Center for Latin American Studies
University of California, Berkeley

Decentralization and Access to Social Services in Colombia

Jean-Paul Faguet
Development Studies Institute and STICERD
London School of Economics

Fabio Sánchez
School of Economics
Universidad de los Andes

April 2009
Paper No. 26

WORKING PAPERS

clas.berkeley.edu
2334 Bowditch Street
Berkeley, CA 94720

 ISSN #1552-7786.

CONTENTS

dsflgkfdlg;kdf;lgk

1. INTRODUCTION

Across both the developing and developed worlds, policy reformers are experimenting with a wide array of federalist tools and incentives, ranging from administrative deconcentration to the full-scale devolution of power and resources to subnational levels of government (Manor 1999, World Bank 2004). Their efforts are based on theoretical arguments about decentralization's potential to improve the efficiency of public services and make government more accountable to the governed. Of these arguments, perhaps the most important—and common—is that decentralization will improve the quality of public sector outcomes by "bringing government closer to the people." This somewhat vague phrase can be unpacked into three effects that decentralization is meant to have that are conceptually separable, albeit interrelated. Decentralization:

i. places more and/or better information in the hands of public officials;

ii. increases the voice and participation of citizens in the government process; and

iii. improves the accountability, and hence responsiveness, of public servants to citizens.

All of these effects, it is claimed, come about as a result of the creation of functionally independent local governments that are physically closer to their electorates than central government and whose political fortunes are in the hands of those who benefit—or suffer—from the local services they provide. If "bringing government closer to the people" leads to improved information, voice and participation, and accountability in public decision-making, then local public services should improve as a result. Services can be improved in two broad ways: (a) by lowering costs through higher productive efficiency and less corruption; and (b) by enhancing quality, interpreted to include making services better-suited to local needs and conditions. Improved services, in turn, should lead to more intensive use by local citizens and thence to better substantive outcomes. Examples of better substantive outcomes might include higher test scores in education and lower mortality rates in health.

Oddly, very few studies attempt to test this argument directly. This is odder still when one considers the vast size of the decentralization literature and the frequency with which it invokes the argument. Only three studies that we know of address the link between decentralization and substantive outcomes directly and with rigorous quantitative evidence. Galiani, Gertler, and Schargrodsky (2008) investigate evidence from a natural experiment in Argentina and find that decentralization of school control from central to provincial governments had a positive impact on student test scores. The poorest, however, did not gain, and indeed may have lost. Habibi et al. (2007), also studying Argentina, find that increasing devolution to the provinces led to sustained improvements in human development. Infant mortality fell and educational retention rates (from primary to secondary school) rose as decentralization deepened. And Barankay and Lockwood (2007) find that greater decentralization of education to Swiss cantons is associated with higher educational attainment, allowing Swiss boys to close the gender gap with girls.

Other recent empirical studies ask the related question of whether decentralization improves local information or abets elite capture. Galasso and Ravallion (2005) use household and community level data to study results from the Food-for-Education (FFE) program in Bangladesh. They find that information on individual productivity differences is reasonably common knowledge within villages. FFE proves to be mildly pro-poor—per capita allocations are higher for the poor than the non-poor—and it is the intra-village (as opposed to inter-village) component that has the largest effect. Bardhan and Mookherjee (2006) test for elite capture in eighty-nine villages in West Bengal. They find little evidence of elite capture in the allocation of private goods. Public goods projects, however, do exhibit capture. They theorize that this is because public goods are inherently less transparent—it is less clear than for private goods who gets how much. Alderman (2000) finds that local government poverty targeting exceeds that which could be expected based on proxy indicators alone. Local governments appear to be using information not available to outsiders. And lastly, Loboguerrero (2008) finds that the effects of decentralization on local economic growth in Colombia depend on the governance structure of

municipalities. Where local authorities have better information on local needs, resources will be allocated in the sectors with the highest rate of return, promoting growth. Where bad governance prevails, resources will flow to less efficient sectors, facilitating corruption and waste and ultimately leading to lower growth.

This paper adds to the evidence on decentralization's effects on public sector outcomes by examining access to primary services in Colombia. We use an original database to investigate decentralization's effects on public school enrollments and public health insurance coverage of the poor. To our knowledge, this is the first paper to address these questions with a rigorous quantitative approach. We find this curious given that the first three studies mentioned above go further, investigating decentralization's effects on substantive outcomes (e.g. test scores, infant mortality) as opposed to public service outcomes (e.g. school enrollment, insurance coverage). Indeed, ideally we too would have focused on substantive outcomes. But as with most countries, data limitations do not yet allow this for Colombia. So we focus instead on the closest outcome indicators available, on the assumption that higher enrollments and expanded access to health care will lead to better substantive educational and health outcomes for citizens.

Colombia is an interesting case worthy of study for three reasons. First, unlike many countries that have passed decentralization laws, Colombia implemented a significant reform vigorously, with large, measurable effects on public finances and domestic politics. We provide evidence of the former below. Second, the quantity and quality of subnational data available for Colombia are particularly high and demand to be exploited. Thirdly, and more subtly, it is our view that much—perhaps most—of the huge decentralization literature is plagued by an excess of cross-country comparison coupled with a lack of methodological and quantitative rigor. Too much of the empirical literature is based upon: (a) large-N cross-country studies, which suffer from problems of data comparability and multiple institutional, historical, and other external factors that are not properly controlled, or (b) small-N studies of decentralization

in one or a few countries, based on evidence that is limited, anecdotal, and rarely goes beyond descriptive statistics. Like the papers cited above, our study avoids these methodological pitfalls by conducting a large-N study on a single country, Colombia. This allows us to focus in depth on the process and institutional context of reform and probe its effects with a large amount of high-quality data. By studying decentralization in this way, we can combine the formal rigor and generality of large-N approaches with the detailed knowledge and analytical nuance of small-N studies, while avoiding variation in the deep structural factors that bedevil cross-country work in this field.

The rest of the paper is organized as follows. Section 2 reviews the Colombian decentralization program, focusing on its legal and budgetary aspects, and provides descriptive statistics for public investment flows and access to education and health services during the period immediately following decentralization. Section 3 models the joint provision of local public goods as a Stackelberg follower game in which political competition provides local governments with better information on local preferences, but central government is more productive. Section 4 presents our quantitative methodology. Section 5 examines whether decentralization increased school enrollment and access to health care in Colombia with detailed econometric evidence. Section 6 concludes.

2. DECENTRALIZATION IN COLOMBIA

2.1 THE DECENTRALIZATION PROGRAM

Unlike countries where decentralization was implemented very quickly and with limited public debate, such as Bolivia (Faguet 2004), the Colombian decentralization process took some twenty-five years. Until the early 1990s, progress was slow and often stalled, as debates waxed and waned about loosening the reigns of a highly centralized administrative apparatus inherited from the Spanish crown. Colombia's mayors and governors were then directly named by central government; governors in particular were the president's *hombres de confianza* (trusted men),

and carried out his will in the regions. But over time the proponents of reform grew in strength. Reform deepened, moving from the fiscal and bureaucratic to the political. Eventually, this slow process led to the constitutional reform of 1991. Ceballos and Hoyos (2004) identify three broad phases of decentralization:

Phase 1 began in the late 1970s and included a number of fiscal measures aimed at strengthening municipal finances. Laws 14 (1983) and 12 (1986) were most important, assigning increased powers of tax collection to municipalities, including especially sales tax, and establishing parameters for the investment of these funds. Locally raised municipal "own resources," the use of which is unfettered by regional or central governments, grew dramatically as a result (see Figure 1).

