The Design and Administration of Intergovernmental Transfers

Fiscal Decentralization in Latin America

Donald R. Winkler
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Donald R. Winkler

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FOREWORD

The World Bank has long provided advice on macroeconomic policy to its member countries, but only recently has there been increasing demand for advice on intergovernmental fiscal relations within countries. This demand is a result of the decentralization policies adopted by a number of borrowers, especially in Latin America and the Caribbean.

While each country’s history, politics, and institutions affect importantly the design of intergovernmental fiscal policies, the experience of countries which have already decentralized the provision and finance of public services provide some generalizable lessons. This discussion paper evaluates this experience, especially in Latin America, and, also, evaluates critically sector-specific alternatives for intergovernmental finance. This discussion paper is likely to be helpful to policy makers responsible for the design and administration of sector-specific intergovernmental transfers.

Donald R. Winkler is a public finance economist in the Technical Department of the Latin American and Caribbean region and was a professor of public administration prior to joining the World Bank. As founder and editor for several years of California Policy Choices, he has been a first-hand observer of the intricacies and unintended consequences of changing intergovernmental fiscal relations.

Sri-ram Aiyer
Director
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ABSTRACT

This paper examines the design and administration of intergovernmental transfers in newly decentralizing governments. Even in decentralized systems, central governments have continuing objectives related to the efficiency and equity of service provision by subnational governments. The paper evaluates Latin America experience using sector-specific transfers for education, health, and rural roads in light of these objectives and simulates alternative grant designs. The paper recommends wider use of well-designed sector specific transfers but emphasizes how weak administrative capacity of both the central and subnational governments seriously constrains the use of incentives and conditions in grants. Given these administrative weaknesses, the development of mechanisms to foster accountability by local government to local citizens is especially important, and the central government can play an important role in providing the information required for citizens to monitor the provision and financial management of local services.
### Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CAC</td>
<td>Citizen Advisory Committee</td>
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<tr>
<td>COPLADES</td>
<td>State Committees of Planning for Development/ Comites Estatales de Planeación para el Desarrollo</td>
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<tr>
<td>CUD</td>
<td>Single Development Agreements/ Convenios Unicos de Desarrollo</td>
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<tr>
<td>EDUCO</td>
<td>Education with the Participation of the Community/ Educación con Participación de la Comunidad</td>
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<tr>
<td>FAPEM</td>
<td>Fee-for-Service System for Reimbursing Municipal Health Clinics/ Facturación por Atención Prestada en Establecimientos Municipalizados</td>
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<tr>
<td>FMS</td>
<td>Municipal Solidarity Fund/ Fondo Municipal de Solidaridad</td>
</tr>
<tr>
<td>FNCV</td>
<td>Rural Roads National Fund/ Fondo Nacional de Caminos Vecinales</td>
</tr>
<tr>
<td>GAO</td>
<td>General Accounting Office of the U.S. Congress</td>
</tr>
<tr>
<td>HSAS</td>
<td>Health Service Areas</td>
</tr>
<tr>
<td>IVA</td>
<td>National Sales Tax/ Impuesto de Valor Agregado</td>
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<tr>
<td>LO</td>
<td>Local Organization</td>
</tr>
<tr>
<td>LSC</td>
<td>Local School Council</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>OMB</td>
<td>Office of Management and the Budget of the U.S. President</td>
</tr>
<tr>
<td>SIF</td>
<td>Social Investment Fund</td>
</tr>
<tr>
<td>SUDS</td>
<td>Unified and Decentralized Health System/ Sistema Unificado e Decentralizado de Saude</td>
</tr>
<tr>
<td>SUS</td>
<td>Single Health System/ Sistema Unificado de Saude</td>
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<tr>
<td>USGAO</td>
<td>United States General Accounting Office</td>
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Executive Summary

1. Historically, government in the Latin America and Caribbean Region has been highly centralized. In the past decade, a few countries have legislated devolution and sharing of important responsibilities to subnational governments, and, currently, most countries are either implementing that legislation or planning new decentralized arrangements. Paradoxically, decentralization, which reduces the powers of the central government, requires that the central government play a strong role in ensuring an appropriate enabling environment for its success. An important characteristic of decentralized government almost anywhere in the world is a system of intergovernmental transfers from the center to regional and local jurisdictions. These transfers serve many functions, including that of being a central government policy tool to ensure that decentralized services with important national public good characteristics or substantial interjurisdictional spillovers are provided and distributed efficiently and equitably.

2. This study reviews the principles and practice of designing and administering sector-specific intergovernmental transfers. Resource constraints have required that the scope of the study be limited to selected issues and sectors. Thus, some important intergovernmental issues--such as contributions of subnational governments to fiscal deficits, administrative difficulties local governments face in producing services, and strategies for implementing decentralization--are not treated in depth. Also, the study treats only intergovernmental policies and does not consider privatization as a policy option. The design of transfers and the resulting behavior of local governments is analyzed in three sectors--primary education, primary health care, and rural roads. Cross-sectional data on local governments in Chile and Colombia were assembled and analyzed for this analysis.

3. The scope of this study has also been constrained by the paucity of scholarly literature on the topic, especially as related to developing countries. While there is a general public finance literature on grant design, it offers few practical insights for the design of grants in a developing country context, and, indeed, developed country transfer systems bear little resemblance to the recommendations of this literature. The relatively small number of categorical grant designs in LAC combined with limited information on subnational governments has resulted in very few published analyses of LAC experience; the most useful assessments of LAC grants is found in World Bank sector work completed over the past couple of years. The administration of intergovernmental transfers has, also, received very little attention in the literature; the most useful analyses of this topic were generated by the U.S. General Accounting
Office in the 1970s in response to administrative problems found in the large and complex U.S. federal grant system. The administrative problems of grants are rarely the focus of studies by LAC scholars.

The LAC Context.

4. The effort to decentralize in LAC confronts serious obstacles both at the central and the subnational levels. Revenue-raising is highly centralized, and subnational governments have very little discretionary authority to raise revenues and do a poor job of collecting revenues from the few sources they control. Expenditure assignments are often not clear and are poorly implemented. Central government sectoral ministries have not been restructured to support decentralization. Intergovernmental transfers tend to either take the form of revenue-sharing or ad hoc, negotiated block grants, neither of which provide adequate incentives for efficiency and accountability. Information on the finance and performance of subnational governments is either lacking or out-of-date. Financial monitoring and review of subnational governments is either nonexistent or so intrusive as to seriously constrain their autonomy.

Finance and Provision Assignments.

5. Central governments have an important continuing role to play in a decentralized system. Within decentralized services, there are some normative, policy-setting, informational, and technical assistance functions which central government ministries should continue to perform; thus, decentralization requires a restructuring of central government ministries towards improved capacity in these areas and away from direct service provision.

