education outcomes.

What can we say to summarize the results? The strongest implication of our theoretical model—yielding the strong decentralization theorem—is the welfare dominance of democratic decentralization with party centralization. The benefits of combining democratic decentralization with party centralization are well borne out in our empirical analyses. With the difficulty of measuring educational and health outcomes, particularly in the developing world, the robustness of the results provided here is striking. This is especially true given the complexity and specificity of local politics in different countries, the wide variety of dependent variables that we estimate, and the different country-years included in each of our models. Therefore, with a strong degree of certainty, we can conclude that the combination of local elections and national parties is superior for public goods delivery (other things equal), and that the existence of decentralized locally elected government,

even when national parties are not present, is in any case superior to a fully centralized system.

Conclusion

In this article, we examine which types of political institutions may be necessary to deliver the gains from decentralization predicted by much of the literature. We contend that decentralization will produce the best service delivery outcomes when centralized, national parties compete for office in locally elected governments. Democratic decentralization, we argue, provides the accountability and information necessary for the efficient creation of local public goods, while party centralization incentivizes the provision of such goods even when their benefits spill across jurisdictional boundaries.

To test our argument empirically, we create a large dataset of sub-national political institutions and use it to estimate a series of cross-national empirical analysis of educational and health outcomes. Our dataset is, to our knowledge, the first to compile measures of sub-national political institutions across a large set of countries. Our empirical findings provide support for our hypothesis. They show that the combination of municipal elections and party centralization tends to produce the best educational and health outcomes.

Our ultimate goal in this article is to understand better how the growing prevalence of decentralization, mediated by the structure of local political institutions, may impact the everyday lives of citizens around the world. We find that political institutions, which are typically ignored in the literature on fiscal decentralization that begins with Oates' (1972) decentralization theorem, may significantly influence the efficiency of decentralized systems.

Notes

The order of authors has been drawn randomly. We would like to thank Roger Myerson, Irfan Nooruddin, Craig Volden, Benjamin A. T. Graham, Maria Escobar-Lemmon, Gustavo Canavire-Baccarreza, Kyle Hanniman, and the anonymous reviewers for their helpful feedback. Our thanks also go to Daniel Kuthy and Vanja Petricevic for their work in coding our dataset, and to the International Center for Public Policy at Georgia State's Andrew Young School of Policy Studies for financing the coding. Finally, we would like to thank the members of the Deil Wright Awards committee for naming an earlier version of this work the best paper on federalism presented at the 2011 American Political Science Association Convention in Seattle. Replication data and instructions are available from the authors.

1. Note that, as discussed in detail in the empirical section, our concept of "party centralization" includes both party nationalization (the domination of local elections by national parties) and party centralization (the organizational control of these parties by central party leaders).

2. This literature is reviewed in Martinez-Vazquez, Lago-Peñas, and Sacchi (2016).
3. In the theory and practice of fiscal federalism, these externalities justify the use of conditional grants from the central to subnational governments.
4. In Ponce-Rodriguez et al. (2016), we identify the conditions under which party centralization and democratic decentralization together welfare dominate other political arrangements (for example, that voters vote according to policy issues, that voting is probabilistic, and that parties seek to maximize the probability of winning elections). We find that a marginal increase in local public goods (beyond the ideal policy of the average voter of the district) that seeks to internalize spillovers only occurs when the electoral gains associated with internalizing spillovers (which in our model are aligned with the society's welfare gains) outweigh the electoral (welfare) costs from a marginal loss of local accountability.
5. Our formal treatments of the theory, found in Ponce-Rodriguez et al. (2016, 2017), indicate that, in the presence of interjurisdictional spillovers, democratic decentralization is optimal for the provision of public goods when parties are centralized, as argued above. They also indicate that, under certain limited conditions, democratic decentralization can be efficient even when parties are decentralized (i.e., when primaries are open or open list proportional systems are organized centrally). At the sub-national level, however, we are unable to differentiate empirically between types of primaries and whether open list systems are more or less decentralized. For that reason, we compare centralized and decentralized parties in the aggregate. If our arguments are correct, an aggregate comparison of centralized and decentralized parties should reveal the expected differential effects.
6. Note that the extent of local party system nationalization can vary by municipality within individual countries, and that party centralization can vary by party within individual countries as well. There tends, all the same, to be a great deal of commonality in party system nationalization and party structure within a country, allowing for relatively straightforward coding in most cases. That said, when we encountered mixed cases, we went with what appeared to be the most common institutional structure in the country. We define national parties as those which tend to compete successfully at the national level and that draw significant support from more than one locale. In cases where all the available evidence pointed to national party domination of local elections, we assumed that more than 75 percent of seats were held by parties that compete across constituencies, even if detailed data were not available. Because of the range and complexity of the coding, a wide range of sources were used; a complete listing is available from the authors. Those country-years coded "1" on the primary dummy variable are listed in table 2, and we are very open to feedback by country experts on the accuracy of the coding.
7. Note that we are unable to create a dummy variable for the combination of party decentralization and democratic centralization because doing so would require coding nomination procedures in each country's national legislature, a task we have not undertaken here. In any case, our primary interest is in distinguishing how party centralization mitigates the impact of democratic decentralization, which can be assessed with the variables we develop here.