Phase 2, beginning in the mid-1980s, was more concerned with political and administrative matters. Amongst the most important of these measures was Law 11 of 1986, which regulated the popular election of mayors and sought to promote popular participation in local public decision-making via Juntas Administradoras Locales (Local Administrative Committees), amongst others. Reforms enshrined in the 1991 constitution—such as citizens' initiatives, municipal planning councils, open town meetings, the ability to revoke mayoral mandates, referenda, and popular consultations—deepened political decentralization further. The 1991 constitution also established the popular election of governors.

Phase 3 consisted of a number of laws that regulated the new constitution and other related fiscal and administrative reforms. These measures assigned greater responsibility to municipalities for the provision of public services and social investment and provided additional resources for the same by increasing central government transfers to local governments significantly. The laws leave local governments little discretion over transferred funds, mandating that the bulk should be spent on education and health. Automatic transfers to subnational governments rose from about 20 percent to over 40 percent of total government

spending, placing Colombia first in the region amongst countries with a unitary state and third overall behind the two big federal countries, Brazil and Argentina (Alesina et al., 2000).

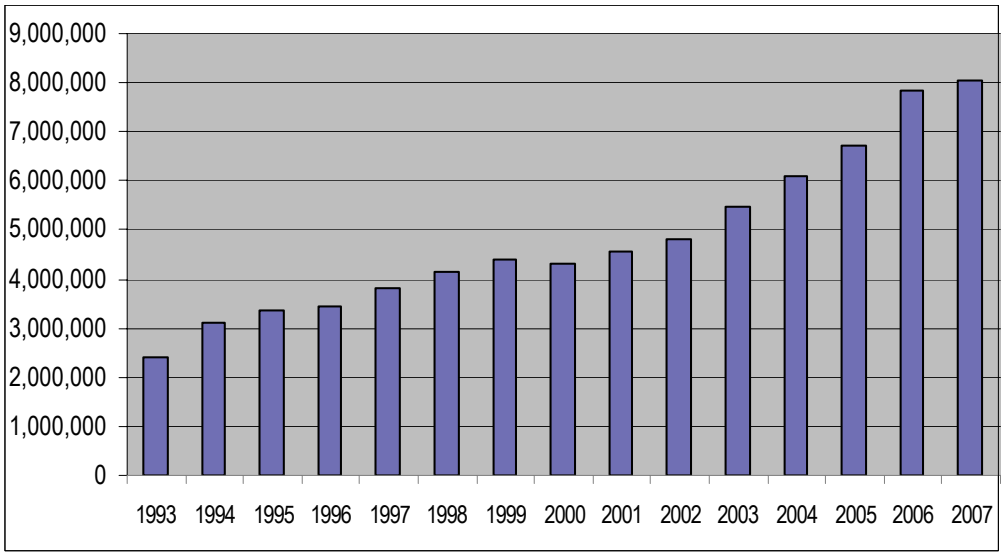
2.2 DESCRIPTIVE STATISTICS

Detailed municipal-level expenditure and investment data are available for Colombia from 1993 onwards. While reliable data on municipal revenues and transfers are available up to 2007, the most recent good data on expenditures and outcomes varies between 2003 and 2007, depending on sector. The lack of older data means that we cannot compare decentralized investment priorities to a relatively "pure" centralized regime (pre-1980s). The characteristics of Colombia's reform process, marked by gradualism and long-term change, make this less of a problem. As discussed above, a number of key decentralizing mechanisms—such as citizens' initiatives, referenda, mayoral recall, and increased resource transfers—were only put in place with the 1991 constitutional reform and accompanying regulations. These transferred resources and authority to municipalities gradually over time. Hence the outlines of Colombia's decentralization "package" became fully clear only in 1992-93, setting off a process that deepened thereafter. Indeed, the empirical measures of decentralization that we use below all show monotonically increasing levels of decentralization throughout the period. Hence, hereafter we treat the beginning of the period (1993-94) as years with relatively high centralization and the end of the period (2004-07) as years with relatively high decentralization.

The aggregate effect of a quarter-century of political and fiscal reforms was a large increase in the political authority and operational independence of Colombia's municipal governments, accompanied by a huge rise in the resources they controlled. Municipalities were allowed to raise significant taxes and issue public debt, and could spend these resources as they chose. This point is important to our identification strategy, below. The latter gave local authorities a strong incentive to increase local tax receipts, which they did with much success as Figure 1 shows. Central-to-local government transfers also increased strongly—by 139 percent over the same

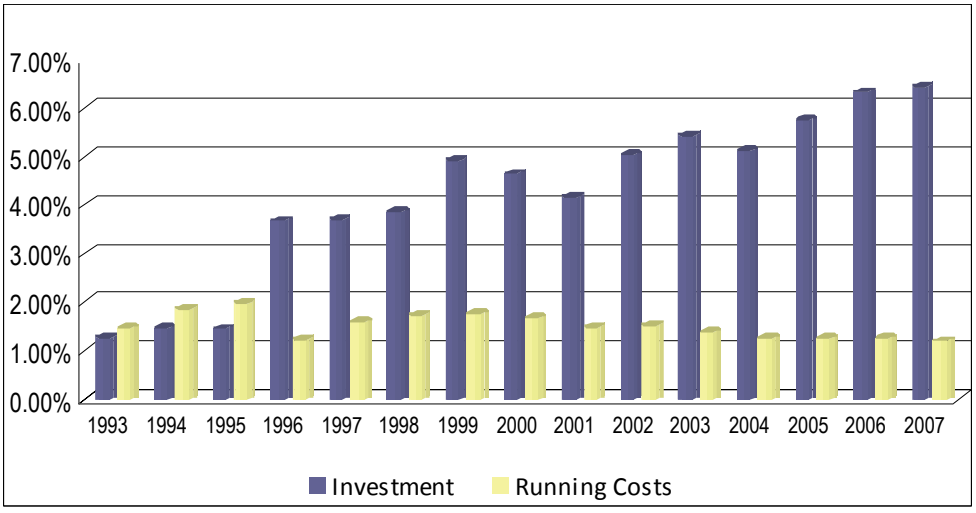
period. Overall municipal expenditures and investments rose from 2.7 percent to 7.6 percent of GDP over a decade, as detailed in Figure 2. This huge rise was due entirely to increased investment, while running costs declined significantly after 1995.[1]

Figure 1: Municipal Tax Receipts (constant 2007 pesos)



Source: National Planning Department; original calculations.

Figure 2: Municipal Expenditure and Investment (%GDP)

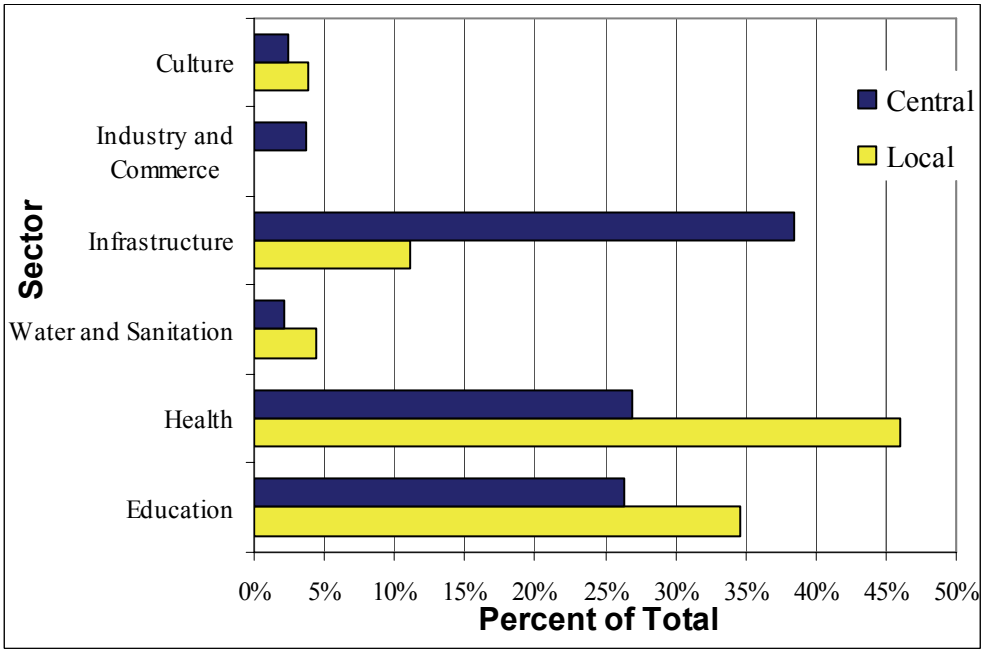


Source: National Planning Department; original calculations.