6. For decentralized public services with significant national public good characteristics or where the benefits spill over jurisdictional boundaries, the central government has an additional role of ensuring the efficient and equitable provision of decentralized public services. These objectives can be pursued either through mandates and regulations on subnational governments or through intergovernmental grants, which combine incentives and grant conditionality.

7. Neither mandates nor incentive-based grants will function well if the finance and provision assignments across governments of specific services are not well-defined; if the information system does not generate timely reports on the financial and output performance of jurisdictions; and if there is no mechanism by which this performance can be systematically reviewed and penalties assessed in the case of deficient performance or rewards given for exceptional performance.

LAC Experience with Intergovernmental Transfers

8. The functioning of sector-specific intergovernmental transfers is evaluated for primary education, primary health care, and rural roads. There are three reasons for selecting these specific services. First, they are among those most frequently being decentralized to subnational governments in current LAC decentralization efforts. Second, when they are decentralized to
Examples of innovative sector-specific grant designs are identified for each of these three sectors, and the effects of these designs are analyzed. The lessons learned from this review are of general applicability to the Region. The cases selected for review are: primary education in Chile, primary health care in Chile, and rural roads in Colombia. All three grants are established by law and are reasonably transparent in their allocation. The formula for distributing primary education cash grants in Chile is set by law. In addition, municipalities receive less transparent, in-kind central government grants in the form of textbooks and school lunches for poor children. The procedure for reimbursing primary health care expenditures by municipalities in Chile is also set in law, but the allocation of total allowed reimbursements per municipality has until recently been determined at the discretion of central government regional administrators. Finally, the procedures for selecting projects and setting cost-sharing contributions for grants to municipalities for rural road construction and maintenance in Colombia are set in law, but the implementation details are left to the Rural Roads National Fund.

In primary education, Chile provides a per student grant to municipal schools, which on average covers 90 percent of costs. This grant establishes the national minimum education expenditure per pupil, and its high level results in a relatively high degree of equality in spending. But the high estimated elasticity of municipal education finance with respect to municipal general revenues results in significantly higher per pupil spending in municipalities with high fiscal capacity and a significant worsening in expenditure equality. The design of the grant provides an effective incentive for schools to minimize student absenteeism from class.

Chile reimburses municipalities for the cost of providing primary health care which mainly covers preventative and maternal and child health care. When this grant was first introduced, municipalities responded by rapidly expanding the delivery of health services. The consequent budget pressure on the central government led to reductions in reimbursement rates and ceilings on total transfers to each municipality; the result is that the central government on average covers 75 percent of total municipal health care spending. As with education, a relatively high elasticity of municipal health finance with respect to their general revenues generates inequalities in spending per capita or per beneficiary. The fact that reimbursement rates are smaller than the cost of providing services provides an incentive for municipalities to minimize service costs; this incentive is to some extent offset by the ability of municipalities to appeal to regional health administrators for an increase in transfers beyond the established ceiling.

In Colombia, municipalities prepare project proposals for rural roads, which are submitted to the Rural Roads National Fund for evaluation; the winning proposals are funded based on a matching grant rate established by formula. The matching rate is very low, and municipalities with high fiscal capacity receive larger grants on a per capita basis, in part due
to the fact that a municipality's fiscal capacity is used to determine what size project it could finance and maintain. The low matching rate means municipalities have little incentive to propose cost-effective projects, aside from competing successfully in the Fund's evaluation process. The fact that municipalities receive grants for construction but not routine maintenance provides an incentive to municipalities to under-maintain roads.

Alternative Grant Designs.

13. Central governments have multiple and conflicting objectives concerning the services provided by subnational governments in decentralized systems. The design of intergovernmental grants affects the degree to which these objectives are attained. The effects of grants in turn depend on the institutional context and the behavior of the grant recipients, the regional or local governments. Hence, grant effects, including tradeoffs between central government objectives, can only be analyzed in a country-specific and sector-specific context. A variety of alternative grant designs are simulated for primary education, primary health care, and rural roads, using data sets on municipalities in Chile and Colombia. These grant designs are defined in Chapter III.

14. For education, the design alternatives include a percentage equalizing grant where the size of the grant varies inversely with a municipality's fiscal capacity and a variable matching grant where the municipality's matching rate varies positively with its fiscal capacity; these alternatives are simulated with and without a minimum per pupil expenditure condition.

15. For health, the grant design alternatives include a health grant per capita similar to the existing education grant and an open-ended matching grant; again, both designs are simulated with the addition of a minimum per capita expenditure or maintenance of existing municipal health expenditure requirements.

16. For rural roads, the simulation is consistent with current decentralization legislation in Colombia which would require the regional governments to act as a pass-through agency to the municipalities. First, the size of the per capita grant to the regional government is simulated, using a number of different criteria. Second, the size of the matching rate to be applied on the project grants awarded municipalities by the regional governmental is simulated for one region; one formula uses only municipal fiscal capacity to determine the matching rate, while another formula includes poverty rates and fiscal effort in addition to fiscal capacity.

17. The simulations demonstrate that central government objectives are often conflicting, and determination of the single best grant formula requires that priorities be set on those objectives. In addition, the simulations provide evidence in support of several other conclusions: (1) a simple grant design can often attain central government objectives as well as a complex design; (2) price incentives, especially in the form of variable matching grants, can work as well as mandates in raising expenditures and contributions by grant recipients; (3) when using price incentives, the average matching rate has to be significant to realistically attain spending and finance objectives; (4) in the absence of appropriate incentives, regulations in the form of either
minimum expenditure mandates or maintenance of expenditure effort requirements are needed to prevent grant recipients from reducing their own financial effort; and (5) a central government can best leverage the effect of its transfers on total expenditures by including some measure of the local jurisdiction’s ability to finance, or fiscal capacity, in the grant formula.

Grant Administration.

18. Grant administration by the central government requires the capacity to design the grant for efficiency and equity; to write transparent implementing regulations; to monitor and review financial flows and related grant conditionality; to provide operational control and review of grant-funded programs; and to evaluate the distribution and impact of grants on performance. Most of these activities fall under the purview of the sectoral ministry, and some could be contracted if in-house capacity does not exist, but the important task of ensuring financial accountability to the central government typically lies outside the sectoral ministries and provides a serious constraint to both appropriate grant design and to decentralization. Strong public financial management is at least as important for decentralized as centralized systems of government.