8. There is, of course, a wide ranging literature on the notion of "party inflation" (Cox 1999), but most measures are coded for a limited number of country years and deal either with the constituency distribution of party support or the difference in national and local party systems (see Bochsler 2010). Our interest concentrates instead on whether the same parties dominate national and local party systems, as well as on the internal organization of these parties. Note that our concept encompasses both party nationalization (i.e., Chhibber and Kollman 2004), by concerning itself with national versus local party competition, and party centralization (i.e., Carey and Shugart 1995), by examining the authority of national party leaders.

References

Arze del Granado, F. Javier, Jorge Martinez-Vazquez, and Robert M. McNab. 2016. Decentralized Governance, Expenditure Composition, and Preferences for Public Goods. *Public Finance Review* (online version) 3 Aug 2016.

Bardhan, Pranab. 2002. Decentralization of governance and development. *Journal of Economic Perspectives* 16 (4): 185–205.

Beazer, Quintin H. 2015. Political centralization and economic performance: Evidence from Russia. *Journal of Politics* 77 (1): 128–145.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh. 2001. New tools in comparative political economy: The database of political institutions. *World Bank Economic Review* 15 (1): 165–176.

Besley, Timothy, and Stephen Coate. 2003. Centralized versus decentralized provision of local public goods: A political economy approach. *Journal of Public Economics* 87: 2611–2637.

Bird, Richard M. and Francois Vaillancourt. 1998. Fiscal decentralization in developing countries: An overview. In *Fiscal Decentralization in Developing Countries*, ed. Richard M. Bird and Francois Vaillancourt. New York: Cambridge University Press.

Blundell, Richard and Stephen Bond. 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87: 115–143.

Bochsler, Daniel. 2010. Measuring party nationalization: A new gini-based indicator that corrects for the number of units. *Electoral Studies* 29 (1): 155–168.

Brancati, Dawn. 2009. *Peace by design: Managing intrastate conflict through decentralization.* New York: Oxford University Press.

Breton, Albert. 2002. An introduction to decentralization failure. In *Managing fiscal decentralization*, ed. Ehtisham Ahmad and Vito Tanzi. New York: Routledge.

Carey, John M. and Matthew Soberg Shugart. 1995. Incentives to cultivate a personal vote: A rank ordering of electoral formulas. *Electoral Studies* 14 (4): 417–439.

Cerniglia, Floriana and Riccarda Longaretti. 2013. Federalism, education-related public good and growth when agents are heterogeneous. *Journal of Economics* 109: 271–301.

Chhibber, Pradeep, and Ken Kollman. 2004. *The formation of national party systems: Federalism and party competition in Canada, Great Britain, India, and the United States*. New York: Princeton University Press.

Coppedge, Michael, John Gerring, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, et al. 2017. V-Dem [Country-Year/Country-Date] Dataset v7.1 Varieties of Democracy (V-Dem) Project.

Cox, Gary. 1999. Electoral rules and electoral coordination. *Annual Review of Political Science* 2: 145–161.

Davoodi, Hamid, and Heng-fu Zou. 1998. Fiscal decentralization and economic growth: A cross-country study. *Journal of Urban Economics* 43: 244–257.