[1] Colombia's public accounts classify such items as teachers' and health workers' salaries as investments and not running costs.

How were these resources invested? In order to compare like with like, Figure 3 provides a sectoral breakdown of central government investment in 1994 alongside local government investment *of own resources* in 2003. The differences are large. Central government's largest category, at 38 percent of the total, is infrastructure, whereas local government's largest is health, followed by education, which together comprise 81 percent of the local investment budget. The broader pattern of dark and light bars shows a clear shift in public sector priorities, and resources, away from infrastructure and industry and commerce, into health, education, and water and sanitation.

Figure 3: Central vs. Local Government Investment

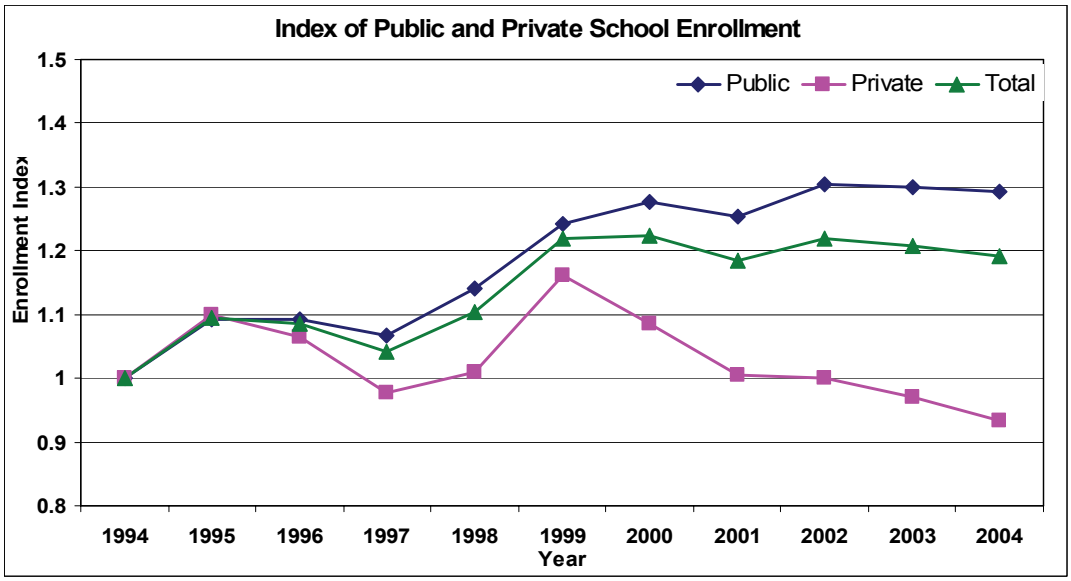


Source: National Planning Department; original calculations.

Lastly, is there any descriptive evidence of changes in education and health outcomes? We focus on school attendance and access to the public health system. Figure 4 shows enrollment data over the decade for public and private schools, with enrollment in 1994 indexed to one At the outset, public and private enrollment trends are quite similar. After 1996 an increasing gap opens up between them, although they follow similar up and down trends. After 1999, however,

slopes diverge, leading to a large gap between the two educational systems. Decentralization coincides with a 20 percent increase in total school enrollment, unequally distributed: public school enrollment increased 30 percent, while private school enrollment fell 7 percent. This suggests that local governments may have been able to run schools and promote attendance better than central government had before.

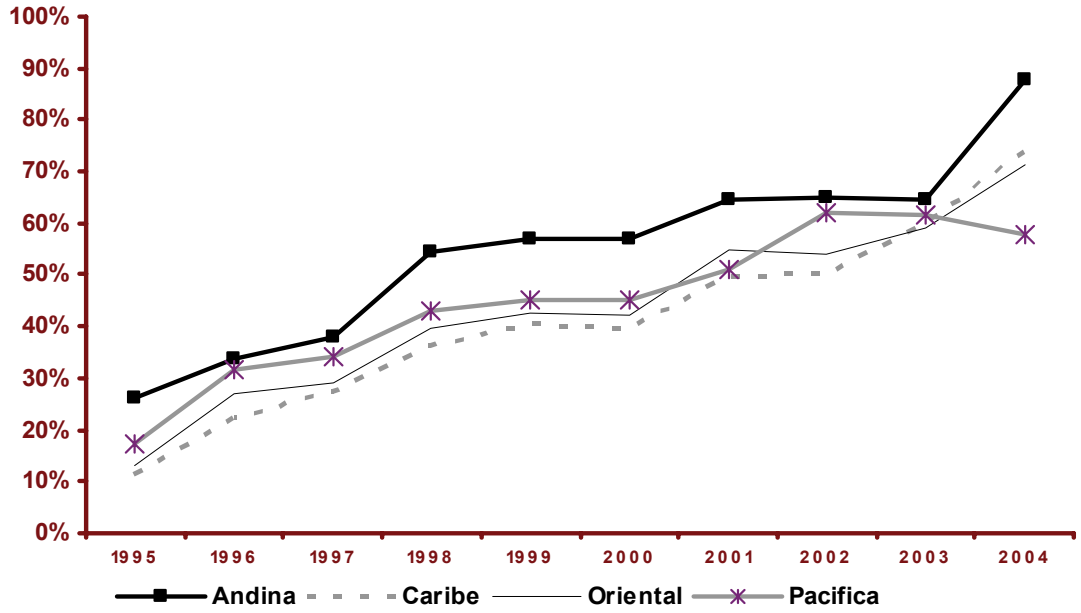
Figure 4: Decentralization and School Enrollment



Source: National Planning Department; original calculations.

Figure 5 shows the proportion of poor Colombians enrolled in the country's public health insurance scheme. The *regimen subsidiado de salud* is the means by which the state provides subsidized insurance covering primary and emergency health care for the poor. "Access" in this case is not a vague concept as it is in some surveys—e.g. population living within a health facility's catchment area—but, instead, has a quite specific meaning: individuals actively enrolled in the *regimen*, with name, address, and other details registered with the Ministry of Health. It is reasonable to assume that such individuals are aware of the public health system and of their eligibility to receive benefits from it. Hence "access" in this case means something closer to the everyday meaning of access.

Figure 5: Health Insurance Coverage Rate by Regions



Source: National Planning Department; original calculations.

Figure 5 shows that access to health care rose dramatically throughout Colombia. In the Andean region the proportion of poor people covered by the *regimen subsidiado* rose from 27 percent to almost 90 percent. The worst-performing region initially—the Caribbean—saw an even more dramatic gain, with access rising from about 11 percent of the poor to just over 70 percent. The period of deepening decentralization in Colombia thus coincided with a dramatic improvement in the access of the poor to health care, with increases of between 200 percent and 550 percent. Was decentralization responsible for these improvements? Descriptive statistics such as these are only suggestive. We return to this question with more rigor below.

3. A SIMPLE MODEL OF PUBLIC GOODS PROVISION

As in many countries, Colombia's local education and health services are jointly provided by central and local governments. The evidence in Section 5 below thus focuses on the effects that greater local control of the finance and administration of primary services has on service uptake by local citizens. But before delving into the empirics of the question, it is useful to formalize the underlying relationship in which center and periphery are involved. To better understand how

interactions between them affect provision of a common local public good, this section develops a simple model of joint provision, following Varian (1994) and Batina and Ihori (2005), in which central government moves first and local government is a Stackelberg follower in a dynamic game with full information.