19. The regional or local government receiving the grant also has important administrative responsibilities, especially in preparing proposals and keeping accurate and timely financial accounts that provide the information required for review and audit. Steps which could improve subnational government administrative capacity include: revised public administration laws to require modern financial accounting and auditing; earmarked portions of grant funds to cover administrative costs; the establishment of separate legal entities to receive funds and administer grant-funded programs; creation of central government-financed centers to administer the accounts of several small jurisdictions; and establishment of effective incentives for the provision of timely information.

Accountability.

20. One advantage of a decentralized system is the potential it offers for using the local beneficiaries or local citizenry to help monitor the finance and performance of grant-financed services provided by the subnational jurisdiction, including NGOs and community organizations. This requires an adequate governance mechanism at the local level and institutionalized citizen participation.

21. Cost-sharing and information play important roles in the relationship between citizen participation and accountability. Cost-sharing provides the stimulus for citizens to demand accountability from service providers, while information on financing, costs, and outputs provide the basis for objectively evaluating performance. In addition, case studies of effective citizen councils shows that they must have real decision-making authority, and they require training as to their appropriate roles and functions. The accumulated evidence to date suggests that requiring citizen participation as grant conditionality could improve accountability to
beneficiaries and could complement central government grant administration in helping realize the efficiency potential of decentralization.

Conclusions.

22. Decentralization offers the potential for efficiency gains and the danger of worsened equity. The central government can play an important role in establishing the enabling conditions for efficiency and in avoiding worsened equity through the appropriate assignment of expenditure and finance responsibilities and the appropriate design of intergovernmental transfers, especially for those locally-provided goods and services having national public good characteristics or large spillovers of benefits to other jurisdictions. Implementation of decentralization, including intergovernmental transfers, requires improvements in central government capacity, especially regarding financial management and the supply of public information on subnational government performance. In a decentralized system, accountability to the central government for the use of grant funds must be complemented by accountability by service providers to the community; cost-sharing and the establishment of citizen groups with real decision-making authority can strengthen local institutional accountability.

23. The Bank is financing a number of efforts important for the success of decentralization efforts: strengthening public financial management, encouraging the collection and public reporting of performance indicators, and encouraging citizen participation and the establishment of community organizations to provide services. The Bank has also in its policy dialogues with governments advocated the establishment of predictable and transparent intergovernmental transfers with incentives for sound financial management.

24. For the Bank to play its role in supporting government decentralization policies will require more of these same efforts, with increased attention to the design and administration of intergovernmental transfers at the sector level. Country decentralization policies and implementation strategies and the adequacy of the enabling environment for decentralization should be assessed when the country assistance strategy is formulated. Sector studies should assess decentralization policies and strategies of the sector, identify factors in the enabling environment outside the sectoral ministry’s control, and develop alternative means of strengthening sectoral accountability at the level of the jurisdiction providing the service. Sectoral projects which support decentralization should include an assessment of the design and administration of intergovernmental transfers. The Bank should continue to strongly encourage governments to adopt transparent, formula-driven intergovernmental grants.
I

Introduction

1. In recent years a number of countries in the Latin America and the Caribbean Region (LAC) have, often with World Bank support, initiated encouraging reforms of the state. These reforms seek to improve public sector effectiveness and efficiency, including redefining the role of the state. An important reform element in many countries of the Region is government decentralization. Subnational governments in LAC now account for 28.5 percent of total public sector expenditures, and this share continues to grow. While lower than the 47.6 percent average found in federal systems (e.g., Australia, India, U.S.), it is higher than that of strong unitary systems (e.g., 17.8 percent in France).

2. Decentralization includes a redefinition of the role of the central government with increased emphasis on setting policy, financing, and ensuring efficient and equitable provision of services by regional and local government. Decentralization offers the potential for improved public sector efficiency and accountability, but the lack of appropriate policies and weak intergovernmental institutions can lead to fiscal mismanagement, resource misallocation, and inequity in service provision. The principal instruments available to the central government to tackle these problems are fiscal transfer policies and strong financial management of the decentralized system.

3. To be successful, decentralization must improve public sector efficiency and, at least, not worsen equity. For some publicly financed goods and services, this can be accomplished by allowing subnational jurisdictions autonomy in determining expenditure levels and resource allocation. But other goods and services with significant interjurisdictional spillovers or national public good characteristics are unlikely to be provided either efficiently or equitably in the absence of central government sector-specific financing and policy setting. Primary education, primary health care, and rural roads are services which arguably fall in this category and which are examined in some detail in this study.

1 This paper is only concerned with the type of decentralization where finance and provision responsibilities are shared by two or more levels of government.
4. Some of the institutional requirements for successful decentralization for this category of goods and services are: (1) clear, stable revenue and expenditure assignments; (2) transparent and predictable service-specific intergovernmental transfers; (3) public information (i.e., available and accessible) on the finances, cost, and performance of the sector; and (4) governance structures which permit citizens to hold local or regional government officials accountable for sector performance. Paradoxically, decentralization, which reduces the powers of the central government, requires that the central government change the nature of its responsibilities and play a strong role in ensuring that these institutional requirements are met.

5. This study examines these requirements for selected sectors and countries in LAC. Chapter I concludes with a review of the possible efficiency and equity consequences of decentralization. Chapter II examines finance and provision assignments in primary education, primary health care, and rural roads. Chapter III defines alternative grant designs and evaluates selected LAC experience with categorical grants for these services. Chapter IV simulates alternative grant designs and their distributional impacts. Chapter V assesses the administrative requirements for categorical grants in aid. And Chapter VI looks at the role of governance structures, especially citizen participation, in ensuring accountability. Finally, Chapter VII summarizes the findings and recommendations of the study.

6. Resource and time constraints result in several important issues in decentralization and the role of government which are not treated in this paper, including: the impact of decentralization on fiscal deficits, the capacity of subnational governments to deliver services, the political economy of implementing decentralization policies, and transferring responsibility for financing and providing government services to the private sector. The design and administration of intergovernmental transfers can clearly affect fiscal deficits, modes of service delivery, and the political feasibility of the transfer of financing and service provision responsibilities, but each of these issues requires its own study.

A. Efficiency.

7. The promise of decentralization is improved efficiency in the delivery of those goods and services which can be provided and financed by subnational governments. This promise has four aspects. First, local (or subnational) provision and finance can make government more responsive to individual preferences. Second, local decision-makers can use information about jurisdiction-specific conditions and prices to deliver services more efficiently. Third, increasing the number of providers can result in innovations that reduce costs or improve service delivery. And, fourth, citizen perception of the opportunity costs of inefficient government can result in demands for accountability from the providers.