Dickovick, J. Tyler. 2011. *Decentralization and recentralization in the developing world: Comparative studies from Africa and Latin America*. University Park: The Pennsylvania State University Press.

Egger, Peter, Marko Koethenbuerger, and Michael Smart. 2010. Electoral rules and incentive effects of fiscal transfers: Evidence from Germany. Documents de Treball de l'Institut d'Economia de Barcelona 2010/44.

Enikolopov, Ruben and Ekaterina Zhuravskaya. 2007. Decentralization and political institutions. *Journal of Public Economics* 91: 2261–2290.

Faguet, Jean-Paul, and Fabio Sanchez. 2008. Decentralization's effects on educational outcomes in Bolivia and Columbia. *World Development* 36 (7): 1294–1316.

Filippov, Mikhail, Peter C. Ordeshook, and Olga Shvetsova. 2004. *Designing federalism: A theory of self-sustainable federal institutions*. New York: Cambridge University Press.

Garman, Christopher, Stephen Haggard, and Eliza Willis. 2001. Fiscal decentralization: A political theory with Latin American cases. *World Politics* 53: 205–236.

Graham, Benjamin A. T. and Kaare Strøm. 2017. Variations in federalism: Explaining subnational policy authority (July 5, 2017). Available at SSRN: https://ssrn.com/abstract=2533599

Grindle, Merilee S. 2007. *Going local: Decentralization, democratization, and the promise of good governance*. Princeton: Princeton University Press.

Habibi, Nadir, Cindy Huang, Diego Miranda, Victoria Murillo, Gustav Ranis, Mainak Sarkar, and Frances Stewart. 2003. Decentralization and human development in Argentina. *Journal of Human Development and Capabilities* 4 (1): 73–101.

Hallerberg, Mark and Patrik Marier. 2004. Executive authority, the personal vote, and budget discipline in Latin American and Caribbean countries. *American Journal of Political Science* 48 (3): 571–587.

Hankla, Charles R. 2006. Party strength and international trade: A cross-national analysis. *Comparative Political Studies* 39 (9): 1133–1156.

Hankla, Charles R. 2009. When is fiscal decentralization good for governance?. *Publius: The Journal of Federalism* 39 (4): 632–665.

Hankla, Charles R. and Carrie Lynn Manning. 2017. How local elections can transform national politics: Evidence from Mozambique. *Publius* 47 (1): 49–76.

Hecock, R. Douglas. 2006. Electoral competition, globalization, and subnational education spending in Mexico, 1999-2004. *American Journal of Political Science* 50 (4): 950–961.

Heredia-Ortiz, Eunice. 2006. The impact of education decentralization on education output: A cross-country study. Dissertation, Department of Economics, Georgia State University.

Hicken, Allen, Ken Kollman, and Joel W. Simmons. 2015. Party system nationalization and the provision of public health services. *Political Science Research and Methods* 4 (3): 573–584.

Hicken, Allen and Joel W. Simmons. 2008. The personal vote and the efficiency of education spending. *American Journal of Political Science* 52 (1): 109–124.

Khemani, Stuti. 2007. The political economy of equalization transfers. In *Fiscal equalization: challenges in the design of intergovernmental transfers*, ed. Jorge Martinez-Vazquez and Bob Searle, 463–484. New York: Springer.

Kleider, Hanna. 2017. Redistributive policies in decentralized systems: Explaining the effect of decentralization on subnational welfare spending. Forthcoming at the *European Journal of Political Research*

Kyriacou, Andreas and Noemí Morral-Palacin. 2015. Regional inequalities and the electoral success of regional parties: Evidence from the OECD. *Publius* 45 (1): 3–23.

Lewis, Blaine. 1998. The impact of public infrastructure on municipal economic development: Empirical results from Kenya. *Review of Urban and Regional Development Studies* 10 (2): 142–456.

Lijphart, Arend. 1977. *Democracy in plural societies*. New Haven: Yale University Press.

Lockwood, Ben. 2002. Distributive politics and the benefits of decentralization. *Review of Economic Studies* 69 (2): 313–338.