The key tradeoff is that local governments have better information, but central government is more efficient in the production of public goods. The former is due to local political competition, which we can think of as election cycles and the lobbying, campaigning, and related dynamics that these entail, which provide local governments with information about local preferences. Political competition does not, by contrast, provide central government with useful information about local preferences. This is because national elections do not focus on local issues and specific local policy options in the way that local elections do. The latter half of the tradeoff may be thought of as traditional economies of scale or as technological or organizational advantages over local governments in the production of public goods. In many countries, for example, the most capable public sector professionals work for central, not local, government. This allows central agencies to design, plan, and implement interventions that are higher quality, more cost effective, or both.

Assume a country made up of T districts, each with population n_j where j denotes district. Individuals have linear utility $U_i = \ln(x_i) + \theta_i \ln(g_j)$ where x_i is the amount of private good consumed by individual i, g_j is the amount of public good available in district j, and θ_i is individual i's preference for public good g_j. Central and local governments' contributions to the common public good are denoted g_j^c and g_j^l, hence $g_j = g_j^c + g_j^l$. We denote the local median preference for the public good in district j as θ_{mj}. Local welfare is defined as median utility, $U_{mj} = \ln(x_{mj}) + \theta_{mj} \ln(g_j)$.

The function of government is to provide public goods, which it finances with a local head tax. Local government ascertains θ_{mj} with probability p_l and θ_{-mj} with probability $(1 - p_l)$, and central government ascertains θ_{mj} with probability p_c and θ_{-mj} with probability $(1 - p_c)$. Probability

varies as $p_{l,c} \in [0,1]$, and θ_{-mj} is defined as an unrestricted value of θ other than θ_{mj}. By assumption (see above), p_l increases with the amount and duration of political competition in a municipality, whereas p_c does not. For notational simplicity political competition is proxied by e, the number of elections since the inception of local government in a municipality. Hence:

$$p_l = f(e), \quad \frac{dp_l}{de} > 0, \text{ and } \quad \frac{dp_c}{de} = 0.$$

Central government's superior efficiency is modeled as a cost advantage in the provision of a given public good. The head tax needed to finance a given level of provision under central government is thus $\alpha g_j/n_j$ with $0<\alpha\leq 1$, lower than local government's tax g_j/n_j.

In this Stackelberg game, central government is the leader and announces its level of provision first. Local government observes this and calculates its optimal reaction, which it then provides. The solution is via backwards induction, and so we begin with local government's reaction. For any g_c that central government chooses, local government's problem in district j is

$$\max_{g^l}\left[\left(p_l\theta_m + (1-p_l)\theta_{-m}\right)\ln(g^l + g^c) - \frac{g^l}{n}\right] \tag{1}$$

where for convenience we drop subscripts j. We take first order conditions and simplify the expression without loss of generality by letting $\theta_{-m} = 0$. Rearranging provides local government's optimal response

$$g^{l*} = np_l\theta_m - g^c. \tag{2}$$

Central government's problem over T districts is

$$\max_{g_1,\ldots,g_T}\left[\sum_j\left(p_c\theta_{mj} + (1-p_c)\theta_{-mj}\right)\ln(g_j^{l*} + g_j^c) - \sum_j \alpha\frac{g_j^c}{n_j}\right]. \tag{3}$$

As this is a full information game, central government can calculate local governments' reactions as well as local governments can. The center thus anticipates optimal local responses and incorporates them into its initial maximization. Solving for district j, we take first

order conditions and once more simplify by letting let $\theta_{-m} = 0$. Rearranging, we get central government's optimal level of public good provision

$$g^{c*} = \frac{np_c\theta_m}{\alpha} - g^{l*} \tag{4}$$

which is similar to (2), but also invokes central government's superior efficiency.

Local government's share of public good provision can be represented as a fraction of central government's, $g_j^l = \gamma g_j^c$ ($\gamma \geq 0$; local provision can exceed central provision). Substituting for g^{l*} in (2) and rearranging yields

$$\gamma = \frac{np_l\theta_m}{g^c} - 1 \tag{5}$$

which is an expression for the relative contributions of local and central governments to total public good provision, g_l/g_c. This equation shows that the relative contribution of local government falls with g_c but rises with:

- population n, because public goods can be provided more cheaply when the tax base is larger;
- probability p_l that local government senses local preferences correctly; and
- median preference for the public good θ_m, implying that local government spends more on public goods that locals want more.

In short, local governments will provide a larger share of those public goods that local citizens prefer more because it assesses their preferences better. The presence of budget constraints means that local governments effectively concentrate their resources in these most-preferred goods and services, leaving less-preferred areas to mostly central provision. The model's assumption that p_l increases with the number of election cycles further implies that local government's share of locally-preferred goods will increase over time. This is consistent with the stylized facts presented above on enrollment and health coverage, and is the logical outcome of combining increasing information with stable local preferences. In terms of the empirical results

that follow, we can infer that citizens will most intensely use those public services in which the share of local provision is highest, as these are the services they prefer most, which preferences they have successfully conveyed to local governments.

4. METHODOLOGY

We exploit an original database of municipal characteristics using data obtained from the Agustín Codazzi Geography Institute, the National Administrative Department of Statistics, the National Electoral Office, the National Planning Department, and the Office of the Vice Presidency (summarized in the appendix). The database covers over 95 percent of Colombian municipalities for the period 1994-2004.[2] Within the Latin American context, Colombian municipal data are relatively abundant and detailed.[3] All information on budgets and financial flows is panel data. All other data (e.g. demographic, infrastructural, institutional, social) is cross-sectional, from national censuses and other national surveys. Our database retains data integrity by source.[4] We use similar variables from different sources in alternative specifications as robustness checks. The models prove robust.

We take advantage of the gradual nature of reform in Colombia to construct continuous variables that capture progressive reform and use panel estimations to incorporate a large information set. The availability of relatively high quality data further allows us to investigate decentralization's effects on real policy outputs and not just changes in resource inputs, as some other studies have done (e.g. Faguet 2004). Section 3 showed that decentralization in Colombia was associated with marked increases in public school enrollment and access of the poor to health care. In order to investigate this relationship more rigorously, we estimate a model of access to education and health

$$\Delta A_{mt} = \alpha + \zeta \mathbf{D}_{mt} + \beta \mathbf{R}_{mt} + \delta \mathbf{C}_{mt} + \varepsilon_{mt} \quad (6)$$

2. Health data are available for the period 1997-2004.
3. More data on a wider variety of local characteristics are collected in Colombia than any other country in the region bar Brazil.
4. Meaning we do not combine information from different sources into a single variable.

where ΔA is measured by the year-on-year change in student enrollment in state schools and the change in the share of the poor covered by public health insurance; D is a vector of measures of where municipalities lie on the decentralization-centralization continuum; R is a vector of measures of resource availability (i.e. supply factors) that might independently affect student enrollment; and C is a vector of socioeconomic and geographic controls, all indexed by municipality m and year t.

Our measures of decentralization, D, are based on municipal expenditures in education and health broken down by source of revenue. They measure different levels of autonomy in municipal decision-making and resource commitment. Because different sectors are financed in somewhat different ways, the variables we use in each cannot be identical. The first variable for both sectors is own resources—revenue raised from local taxes and charges—as a share of total expenditure. Such funds have no strings attached and are at the free disposal of local governments to spend as they like.