8. While the potential of decentralization for efficiency improvements appears large, a number of factors must exist for it to be realized. There must exist some governance structure or public choice mechanism (e.g., voting for local officials) by which local citizens can express their preferences. Three options are possible: (1) election of general government officials who make taxing and resource allocation decisions on behalf of the populace; (2) election of a
service-specific board which makes taxing and resource allocations for that service only; and (3)
direct democracy in which citizens vote on specific tax-expenditure referenda. All three options
entail some degree of competition for votes on the basis of cost and performance in delivering
public services. The central government can encourage the strengthening of public choice
mechanisms through the use of grant conditionality which requires citizen review and input to
the administrators of grant-financed services.

9. Given the public choice mechanism, the ability of citizens to hold locally-elected officials
accountable depends on the public information they have regarding cost and performance in the
delivery of local public goods and services. If citizens cannot inspect the financial statements
of the jurisdiction, they cannot make informed inquiries regarding the use of funds. If they
cannot observe the cost and performance of their jurisdiction's services relative to other
jurisdictions, they cannot effectively challenge local officials to do better. And if they cannot
inspect the local tax rolls, they cannot question arbitrary tax exemptions. The central
government has an important continuing role to play in producing and disseminating public
information and ensuring that citizens have access to the information required for accountability.

10. If the potential for satisfying local citizen demands is to be satisfied, local government
officials must have the authority to raise local revenues and, thus, determine local expenditure
levels. In the absence of this authority, local citizens must press their demands for increased
services at the level of the central (or regional) government; local authorities cannot be held
accountable for decisions they cannot make. Also, in the absence of this authority, citizens do
not fully perceive the linkage between increased services and the cost of providing those
services. They may perceive that, within an overall revenue constraint set by the central
government, increasing one service has an opportunity cost in terms of other services foregone,
but the linkage to their own tax bill is absent.

11. If local officials are to be held accountable for the efficiency and effectiveness with which
government services are delivered, they must have budgetary discretion, including the
recruitment and pay of personnel, the contracting of goods and services, and the composition
of local expenditures. While the legislation governing local public administration may set
overall guidelines for civil service protection, procurement and contracting, and minimum
service levels, the accountability of local officials and their potential to efficiently provide
services based on local conditions diminishes as budgetary discretion is reduced. If the potential
innovation benefits of decentralization are to be fully realized, local officials must also have the
discretion to choose to directly deliver services or to contract with private, non-governmental,
or other government organizations for their delivery.

12. Also, if local officials are to be held accountable, there must be clarity regarding
expenditure assignments. Lack of clarity provides an easy escape for any official called upon
to defend the performance of an agency as well as an opportunity for the local jurisdiction to
limit its own financial contribution in hopes of shifting the burden to some other level of
government.
13. Finally, if jurisdictions are not in some way compensated for benefits which spill over their boundaries, they will not provide a socially efficient amount of the public service concerned. Thus, efficiency requires that the central government compensate subnational jurisdictions for spillovers; this is typically done through matching grants for the affected service.

B. Equity.

14. Just as the promise of decentralization is improved efficiency, the danger of decentralization is worsened equity, both between jurisdictions and between individuals. To the extent a jurisdiction's revenue is determined by its own tax or revenue base, interjurisdictional differences in that base (fiscal capacity) generate interjurisdictional differences in revenues and government services. The result may be both inefficient and inequitable. Individuals of similar circumstances may receive very different treatment (in terms of services received relative to taxes paid) depending on their jurisdiction of residence; this generates an incentive for individuals (and sometimes firms) to locate in favored jurisdictions, resulting in a possible loss in economic efficiency. Differences in fiscal capacity can also adversely affect equity if the poor are heavily concentrated in jurisdictions with low fiscal capacity and, as a result, receive lower service levels.

15. These potential efficiency and equity effects of decentralization provide arguments for central government grants to equalize partially fiscal capacity between jurisdictions. Several countries in LAC use revenue sharing funds for this purpose. Brazil, for example, has both a state revenue sharing fund and a municipal revenue sharing fund which equalize partially fiscal capacity. Chile has a municipal common fund which redistributes property tax revenue among municipalities. Despite these attempts at fiscal equalization, there remain significant disparities in fiscal capacity and government expenditures between jurisdictions.

16. The effects of disparities in fiscal capacity on service levels are especially important for those services with important national public good characteristics (e.g., primary education and primary health care) where the central government wishes to ensure some minimum level of expenditures. One solution, simulated in Chapter IV, is to design service-specific intergovernmental transfers, the size of which is contingent on a jurisdiction's fiscal capacity.

17. In addition to the effects of decentralization on fiscal equity, the devolution of decision-making power to lower levels of government can alter the distribution of services between groups in society. While it is difficult to predict whether or not the resulting distribution will be more or less equitable, the central government is likely to play a continuing role in ensuring

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2 A jurisdiction's fiscal capacity is generally defined as the potential revenues that it could raise for a given set of rates; constraints on most subnational jurisdictions' authority to set tax rates in LAC means fiscal capacity is effectively the general revenues of the jurisdiction.

3 This efficiency argument for fiscal equity dates from Buchanan (1950).
against discrimination of minorities at the subnational level and ensuring that the poor and the especially needy receive some minimum level of services. This role requires regulation, possibly in the form of grant conditionality, and operational monitoring of subnational governments to ensure minorities and the poor receive equal treatment. It also requires categorical grant programs targeted on the poor and needy, who otherwise may not receive adequate resources from subnational authorities.

C. The Implementation Challenge.

18. Decentralization offers rich potential in terms of improving efficiency and accountability, and it entails the danger of worsened equity. The potential can be realized and the danger averted if policies are designed and implemented appropriately. As noted above, these policies include the right revenue and expenditure assignments, governance institutions that permit budgetary decisions to reflect citizen preferences, financial and performance information for accountability, adequate capacity to administer policies and programs, and grants in aid to ensure an efficient and equitable supply of some services.

19. These conditions are not at present generally satisfied in Latin America. Most countries are clearly in the beginning or middle of a transition to decentralized government and have not yet defined all the rules of the new intergovernmental arrangement; among other things, expenditure assignments are uncertain and unstable in several countries. Furthermore, the evidence to date is not promising that these conditions will be satisfied in the near future. If true, decentralization efforts will soon be rejected as a failed experiment.

20. In most countries, subnational governments have extremely limited capacity to raise their own revenues. Most own-source revenues are derived from shared taxes, but local authorities can almost never alter tax rates. This constraint on the subnational government’s revenues and aggregate expenditures translates into a continued dependence by local citizens on central governments for revenue increases and service improvements. Aside from the overall budget constraint, subnational governments do have a significant amount of budgetary discretion in setting wages and allocating monies across functions.