Malesky, Edmund J., Cuong Viet Nguyen, and Anh Tran. 2014. The impact of recentralization on public services: A difference-in-difference analysis of the abolition of elected councils in Vietnam. *American Political Science Review* 108 (1): 144–168.

Manor, James. 1999. *The political economy of democratic decentralization*. Washington, DC: World Bank.

Marshall, Monty G. and Keith Jaggers. 2000. Polity IV project: Political regime characteristics and transitions, 1800-1999. *Dataset users manual*. College Park: University of Maryland, College Park.

Martinez-Vazquez, Jorge, Santiago Lago-Peñas, and Agnese Sacchi. 2016. The impact of fiscal decentralization: A survey. *Journal of Economic Surveys* (online version) 7 November 2016. doi:10.1111/joes.12182

Montero, Alfred P. and David J. Samuels, ed. 2004. *Decentralization and democracy in Latin America*. Notre Dame: Notre Dame Press.

Myerson, Roger B. 2006. Federalism and incentives for success of democracy. *Quarterly Journal of Political Science* 1: 3–23.

Mukherjee, Bumba. 2003. Political parties and the size of government in multiparty legislatures: Examining cross-country and panel data evidence. *Comparative Political Studies* 36 (6): 699–728.

Nielson, Daniel L. 2003. Supplying trade reform: Political institutions and liberalization in middle-income presidential democracies. *American Journal of Political Science* 47 (3): 470–491.

Oates, Wallace E. 1972. *Fiscal federalism*. New York: Harcourt, Brace, Jovanovich.

Parry, Taryn. 1997. Achieving balance in decentralization: A case study of education decentralization in Chile. *World Development* 25 (2): 211–225.

Ponce-Rodriguez, Raul, Charles R. Hankla, Jorge Martinez-Vazquez, and Eunice Heredia-Ortiz. 2016. Political institutions and federalism: A "Strong" decentralization theorem. Working Paper, International Center for Public Policy, Georgia State University.

———. 2017. The provision of local public goods in proportional electoral systems with closed and open party lists. Working Paper, International Center for Public Policy, Georgia State University.

Riker, William H. 1964. *Federalism: Origin, operation, significance*. Boston: Little Brown.

Roodman, David. 2009. How to do xtabond2: An introduction to difference and system GMM in stata. *The Stata Journal* 9 (1): 86–136.

Sabatini, Christopher. 2003. Decentralization and political parties. *Journal of Democracy* 14 (2): 138–150.

Shah, Anwar. 2003. Fiscal decentralization in transition economies and developing countries. In *Federalism in a changing world: Learning from each other*, ed. Raoul Blindenbacker and Arnold Koller. Ithaca: McGill-Queens University Press.

Simatupang, Renata. 2009. Evaluation of decentralization outcomes in Indonesia: Analysis of health and education sectors. Dissertation, Department of Economics, Georgia State University.

Solé-Ollé, A. and Esteller-Moré A. 2005. Does decentralization improve the efficiency in the allocation of public investment? Evidence from Spain, Working Paper 2005/5, Institut d'Economia de Barcelona.

Snyder, James M. Jr. and Michael M. Ting. 2002. An informational rationale for political parties. *American Journal of Political Science* 46 (1): 90–110.

Tanzi, Vito. 2002. Pitfalls on the road to fiscal decentralization. In *Managing fiscal decentralization*, ed. Ehtisham Ahmad and Vito Tanzi. New York: Routledge.

Tiebout, Charles M. 1956. A pure theory of local expenditure. *Journal of Political Economy* 64: 416–424.

Treisman, Daniel. 1996. The politics of intergovernmental transfers in post-Soviet Russia. *British Journal of Political Science* 26 (3): 299–335.

———. 2007. *The architecture of government: Rethinking political decentralization*. New York: Cambridge University Press.

Von Braun, Joachim and Ulrike Grote 2002. Does Decentralization Serve the Poor? In Ehtisham Ahmad and Vito Tanzi, eds. *Managing Fiscal Decentralization*. New York: Routledge.

Wibbels, Erik. 2005. *Federalism and the market: Intergovernmental competition and economic reform in the developing world*. New York: Cambridge University Press.

World Bank. 2010. *World Development Indicators*. Washington, DC: The World Bank.