The second D variable in education is municipal independence transfers—the product of a dummy variable that records which municipalities are "certified" multiplied by the resource transfers that certification triggers to each municipality. Certified municipalities receive transfers directly from central government and not via departmental (akin to state or provincial) governments. Although most of these funds are destined for teachers' salaries, departments have discretion in how they disburse them to municipalities. Because certified municipalities avoid this intermediation, they are less subject to the interventions of higher levels of government. By interacting the certification dummy with resource flows, we generate an indicator that should be able to distinguish relatively small differences in municipal discretion and independence. Local governments that score higher in these two variables are substantively more decentralized than the rest. The second D variable in health is a dummy variable recording when municipalities have been certified independent.

The remaining variables record the share of total expenditure accounted for by central transfers allocated according to criteria that vary by sector. For education, central transfers were linked to poverty indices from 1994-2001.[5] In 2001, Law 715 changed the allocation criterion to the number of state school students. This was meant to tie central transfers more closely to school performance and educational outcomes. Hence, the third and fourth D variables in education. In health, the third D variable is transfers to independent municipalities as a proportion of those municipalities' total expenditures. The fourth variable is central transfers that finance local payrolls as explained above. These are channelled through departments and thus indicate higher levels of external intervention in local policy-making.

The fifth D variable in health is the share of funds from the Fondo de Solidaridad y Garantía (the Solidarity and Guaranty Fund, FOSYGA) in total health expenditures. FOSYGA is the central government's main channel for financing and monitoring the subsidized public health system at the local level. Municipalities with higher values in these indicators face stronger incentives set by the center and are thus much more "centralized." The coefficients of these D variables, $\zeta_1 ... \zeta_{4/5}$, are our main interest in these regressions. If decentralization drives increases in school enrollment, then we expect ζ_1 and ζ_2 to be positive and larger in magnitude than ζ_3 and ζ_4; if it increases access to health, we expect ζ_1, ζ_2, and ζ_3 to be positive and larger in magnitude than ζ_4 and ζ_5.

Other factors which might affect student enrollment and health access independently of decentralization include how richly a municipality funds its schools and hospitals and the quality of municipal human resources. We control for such effects with R—which includes a term for municipalities' general expenditure growth, a term for the lagged student-teacher ratio, a term for per capita expenditure on public education or health, and a term for the share of total municipal personnel who are university graduates—as a measure of local government's institutional capacity. By controlling for municipalities' overall level of expenditure in education and health, we ensure that the D terms capture the effect of decentralized authority over policy and resources and not how richly those services are funded.

5. The proportion of the local population above a predetermined level of unsatisfied basic needs.

Lastly, the variables in C control for municipal size, wealth, and unemployment. We also include measures of a municipality's displaced population, separated between those that receive migratory flows and those that expel them, as rough proxies for how much a locality has been impacted by Colombia's armed conflict. Three final terms—the gross enrollment rate, the proportion of the school-age population attending private schools, and lagged health insurance coverage amongst the poor—capture level effects and complementarities between public and private enrollment.

We estimate using random effects but with year and departmental dummies. We prefer this to the usual fixed effects model for three reasons. First, our LHS variable (ΔA) is the percentage change in school enrollments and health coverage. While there are good reasons why levels of either variable might vary systematically by municipality, implying fixed effects, this is not true of the first difference. Hence, there is no intuitive case for fixed effects. Second, a Hausman test shows that random effects estimates are consistent.[6] And third, we explicitly control for those fixed effects that our knowledge of the Colombian context leads us to think are a relevant source of variation: departmental and year fixed effects. We see no benefit from controlling further for individual municipal fixed effects, only a significant efficiency loss.

The specification in (6) is based on the theory that a given level of expenditure will produce improved outputs when allocated and executed locally rather than centrally. In this case, outputs are measured as student enrollment rates and access of the poor to subsidized health care, and inputs are measured as locally-controlled resources. But there is the possibility of the opposite relationship, and hence endogeneity, if instead independently increasing enrollment rates are causing municipalities to spend more of their own resources on education and health. Therefore, we also estimate equation (6) instrumenting for D_1 with the log of two year lagged local tax revenues per capita.

[6] The Hausman test null hypotheses that "difference in coefficients—fixed versus random effects—are not systematic" is accepted for both sectors. For education chi2(1) = 0.02 with Prob>chi2 = 0.8997; for health chi2(1) = 0.21 with Prob>chi2 = 0.6449.

The economic logic for this instrument is twofold. One the one hand, higher local tax revenues imply greater resources that can be freely allocated through a budgeting process for health and education. In other words, the channel through which tax revenues affect education and health outcomes is decisions made in the local budgeting process. On the other hand, reverse causality cannot apply. There is no sense in which changes in school enrollments today should affect levels of per capita local taxes yesterday. Accordingly, two year lagged per capita taxes should have a high correlation with Own Resources/Total Education or Health Expenditures but no correlation with increases in student enrollment or health access. Pairwise correlations of the variables bear this out, with a tenfold difference in magnitude. We use 2SLS panel estimations.[7] A Sargan test confirms that two year lagged per-capita taxes is a suitable instrument for the share of own resources in total education and health spending.[8] Both sets of results are presented below.

5. EVIDENCE

Figures 6 and 7 provide results from our estimation of equation (6) for education and health. Both panel (OLS) and IV estimations are listed, instrumenting for own resources with the level of lagged per capita taxes in both sectors. The "IV 2" estimation, in which a second instrument is added, provides a Sargan test of overidentifying restrictions, which confirms that instruments and residuals are uncorrelated, and hence two year lagged local taxes are associated with exogenous variation in own resources. We also estimate the model for both sectors on a subset of municipalities with fewer than 20,000 inhabitants in order to focus on smaller, overwhelmingly rural localities.

7. Note that LHS data is not censored/truncated. Observed "zeros" are real zeros and not failures of measurement or excluded negative values. Hence a 2SLS panel estimation is appropriate. As a check, we also estimated the IV model with a Tobit first stage. The findings did not change.

5.1 EDUCATION

The first two measures of decentralization are positive and significant at the 1 percent level throughout. This provides strong evidence that public school enrollment rises as the share of own resources in total education expenditure rises and when municipalities are more independent of the center. Instrumental variable estimates of both coefficients are similarly significant but larger in size—own resources doubles—implying that OLS estimates are biased downwards. The magnitude of the effect estimated is relatively large. The coefficient implies that, ceteris paribus, a typical municipality that increases its share of education spending by one standard deviation will raise the growth rate of enrollment by almost its full mean value (equivalent to a 0.21 standard deviation increase; see data summary appendix).

The first negative measure of decentralization produces coefficients equal to zero throughout, while the fourth variable is positive and significant at the 1 percent level but smaller than own resources throughout. The difference between these coefficients becomes quite large in the IV models: the coefficient on own resources is twice that of statutory transfers in IV 1 and grows to three times as large for the sample of small municipalities. This implies that where central transfers form a large part of total expenditures, and hence municipalities face strong incentives set by the center, public enrollment increases but at a significantly slower rate than where own resources dominate. We interpret these results as evidence that decentralization of education has led to improved educational outcomes in Colombia, in the sense of more students attending school. By contrast, outcomes have improved much more slowly in those places where central control persists.