21. One area where significant progress has been made is in the election of officials at the subnational level. In most countries, elections have preceded the effective decentralization of responsibilities. Chile is an exception because decentralization was implemented during a nondemocratic regime. On the other hand, public information is woefully lacking. With very few exceptions, local governments fail to produce timely financial statements, and when they are produced, their distribution is often limited to the central government. In any case, deficiencies in financial accounting and reporting make it difficult for experts, much less citizens, to interpret and evaluate results. Similarly, citizens have access to very little formal information regarding the performance of their local agencies and how it compares to other communities.

Of course, there are real world examples of central governments themselves carrying out explicit discriminatory policies; in this discussion, we presume the central government desires to protect minority rights.
22. Finally, the grants-in-aid found in LAC most often take the form of shared revenues, ad hoc project grants, and negotiated block grants for particular sectors; even after distribution of these grants, wide disparities in subnational government fiscal capacity often remains. Little use is made of formula-driven sector-specific grants which are transparent, provide predictable revenues, and provide incentives or mandates to provide adequate spending on locally-provided services in which there is a national interest. While cost-sharing is often used in project grants, matching grants for the finance of current services are not common.
II

Finance and Provision Assignments

1. Most countries in LAC are decentralizing government. The logical decentralization process would, first, reassign expenditure authority and responsibility; second, reassign revenue authority consistent with expenditure requirements; and, third, design a system of intergovernmental grants to cover local government fiscal gaps between expenditures and revenues and to correct the efficiency and equity problems inherent in a decentralized system. This chapter reviews the general principles of expenditure and revenue assignments; compares recent LAC decentralization experience with these principles; demonstrates the complexity of finance and provision assignments for specific services in decentralized systems; describes the important role of the central government in a decentralized system and specifies its objectives for selected services; and provides the background for the three LAC cases which are analyzed in detail in the following chapter.

A. General Principles.

2. Both economic and administrative considerations are important in the analysis of the appropriate role and organization of government. Government has three major responsibilities--macroeconomic management, ensuring efficiency in resource allocation (the allocative function), and the redistribution of income. Of these, macroeconomic management and income redistribution are typically seen as being primarily central government responsibilities, while both the central and subnational governments are responsible for allocative efficiency. If, for example, local governments were to redistribute income, higher income residents would have an incentive to locate in those jurisdictions with few poor people, resulting in segregation by social class and seriously limiting the amount of income redistribution that could occur.

3. As with the private market place, allocative efficiency is attained when consumers purchase goods up to the point where the value they assign to a marginal increase in consumption equals the marginal costs of provision. The extension of this analysis to the market for government services is made difficult by the collective nature of the decisionmaking process. Consumers express their demand for government services through some governance mechanism,
and they typically pay for those services through general taxes. If consumers have homogeneous tastes, all consumers will be satisfied by this arrangement. To the extent tastes are heterogeneous, few consumers will be exactly satisfied by the collective decision.

4. This imperfect (relative to the private market) means of determining the supply of governments services is further complicated if the benefits of some government services are received by non-residents of the jurisdiction. In this case, the decisionmakers of a local government, for example, would include only those benefits internal to the jurisdiction in their decisionmaking calculus, resulting in a socially inefficient underprovision of services. Rural roads are one example of a publicly-provided good which generates this sort of interjurisdictional spillover. When government services generate large spillovers, there is an argument for moving responsibility for service provision to a higher level of government. Socially inefficient provision also results if some portion of the tax burden is shifted to non-residents.

5. This analysis results in some general principles for the organization of government:

- Expenditure responsibilities should be assigned consistent with the spatial distribution of benefits.
- The spatial incidence of revenue sources should be consistent with the spatial incidence of program benefits.
- Other things equal, services should be financed and revenues raised by the smallest unit of government possible (i.e., that minimum size which permits service costs and benefits to be internalized) in order to provide the best possible match between the supply and demand for public services.
- The responsibilities for income redistribution and economic stabilization should primarily lie with the central government.

6. Separate from the decision of how much to spend on a government service is how best to produce that service. The options facing the central government are: (1) self-production, (2) contracting with private producers, (3) contracting with public producers, and (4) delegating production to subnational governments. Each of these options entails principal-agent information asymmetries, which affect production costs.5

7. Any rigorous application of these general principles is difficult. In particular, there is less than perfect information on the spatial distribution of benefits and taxes, and economies of scale in both revenue collection and the production of services may partly negate the efficiency advantages of a decentralized system; and the costs of alternative options for service production are often not known. Evaluating these options is difficult and beyond the scope of this paper, but the general principle is that the production of services should be arranged so as to realize

5 These are analyzed in greater detail in Ferris and Winkler (1991).
scale economies and minimize costs. This analysis is further complicated when considering public goods or services where some benefits are national in nature and others are captured at the regional or local level. In a decentralized system, the responsibility for the finance and provision of these goods is typically shared by two or more levels of government. Primary education and primary health care are two examples where governments often share responsibilities.

B. The Decentralization Process.

8. Decentralization processes in LAC vary widely across countries. They vary in terms of the clarity with which revenue and expenditure authority and responsibilities have been reassigned; the rules established to govern the process; the level of subnational government which is given enhanced authority; and the use of community organizations or non-government organizations (NGOs).

9. In some countries, such as Brazil, Colombia, and Venezuela, revenue assignments have been precisely defined, while expenditure assignments remain ambiguous. Thus, subnational governments have received additional revenues, while central government expenditures remain relatively unchanged. This result, of course, can contribute to the central government’s fiscal deficit. In other countries, such as Chile, expenditure assignments are clear, but the responsibility for finance of some services has evolved over time and has been affected by changes in the size of the central government deficit.

10. The rules of the game by which responsibilities are decentralized also differ between countries. Argentina, for example, allocated additional revenues to provincial governments, which the central government could cut if the provinces failed to assume certain responsibilities (e.g., primary education). The result is that all provinces assumed the responsibilities. Venezuela, on the other hand, allocated additional revenues to state governments and promised further revenues if the states would assume greater responsibilities, such as primary and secondary education. The states, of course, will agree to assume those responsibilities only if the central government provides revenues which at least cover all additional costs of service provision; the central government, on the other hand, presumes that states should finance some portion of those additional costs from the new revenues already assigned to them. The predictable result, as described in Box 2.1, is decentralization gridlock.

11. Decentralization varies, also, in terms of the level of subnational government assigned new powers. In some countries (Argentina, Colombia, Mexico, Venezuela) it is the regional government which has been given additional powers. In other countries (Brazil, Chile) municipal governments have been assigned new powers. Sometimes the politics of the process dominate other considerations, resulting in powers being assigned that municipal governments are unprepared to assume; as discussed in Box 2.2, such is the case with health care in Brazil.