Figure 6: Decentralization's Effect on Public School Enrollments

Dependent Variable: Increase in Public School Enrollment

		Instrumenting for Own Resources		
Independent Variable	**OLS**	**IV 1**	**IV 2 ++**	**IV Sample: < 20,000 Inhabitants**
Decentralization Variables				
Own resources/	0.1461***	0.2954***	0.3134***	0.3187***
Total education expenditures	[0.0156]	[0.800]	[0.0805]	[0.1122]
Municipal independence transfers +	0.0542***	0.0688***	0.0693***	
	[0.0103]	[0.012]	[0.0127]	
Statutory transfers (poverty)/	-0.0225	0.0097	0.0081	-0.0336
Total education expenditures	[0.0185]	[0.0252]	[0.0254]	[0.0339]
Statutory transfers (no. of students)/	0.1241***	0.1462***	0.1262***	0.1119***
Total education expenditures	[0.0289]	[0.0312]	[0.0322]	[0.0410]
Resource Availability Variables				
Municipal expenditure growth	0.2076***	0.2045***	0.2058***	0.2037***
	[0.0065]	[0.0067]	[0.0068]	[0.0097]
Student - teacher ratio (lagged)	-0.0017***	-0.0018***	-0.0018***	-0.0015***
	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Per capita expenditure on	-0.1615***	-0.1683***	-0.1686***	-0.1836***
public education (ln)	[0.0048]	[0.0060]	[0.0059]	[0.0071]
University graduates as a share of	0.0253**	0.0202*	0.0197*	-0.0009
municipal personnel	[0.0104]	[0.0108]	[0.0108]	[0.0140]
Socioeconomic and Geographic Control Variables				
Population (ln)	-0.0214***	-0.0212***	-0.0214***	-0.0433***
	[0.0015]	[0.0015]	[0.0015]	[0.0033]
Poverty rate	0.0003***	0.0003***	0.0003***	0.0004***
	[0.00006]	[0.00006]	[0.00006]	[0.00008]
Unemployment rate (departmental)	-0.0414***	-0.0379***	-0.0408***	-0.0437**
	[0.0137]	[0.0138]	[0.0139]	[0.0195]
Displaced population, receiving	-0.0893	-0.0789	-0.0759	0.0479
municipalities	[0.1240]	[0.1243]	[0.1243]	[0.1488]
Displaced population, expelling	-0.1808***	-0.1767***	-0.1742***	-0.2146***
municipalities	[0.0455]	[0.0457]	[0.0457]	[0.0550]
Public school gross enrollment rate	-0.0490***	-0.0498***	-0.0507***	-0.0598***
(lagged)(% of school-age population)	[0.0029]	[0.0029]	[0.0029]	[0.0040]
Private enrollment rate (% of school-age	0.3908***	0.3505***	0.3460***	0.2388***
pop. in private school)(ln., lagged)	[0.0460]	[0.050]	[0.0508]	[0.0663]
Constant	2.4533***	2.5526***	2.5571***	2.9698***
	[0.0730]	[0.0838]	[0.0825]	[0.1049]

Year fixed effects	yes	yes	yes	yes
Department fixed effects	yes	yes	yes	yes
Observations	10553	10553	10481	6756
Groups	1081	1081	1073	693
Instruments				
Per capita local taxes (t-1)		0.0146***	0.0148***	0.0126***
		[0.0007]	[0.0007]	[0.0008]
Gini of land value			-0.0098*	
			[0.0053]	
Endogeneity test		3.64	4.25	3.68
Chi-sq(1) p-value		0.056	0.039	0.055
Sargan statistic			0.97	
Chi-sq(1) p-value			0.32	
F-test for instruments		419.8	211.1	233.6
Prob > F		0.000	0.000	0.000

Panel regressions with robust standard errors; standard errors in parentheses
*,**,*** = coefficients significant at the 10%, 5% and 1% levels
+ No municipalities below 50,000 inhabitants have been certified "independent" yet.
++ Second instrument added to test for instrument exogeneity.

Supply-side measures of resources availability are mostly significant at the 1 percent level. They show that enrollment increases as expenditure grows and falls as the (lagged) student-teacher ratio rises, as one would expect. Curiously, the per capita expenditure term is also negative. This offers additional evidence that raising student numbers is not a simple question of increasing the size of the education budget but rather depends on other factors related to the quality of spending and allied decision-making about education policy. Instrumental variable estimates of these coefficients are of very similar size and retain their high significance. There is some evidence that enrollment rises with the quality of local government's human resources, although both the size and significance of these estimates fall in the IV models.

Amongst socioeconomic and geographic controls, results of interest include the first three coefficients, implying smaller, poorer districts with less unemployment saw greater increases in enrollment. These results have a high level of significance and increase in magnitude for smaller municipalities. Other control variables capturing the impact of forced migration due to Colombia's armed violence and enrollment level effects are also significant and unsurprising.

Perhaps the most interesting finding from this last group of results is that public enrollment rises with the share of students attending private schools, indicating complementarity between the public and private education systems. This contradicts the impression of substitution between public and private enrollment implied in Figure 4. Decentralization appears not to improve public schooling at the expense of private schools but rather to promote the idea of education more generally.

5.2 HEALTH

Our first two indicators of decentralization are positive and highly significant for health but much larger in size than education, implying that municipal autonomy has an even larger effect in the health sector. Both coefficients increase in the IV models, dramatically so in the case of own resources, which increases further still for the sample of small municipalities. The magnitude of the effect is much larger for health than for education. The IV 1 coefficient implies that, ceteris paribus, a typical municipality that increases its share of health expenditure by one standard deviation will increase health insurance coverage by 1.5 times its average value for all Colombian municipalities (equivalent to 0.72 standard deviations). In this sense, the effect of local financial effort is significant.

Paradoxically, the third decentralization term, transfers to independent municipalities, is negative and significant at the 1 percent level. This is doubly odd: not only are the first two terms positive, implying the opposite relationship, but the second of these measures a very similar concept—certification of municipal independence. These results call into question the underlying concept of municipal "independence," which certification is made by central government, and the main implication of which is a change in the disbursement mechanism for central resources. Henceforth we de-emphasize "municipal independence," relying instead on our principal measure of decentralization—own resources/total expenditures.

Statutory central transfers for salaries, a negative indicator of decentralization, is essentially equal to zero for the full sample. It becomes positive and significant for the small municipalities subsample, though of much smaller size than own resources. FOSYGA—the central government's most important means for funding and monitoring the local health system—is likewise insignificant for the full sample and significant only at the 10 percent level for the subsample, implying that central government's main health policy has little or no effect on municipal outcomes.

Overall these results are very similar to those for education. By far the largest effect is from our most important measure of decentralization. It implies that as municipalities fund health more from resources over which they have free disposal, health coverage of the poor increases strongly. Being certified "independent" by the center has an ambiguous effect, which calls into question the proper interpretation of "independence" (for both sectors). Central transfers for payrolls and via the center's main health program have essentially no effect across all municipalities. The former does increase health access in the smallest municipalities but with much smaller impact than own resources.

Amongst measures of resource availability, only municipal expenditure growth is significant (1 percent) and positive, as one would expect. This effect is replicated throughout. Per capita expenditures in health are essentially insignificant, implying again, although weakly, that increasing health coverage is not simply a matter of increasing funding. The quality of local government's human resources appears to have no effect.

Figure 7: Decentralization's Effect on Access of the Poor to Health Care

Dependent Variable: Increase in Health Insurance Amongst the Poor

		Instrumenting for Own Resources		
Independent Variable	**OLS**	**IV 1**	**IV 2 ++**	**IV Sample: < 20,000 Inhabitants**
Decentralization Variables				
Own resources/	0.7127***	3.8580***	3.7354***	5.3235***
Total health expenditures	[0.0617]	[1.1224]	[0.9713]	[1.5374]
Municipal independence dummy +	0.2945***	0.3600***	0.3575***	
	[0.0286]	[0.0411]	[0.0391]	
Transfers to independent municipalities/	-1.054***	-1.2758***	-1.2672***	
Total health expenditures	[0.1058]	[0.1482]	[0.1416]	
Statutory transfers/	0.0524*	0.0477	0.0479	0.3004***
Total health expenditures	[0.0280]	[0.0333]	[0.0329]	[0.0682]
Fosyga / Total health expanditure	0.0048	0.0007	0.0009	0.1074**
	[0.0278]	[0.0330]	[0.0327]	[0.0543]
Resource Availability Variables				
Municipal expenditure growth	0.0555***	0.0434***	0.0439***	0.0697***
	[0.0097]	[0.0123]	[0.0120]	[0.0174]
Per capita expenditure on	0.0098*	0.0055	0.0057	0.0211*
public health (ln)	[0.0059]	[0.0072]	[0.0070]	[0.0120]
University graduates as a share of	-0.0067	-0.0352	-0.0341	-0.0122
municipal personnel	[0.0201]	[0.0259]	[0.0251]	[0.0396]
Socioeconomic and Geographic Control Variables				
Population (ln)	0.0307***	0.0369***	0.0366***	0.0671***
	[0.0024]	[0.0036]	[0.0034]	[0.0105]
Poverty rate	0.0003***	0.0003***	0.0003***	-0.00005
	[0.0001]	[0.0001]	[0.0001]	[0.0002]
Unemployment rate (departmental)	-0.0641**	-0.0239	-0.0255	0.036571
	[0.0268]	[0.0349]	[0.0338]	[0.0622]
Displaced population, receiving	-0.1649	-0.152	-0.1524	-0.0326
municipalities	[0.1881]	[0.2232]	[0.2207]	[0.3244]
Displaced population, expelling	-0.0838	-0.0534	-0.0546	-0.0696
municipalities	[0.0698]	[0.0836]	[0.0824]	[0.1221]
Health insurance coverage amongst	-0.0339***	-0.0296***	-0.0298***	-0.0534***
the poor	[0.0061]	[0.0074]	[0.0073]	[0.0136]
Constant	-0.3854***	-0.3701***	-0.3668***	-0.9656***
	[0.0801]	[0.0983]	[0.0961]	[0.1959]
Year fixed effects	yes	yes	yes	yes
Department fixed effects	yes	yes	yes	yes
Observations	6265	6260	6260	3969
Groups	1068	1068	1068	693

Instruments				
Per capita local taxes (t-2)		0.0880***	0.0868***	0.0973***
		[0.0170]	[0.0170]	[0.0244]
Rate of attacks by the FARC			-0.0909***	
			[0.0319]	
Endogeneity test		11.184	13.501	23.483
Chi-sq(1) p-value		0.0008	0.0002	0.0000
Sargan statistic			0.052	
Chi-sq(1) p-value			0.8194	
F-test for instruments		26.53	17.34	15.87
Prob > F		0.0000	0.0000	0.0001

Panel regressions with robust standard errors; standard errors in parentheses
*,**,*** = coefficients significant at the 10%, 5% and 1% levels
+ No municipalities below 50,000 inhabitants have been certified "independent" yet.
++ Second instrument added to test for instrument exogeneity.

The most interesting of the socioeconomic and geographic controls mirrors a finding for education (above): health coverage rises with the poverty rate, implying higher coverage growth in poorer municipalities; oddly, this effect disappears in the subsample. Unlike education, coverage is higher in larger municipalities, perhaps reflecting indirectly the economies of scale available in health care. Of the remaining control variables only level effects of insurance coverage are clearly significant, and unsurprising. There is some evidence that access worsens with the unemployment rate, as one might expect. All other terms are insignificant.

6. CONCLUSIONS

The evidence implies that one of the most powerful and frequently cited arguments in the literature—that decentralization can improve the quality of public services and hence the flow of benefits to citizens—held true for the case of Colombia. In districts where educational finance and policy making were most under the control of local authorities and most free of central influence, enrollment increased strongly. In districts where educational finance was still based on centrally-controlled criteria, enrollment increases were between one-half and two-thirds smaller. These results control for the level of expenditure. Decentralization thus improved enrollment rates in public schools. It is striking that these changes were even more marked in poorer, smaller municipalities.

The evidence is similar for health. Where services were financed more out of local revenues over which local authorities have free disposal, health coverage of the poor increased strongly. Indeed, coverage in the Andean region approached 90 percent by 2004, a result that some far richer countries might justifiably envy. In districts where health was financed more out of the central government's health program, by contrast, access to health rose only one-seventeenth as much. These municipalities missed out on the vast majority of the gains that more decentralized municipalities enjoyed. As for education, coverage rose more strongly amongst poorer municipalities. For both sectors, our results are robust to alternative specifications.

It is notable that, for both sectors, increasing access is not a simple question of providing more resources. The coefficient on per capita expenditures is negative for education and essentially zero for health. Throwing money at the problem of access does not solve it. It is, rather, how the money is spent and by whom that seems to matter—the quality, and not quantity, of public expenditure. Our theoretical results shed additional light on this question. The typical dynamic in a decentralized system is that central government announces nationwide policies and programs and the budget allocations these entail. Local government observes these and then chooses how to allocate its own resources locally. Our model implies that elected local governments that are better informed about local needs and preferences will concentrate their resources in the areas their voters care about most.

The combination of empirical and theoretical results implies that decentralization is generating accountability in local government throughout much of Colombia. Political competition and local democracy provide local officials with the information and incentives they need to allocate their own resources in a manner responsive to voters' needs and to improve the quality of expenditure so as to maximize its impact. It is not surprising that the end result of this process is greater usage of local services by local citizens, who thus receive a greater flow of benefits from public expenditure. These findings contradict common claims that local government is too corrupt, institutionally weak, or prone to interest-group capture to improve upon central government's allocation of public resources.

APPENDIX: DATA SUMMARY

Variable*	Obs	Mean	Std. Dev.	Min	Max
Education (1994-2004)					
Increase in student enrollment in public schools	10553	0.0238	0.1091	-0.5214	1.5224
Own resources / Total education expenditures	10559	0.0406	0.0731	0	0.9938
Municipal independence	10559	0.0117	0.1045	0	1
Statutory transfers (poverty) / Total education expenditures	10559	0.1744	0.1344	0	0.6580
Statutory transfers (no. of students) / Total education expenditures	10559	0.0351	0.0732	0	0.9960
Municipal expenditure growth	10559	0.0537	0.1688	-0.7263	1.8967
Per capita expenditure on public education (ln)	10559	13.7073	0.3643	11.8198	15.5100
Student/Teacher ratio (lagged)	10559	22.3558	9.1899	0	446.0
University graduates as a share of municipal personnel	10559	0.0696	0.1008	0	0.8937
Population (ln)	10559	9.6355	1.0456	6.3297	15.7657
Unsatisfied basic needs	10559	45.3104	22.2733	1.1293	105.2663
Displaced population, receiving municipalities	10559	0.0014	0.0087	0	0.3503
Displaced population, expelling municipalities	10559	0.0056	0.0245	0	0.7788
Unemployment rate (departmental)	10559	0.1270	0.0849	0.03	0.9990
Public-school gross enrollment rate (lagged) (% of school-age population)	10559	0.9720	0.3906	0.1	2.5000
Private enrollment rate (% school-age pop. in private schools)(ln, lagged)	10559	0.0133	0.0266	0	0.4532
Per capita local taxes (ln)	10559	-4.4642	1.2134	-9.3527	-0.5045
Health (1997-2004)					
Increase in health insurance amongst the poor	6266	0.0829	0.1732	-0.4976	2.4013
Own resources / Total health expenditures	6267	0.0090	0.0321	0	0.8778
Municipal independence	6267	0.0206	0.1420	0	1
Statutory transfers / Total health expenditures	6267	0.2718	0.0875	0	0.7368
Transfers to independent municipalities / Total health expenditures	6267	0.0047	0.0375	0	0.5530
Fosyga / Total health expanditure	6267	0.1443	0.0818	0	0.5529
Municipal expenditure growth	6267	0.0308	0.2179	-0.6820	3.1490
Per capita expenditure on public health (ln)	6267	11.9546	0.5395	8.9660	14.5126
University graduates as a share of municipal personnel	6267	0.0695	0.1010	0	0.8937
Population (ln)	6266	9.6477	1.0588	6.3297	15.7657
Unsatisfied basic needs	6267	42.8152	22.6682	1.1293	104.2634
Displaced population, receiving municipalities	6267	0.0023	0.0112	0	0.3503
Displaced population, expelling municipalities	6267	0.0090	0.0313	0	0.7788
Unemployment rate (departmental)	6267	0.1417	0.0795	0.050	0.9990
% coverage of public health insurance	6267	0.5915	0.4981	0.025	6.8081
Per capita local taxes (ln)	6262	0.0071	0.0239	0.000	0.5450

* Municipal-level expenditure data for education are available from 1994, but only from 1997 for health. Hence we separate data summaries by sector and time periods.