12. One variation on the theme of redistribution of powers to regional and local governments is the empowerment of community organizations or NGOs to provide services. Thus, El
Box 2.1: Decentralization Gridlock in Venezuela

In 1989 Venezuela passed its Decentralization Act which reassigned to the state governments a number of expenditure responsibilities, some of which (e.g., ports and commercial airports) are exclusive to the states and some of which (e.g., education and health) are to be shared between the states and the central government. Exclusive responsibilities are assumed by the state government once its legislature gives its approval. Shared responsibilities are transferred to the state if the state requests it, the terms of the transfer are agreed to after negotiation between the state and the central government, and the Congress approves the negotiated agreement. The states have assumed a number of exclusive expenditure responsibilities but no shared responsibilities.

The Decentralization Act also changed the revenue assignments of state governments, mainly by increasing the state block grant (situado constitucional) from 15 percent to 20 percent of specified Central Government revenues. In principle, states are required to spend 50 percent of the block grant on investment. In practice, there is no mechanism to enforce this condition.

The decentralization process of shared responsibilities is gridlocked by inadequate incentives, uncertainty, and national politics. Increases in block grants to the states included no conditions which provided incentives for states to take on new expenditure responsibilities. Thus, a state will assume new expenditure obligations only if they are accompanied by new transfers that cover all additional costs. The Central Government is, in general, willing to provide a categorical grant equal in size to its existing expenditures in the state for the transferred function. Uncertainty regarding the magnitude of those costs hinders negotiations. For example, in the transfer of primary education there is uncertainty regarding: (1) pension liabilities of transferred teachers, (2) deferred maintenance of school buildings, (3) future enrollments and expenditures. Finally, the requirement that the Congress approve all negotiated agreements politicizes the transfer process and, to date, has resulted in the Congress not approving the transfer of any shared responsibilities to the states.

Source: de la Cruz (1992)

Salvador has authorized community groups to receive transfers from the central government for the purpose of running rural schools, and Bolivia contracts extensively NGOs in its Social Investment Fund.

13. Another variation on the redistribution of powers is the Colombian model in which regional governments (departments) serve as pass-through agencies to municipalities. While this model is still being refined, the departments will be assigned block grants, which they will then redistribute to municipalities using the general criteria established by the central government. Brazil and Mexico also use regional governments (states) as pass-through agencies, but the pass-throughs are rigidly specified in an annual agreement (convenio unico).

14. While every country’s decentralization experience is unique, Brazil and Chile represent two unique models. Brazil is the only country in the Region with a long history of decentralized government; while the 1988 Constitution increased the powers of municipal governments, Brazil
Box 2.2: Municipalization of Health Care in Brazil

Brazil introduced a radical change in health expenditure assignments in 1987 with the passage of a program called The Unified and Decentralized Health System (SUDS), which transferred most federal government hospitals and staff to the states and municipalities. The new Constitution of 1988 carried this further by assigning the provision of all public health care to the municipalities, with financial and technical assistance to be provided by the states and the central government. Municipalities in general lacked anywhere near the capacity to carry our this assignment. In 1990 new legislation instituted the Single Health System, or SUS, and formalized the provisions of the Constitution. The SUS restored many of the federal government’s powers which had been reduced in the 1987 legislation. The federal government continued to set hospital reimbursement rates and was given control over the use of funds by the states and municipalities.

Much of the legislation that transferred responsibilities to the states and municipalities was not implemented effectively, in large part due to limited capacity on the part of the municipalities to assume their new functions. There is still a great deal of ambiguity regarding the precise responsibilities of each level of government.

The financing of health care is also in a state of transition. The 1990 legislation established that half of federal government health transfers would be made to states and municipalities on the basis of population alone with the other half to be negotiated on the basis of health need, investment plans, and health system performance. Subsequent health finance legislation (Law 1842 of November 1990) added the condition that at least 70 percent of federal health transfers would go to municipalities. This legislation has not been fully implemented.

The pattern of federal transfers reflects legislative trends. Between 1986 and 1988, the year after passage of SUDS, the share of federal health transfers to states and municipalities in the federal budget increased four hundred percent. Between 1988 and 1990, the year in which SUS was passed, this share decreased by almost fifty percent. While transfers to municipalities have increased, they still represent less than twenty percent of all federal intergovernmental health transfers.

Source: Piola and Vianna (1991)

already had the most decentralized system of government in Latin America, including both state and municipal governments with their own assigned revenue sources and expenditure responsibilities. Chile, on the other hand, has historically been highly centralized; regional government was an administrative arm of the central government, and municipal governments had limited autonomy. Municipal expenditure responsibilities were increased significantly in the 1980s under the military government, and this was complemented by the introduction of elected mayors and city councils under the present democratic government. The process of decentralization in Chile was simplified because the interest groups threatened with employment or income loss were unable to fully express their opposition. The institutionalization of decentralization was facilitated by relatively strong administrative capacity at all levels of government and by effective public financial management and control at the center.
C. Assignments in Education, Health, and Rural Roads.

15. The finance and delivery of primary education, primary health care, and rural roads are analyzed in some detail in this study. For our purposes, primary education is defined as the delivery of teaching services to children; primary health care is principally the delivery of preventative and maternal and child health care and does not include hospital care or emergency services; rural roads is the construction and maintenance of tertiary roads serving rural, mainly poor, communities. Three factors determined this selection of services: (1) these are among those services which are most frequently devolved to subnational governments; (2) when devolved to subnational governments, education and health expenditures often represent more than half the total government budget; and (3) these are services where there are often important continuing central government objectives even after decentralization. Finally, the lessons learned from the analysis of these social service and infrastructure services are generalizable to other services provided by subnational governments.

16. The delivery of any service comprises a number of discrete activities. For example, as shown in Table 2.1, delivering primary education services requires: financing recurrent and capital expenditures; specifying and implementing the core curriculum; specifying textbook requirements and providing texts; specifying nutrition standards and providing school meals; setting teacher accreditation standards and training teachers; employing and paying teachers; designing and implementing evaluation instruments and disseminating the results; supervising and providing technical assistance for school personnel; constructing and maintaining schools; managing and auditing finances; and developing plans and budgets.
### Table 2.1: Education: Finance and Provision Assignments

<table>
<thead>
<tr>
<th>Finance</th>
<th>Ministry of Education</th>
<th>Local Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance of Recurrent Expenditures</td>
<td>Ensures a specified minimum level of spending per pupil and financing to reduce inequalities in educational spending and to compensate for differences in need; designs and administers grants in aid.</td>
<td>Finances education on a cost-sharing basis and has the authority to finance expenditures beyond the specified minimum.</td>
</tr>
<tr>
<td>Finance of Capital Expenditures</td>
<td>Provides financing or backs local government borrowing, due to constraints on local government borrowing capacity; designs and administers grants in aid.</td>
<td>Shares in the financing of school construction and rehabilitation.</td>
</tr>
<tr>
<td>Provision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curriculum Design and Content</td>
<td>Specifies the content of the core curriculum to ensure common values and minimum learning. It also provides a basic curriculum design which local governments can use.</td>
<td>Implements the core curriculum and adapts the basic curriculum design to local requirements.</td>
</tr>
<tr>
<td>Textbooks and Teaching Materials</td>
<td>Prepares minimum text specifications reflecting the core curriculum; it may evaluate privately-supplied textbooks and teaching materials; it may also mandate a minimum supply of textbooks.</td>
<td>Selects textbooks from an approved list and complies with mandates on textbook provision.</td>
</tr>
<tr>
<td>Teacher Training</td>
<td>Ensures an adequate supply of pre-service teacher training, establishes teacher accreditation standards, and may offer in-service training.</td>
<td>Determines in-service training needs and contracts for its provision.</td>
</tr>
<tr>
<td>Teacher Recruitment and Pay</td>
<td>Establishes minimum conditions of employment for teachers, including civil service protection.</td>
<td>Negotiates pay levels with teachers; and recruits, hires, and dismisses teachers.</td>
</tr>
<tr>
<td>Testing and Evaluation</td>
<td>Designs and approves testing instruments, ensures testing takes place and disseminates the results to the schools; it also evaluates educational programs for cost and effectiveness.</td>
<td>May contract for testing services (if not directly provided by the Ministry), and disseminates results to parents. It also maintains an information system to provide the data required for program evaluation.</td>
</tr>
<tr>
<td>Program Supervision</td>
<td>Supervises school performance and provides technical assistance to remedy problems.</td>
<td>May contract for specialized technical assistance.</td>
</tr>
<tr>
<td>School Construction and Maintenance</td>
<td>Sets minimum school construction and maintenance standards and monitors their compliance.</td>
<td>Contracts for and monitors school construction and maintenance.</td>
</tr>
<tr>
<td>Financial and Management Audit</td>
<td>Sets the accounting standards required for audit, determines audit content, either directly provides audit or monitors its performance, reviews the results, and determines corrective actions.</td>
<td>Maintains accounts required for audit, may contract for audit by approved firms, and complies with any required corrective actions.</td>
</tr>
<tr>
<td>Planning and Budgeting</td>
<td>Does planning and budgeting for centrally-financed expenditures, sets budgeting standards for local governments, and provides technical assistance to local governments.</td>
<td>Does planning and budgeting for locally-financed expenditures and may contract for specialized technical assistance.</td>
</tr>
<tr>
<td>School Lunch</td>
<td>Specifies nutritional and health standards; may finance lunches targeted to poor students.</td>
<td>Contracts for or directly provides school meals.</td>
</tr>
</tbody>
</table>
Table 2.2: Primary Health: Finance and Provision Assignments

<table>
<thead>
<tr>
<th>Finance</th>
<th>Ministry of Health</th>
<th>Local Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance of Recurrent Expenditures</td>
<td>Ensures a minimum level of spending to provide preventative and curative care and financing to compensate for differences in need as reflected in epidemiological and socioeconomic characteristics; establishes the norms for cost-recovery by municipal clinics; determines financing mechanisms and the algorithm for transferring resources to local governments.</td>
<td>Establishes and collects user fees and finances primary health care on a cost-sharing basis, with the authority to spend beyond the specified minimum established by the MOH.</td>
</tr>
<tr>
<td>Finance of Capital Expenditures</td>
<td>Provides financing for clinics and equipment or backs local government borrowing for this purpose, due to constraints on local government borrowing authority; designs and administers grants in aid.</td>
<td>Shares in the financing of clinic and health post construction and the purchase of medical equipment.</td>
</tr>
<tr>
<td>Provision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Package of Services</td>
<td>Specifies the basic health care services which every citizen should receive and regulates/specifies the technology for service delivery; defines the norms and procedures which guide the delivery system, including referral patterns; and monitors; enforces compliance.</td>
<td>Delivers the basic package of services, adapting it according to local epidemiological and demographic needs as well as local demand.</td>
</tr>
<tr>
<td>Supplies of Pharmaceutical, Medicines, and Food Supplements</td>
<td>Sets standards for minimum technical specifications of supplies and procurement procedures; may mandate minimum supply quantities; facilitates procedures that minimize costs of procuring supplies, including establishment of cooperatives or direct provision by the MOH.</td>
<td>Prioritizes and selects supplies and either contracts for their procurement or procures from local firms.</td>
</tr>
<tr>
<td>Medical Equipment</td>
<td>Regulates minimum technical specifications of equipment; plays &quot;gate keeper&quot; role for the acquisition of new medical technology.</td>
<td>Prioritizes and selects equipment and contracts for their procurement or directly procures.</td>
</tr>
<tr>
<td>Statistical Information, Epidemiological Surveillance and Quality Control</td>
<td>Defines the epidemiological performance data needed to monitor the primary health care system; defines the information system to be used for data collection.</td>
<td>Assigns staff to carry out the responsibilities dictated by the information system, including data on finance, expenditures, and services provided by program; contracts for technical assistance if necessary.</td>
</tr>
<tr>
<td>Planning and Budgeting</td>
<td>Defines program budget classifications for both central and local government expenditures, sets financial reporting requirements, and provides technical assistance to local governments.</td>
<td>Does planning and budgeting for health expenditures by program and source of finance (fund accounting) and may contract for specialized technical assistance.</td>
</tr>
<tr>
<td>Training of Medical Personnel</td>
<td>Ensures an adequate supply of pre-service medical training; establishes certification standards for health care workers; defines minimum in-service training requirements.</td>
<td>Identifies in-service training requirements, selects candidates for training programs, and contracts for its provision.</td>
</tr>
<tr>
<td>Recruitment and Remuneration of Medical Personnel</td>
<td>Establishes the minimum conditions of employment for medical and non-medical personnel, including civil service protection.</td>
<td>Negotiates pay levels with medical and administrative personnel; recruits, hires, and dismisses staff.</td>
</tr>
<tr>
<td>Financial Management and Audit</td>
<td>Sets the accounting standards required for audit, determines audit content, either directly provides audit or monitors its performance of third party auditors, reviews the results and determines corrective actions.</td>
<td>Maintains accounts required for audit, reviews results with the central level, and complies with required corrective actions.</td>
</tr>
<tr>
<td>Construction of Clinics and Maintenance</td>
<td>Sets minimum clinic construction and maintenance standards and ensures their compliance.</td>
<td>Contracts for and monitors clinic construction and maintenance. Contracts with either MOH or third parties to repair and maintain medical and office equipment.</td>
</tr>
</tbody>
</table>
Table 2.3: Rural Roads: Finance and Provision Assignments