REFERENCES

Acemoglu, D., S. Johnson and J. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." American Economic Review, 91: 1369-401.

Alderman, H. 2002. "Do local officials know something we don't? Decentralization of targeted transfers in Albania." Journal of Public Economics, 83: 375-404.

Alesina, A., A. Carrasquilla, and J.J. Echavarría. 2000. "Decentralization in Colombia." Fedesarrollo Working Paper No. 15. Bogotá: Fedesarrollo.

Bardhan, P., and D. Mookherjee. 2006. "Pro-poor targeting and accountability of local governments in West Bengal." Journal of Development Economics, 79: 303-27.

Barankay, I. and B. Lockwood. 2007. "Decentralization and the productive efficiency of government: Evidence from Swiss cantons." Journal of Public Economics, 91: 1197–1218.

Batina, R.G. and T. Ihori. 2005. Public Goods: Theories and Evidence. New York: Springer.

Ceballos, M., and D. Hoyos. 2004. "Tendencias del comportamiento electoral y descentralización en los municipios de Colombia, 1988-2000." Crisis States Program Working Paper No. 57, London School of Economics.

Faguet, J.P. 2004. "Does decentralization increase responsiveness to local needs? Evidence from Bolivia." Journal of Public Economics, 88: 867-894.

Galasso, E. and M. Ravallion. 2005. "Decentralized targeting of an antipoverty program." Journal of Public Economics, 89: 705-27.

Galiani, S., P. Gertler, and E. Schargrodsky. 2008. "School Decentralization: Helping the Good Get Better, but Leaving the Poor Behind." Journal of Public Economics, 92: 2106–2120.

Habibi, N., C. Huang, D. Miranda, V. Murillo, G. Ranis, M. Sarkar, and F. Stewart. 2003. "Decentralization and Human Development in Argentina." Journal of Human Development, 4: 73-101.

Loboguerrero, A. 2008. Decentralization in Colombia: Why Do Localities Respond to Fiscal Transfers in a Different Way? Ph.D. Dissertation, University of California at Los Angeles.

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

Sánchez, F. and A. Diaz. 2007. "Los efectos sociales del conflicto armado interno" in Fabio Sánchez (ed.) Las Cuentas de la Violencia, Bogotá: Editorial Norma.

Sokoloff, K. and S. Engerman. 2000. "Institutions, Factor Endowments, and Paths of Development in the New World." Journal of Economic Perspectives, 14: 217- 232.

Varian, H. 1994. "Sequential Contributions to Public Goods." Journal of Public Economics, 53: 165-186.

World Bank. 2004. World Development Report 2004: Making Services Work for Poor People. New York: Oxford University Press.

TITLES IN THE CLAS WORKING PAPER SERIES

No. 1: Vilmar Faria and Eduardo Graeff, Progressive Governance for the 21st Century: The Brazilian Experience, 2001.

No. 2: Vinod K. Aggarwal and Ralph H. Espach, Diverging Trade Strategies in Latin America: An Analytical Framework, 2003.

No. 3: Juan Gabriel Tokatlian, The United States and Illegal Crops in Colombia: The Tragic Mistake of Futile Fumigation, 2003.

No. 4: Alcides Costa Vaz, Trade Strategies in the Context of Economic Regionalism: The Case of Mercosur, 2003.

No. 5: Paulo Paiva and Ricardo Gazel, MERCOSUR Economic Issues: Successes, Failures and Unfinished Business, 2003.

No. 6: Peter Smith, Cycles of Electoral Democracy in Latin America, 1900-2000, 2004.

No. 7: Harley Shaiken, Work, Development and Globalization, 2004.

No. 8: Gabriela Delamata, The Organizations of Unemployed Workers in Greater Buenos Aires, 2004.

No. 9: Kirsten Sehnbruch, From the Quantity to the Quality of Employment: An Application of the Capability Approach to the Chilean Labor Market, 2004.

No. 10: Jorge Arrate, La evolución política de Chile (1988–2003), 2004.

No. 11: Jorge Wilheim, Urban Planning: Innovations From Brazil, 2004.

No. 12: Kirsten Sehnbruch, Privatized Unemployment Insurance, 2004.

No. 13: Kevin P. Gallagher, Economic Integration and the Environment in Mexico, 2005.

No. 14: Kevin P. Gallagher, FDI as a Sustainable Development Strategy: Evidence from Mexican Manufacturing, 2005.

No. 15: Anna Zalik, Re-Regulating the Mexican Gulf, 2006.

No. 17: Jenny Martinez and Aryeh Neier, Torture, Human Rights, and Terrorism, 2007.

No. 18: Thomas W. Laqueur and Francine Masiello, Art and Violence, 2007.

No. 19: Wendy Muse Sinek, Coalitional Choices and Strategic Challenges: The Landless Movement in Brazil, 1970–2005, 2007.

No. 20: Kevin P. Gallagher and Roberto Porzecanski, Climbing Up the Technology Ladder? High-Technology Exports in China and Latin America, 2008.

No. 21: James Holston, Dangerous Spaces of Citizenship: Gang Talk, Rights Talk, and Rule of Law in Brazil, 2008.

No. 22: Glauco Arbix, Innovative Firms in Three Emerging Economies: Comparing the Brazilian, Mexican, and Argentinean Industrial Elite, 2008.

No. 23: René Davids, Mythical Terrain and the Building of Mexico's UNAM, 2008.

No. 24: Jean-Paul Faguet, Governance from Below in Bolivia: A Theory of Local Government with Two Empirical Tests, 2009.

No. 25: Sarah Hines, et al., After the Water War: Contemporary Political Culture in Cochabamba, Bolivia, 2009.

No. 26: Jean-Paul Faguet and Fabio Sánchez, Decentralization and Access to Social Services in Colombia, 2009.

No. 27: Kirsten Sehnbruch, A Record Number of Conflicts? Michelle Bachelet's Inheritance of Unresolved Economic Issues, 2009.

TITLES IN THE CLAS POLICY PAPER SERIES

No. 1: Mary E. Kelly and Alberto Székely, Modernizing the International Boundary and Water Commission, 2004.

No. 2: Gilbert Cedillo, A Social, Public Safety, and Security Argument for Licensing Undocumented Drivers, 2004.

No. 3: Mariclaire Acosta, The Women of Ciudad Juárez, 2005.

No. 4: David Shields, Pemex: Problems and Policy Options, 2006.

No. 5: Micah Lang, et al., Meeting the Need for Safe Drinking Water in Rural Mexico through Point-of-Use Treatment

No. 6: David R. Ayón, Long Road to the *Voto Postal*: Mexican Policy and People of Mexican Origin in the U.S.

No. 7: Philip Martin, Global and U.S. Immigration: Patterns, Issues, and Outlook, 2008.

No. 8: David Shields, Mexico's Deteriorating Oil Outlook: Implications and Energy Options for the Future, 2008.

ORDERING INFORMATION

To order papers from the CLAS Working Papers or Policy Papers series, send a check or money order for US $5.00 made out to the UC Regents along with the title and/or serial number to:

Working Papers Series
Center for Latin American Studies
2334 Bowditch Street
Berkeley, CA 94720

WWW.CLAS.BERKELEY.EDU