<table>
<thead>
<tr>
<th>Finance</th>
<th>Ministry of Transport</th>
<th>Local Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>Collects and allocates user fees and taxes and provides appropriate financial and other incentives to ensure adequate road maintenance; designs and administers grants in aid.</td>
<td>Finances road maintenance from own-source revenues and its allocated share of user fee revenues.</td>
</tr>
<tr>
<td>Finance of Capital Expenditures (Construction)</td>
<td>Directly finances, makes repayable loans, or backs local government borrowing for this purpose, due to capital market deficiencies for this purpose; designs and administers grants in aid.</td>
<td>Shares in the financing of road construction and rehabilitation, either from current revenues or by borrowing against future revenues.</td>
</tr>
<tr>
<td>Provision</td>
<td>Provides information on road use surveys, topographical, and climatic conditions relevant to road design.</td>
<td>Manages road construction and ensures its implementation either through force account or contracting; monitors construction to ensure it follows required standards and proceeds according to planned timetable.</td>
</tr>
<tr>
<td>Road Design</td>
<td>Determines the minimum specifications for road characteristics, based on road use, topography, climate, etc.</td>
<td>Manages road maintenance; monitors road conditions, plans and implements maintenance schedules; provides reports required by MOT.</td>
</tr>
<tr>
<td>Rehabilitation and Construction</td>
<td>Specifies minimum technology standards and administrative procedures, including reporting requirements, for construction; carries out periodic inspections to ensure compliance.</td>
<td>Manages the local information system and prepares periodic reports to the MOT.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Specifies minimum maintenance requirements; carries out periodic inspections to ensure compliance.</td>
<td>Manages road maintenance; monitors road conditions, plans and implements maintenance schedules; provides reports required by MOT.</td>
</tr>
<tr>
<td>Statistical Information and Quality Control</td>
<td>Manages an information system on the condition of the national road system, construction and maintenance activity, finance and expenditures, and specified information to be provided by local governments to the MOT.</td>
<td>Does planning and budgeting for rural road expenditures by program and source of finance (fund accounting) and may contract for specialized technical assistance.</td>
</tr>
<tr>
<td>Planning and Budgeting</td>
<td>Defines program budget classifications for both central and local government expenditures, sets financial reporting requirements, and provides technical assistance to local governments; specifies any required community participation in setting investment priorities.</td>
<td>Responsible for procuring equipment and supplies and contracting for design, construction, and maintenance consistent with MOT standards.</td>
</tr>
<tr>
<td>Procurement and Contracting</td>
<td>Sets required procedures for procurement and contracting for road construction and maintenance;</td>
<td>Negotiates pay levels with local government transportation employees; and recruits, hires, and dismisses personnel; determines training requirements and contracts for such training.</td>
</tr>
<tr>
<td>Employment and Pay of Personnel</td>
<td>Establishes minimum conditions of employment for local government workers, including civil service protection; facilitates worker training through its direct finance and/or provision or by providing technical assistance to local governments.</td>
<td>Negotiates pay levels with local government transportation employees; and recruits, hires, and dismisses personnel; determines training requirements and contracts for such training.</td>
</tr>
<tr>
<td>Financial Management and Audit</td>
<td>Sets the accounting standards required for audit, determines audit content, either directly provides audit or monitors its performance of third party auditors, reviews the results and determines corrective actions.</td>
<td>Maintains accounts required for audit, reviews results with the central level, and complies with required corrective actions.</td>
</tr>
</tbody>
</table>
17. Tables 2.1 - 2.3 provide models for primary education, primary health care, and rural roads, respectively, of how the responsibilities within each sector's activity might be allocated between central and local governments in an efficiently-operated intergovernmental system. The role of regional governments as a middle tier in an intergovernmental system is ignored here for purposes of exposition. What each government's role should be for any service depends on a number of factors: the public good characteristics of the service; the spatial distribution of service benefits and costs; possible economies of scale and costs in producing an activity; society's desire for homogeneity and consistency regarding that activity; and fiscal, administrative, and technical capacity.

18. Which level of government makes finance and resource allocation decisions is, of course, quite different from which level of government or which type of organization provides the service. Thus, the health ministry may have responsibility for defining norms and procedures for the delivery system, but the actual work to carry out this activity may be contracted to private consultants. Also, the local government may have responsibility for delivering the basic package of services, but the actual delivery may be contracted out to NGOs or private health providers.

19. One would expect that the models given in Tables 2.1 - 2.3 to be adapted in a number of ways for any particular country depending on political, constitutional, administrative, and technical factors. In practice in decentralized countries, central governments still carry out some activities which could be given to local governments. For example, in education, one finds the central governments of Brazil and Mexico directly providing textbooks to schools, and the central government of Chile bypasses the municipalities and the schools and directly contracts with private providers for school lunches.

20. Furthermore, in practice, the norms and procedures which are set by the central government (or, in some cases, the regional government) result in de facto assignments which are different from de jure assignments. For example, if central government regulations on the employment and compensation of personnel are sufficiently detailed, the local government may have very limited autonomy for negotiating pay or dismissing personnel. This is a particular problem in the U.S., where federal and state government mandates, grant conditionality, and cross-conditionality has in some cases seriously constrained local government expenditure autonomy.  

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6 An extreme case of this is found in California where the State Government prohibits high-spending school districts from increasing expenditures; the State Constitution requires a two-third positive popular vote for district tax increases; and the State directly finances some seventy education programs, each of which has its own set of conditions and regulations. The topic of regulatory federalism is examined further in Fix and Kenyon (1990).
D. Central Government Objectives in Intergovernmental Finance.

21. The central government has a very important role to play in a decentralized system of government. At a minimum, this role comprises:

(1) provision of financing to ensure fulfillment of national policy objectives and to correct interjurisdictional spillovers at the subnational level;

(2) setting the minimum national norms and standards for decentralized service delivery, financial management (including government accounting), and governance at the subnational level;

(3) producing and disseminating the public information required for accountability mechanisms to function effectively; and

(4) supervising and providing technical assistance to subnational governments to ensure efficient operations in compliance with national guidelines.

22. National policy objectives play a crucial role in determining the extent and nature of central government involvement in the finance of services delivered by subnational governments. In what follows, the principal central government objectives in the finance of primary education, primary health care, and rural roads are enunciated more fully. These objectives provide the criteria by which alternative means of financing these services can be evaluated in Chapter IV. For ease of exposition, the terms local and subnational governments are used interchangeably.

23. Education. The role of education in determining income distribution and social mobility is what distinguishes it from many other services often provided by subnational governments and what constitutes its principal national public good characteristic. More specifically, an education ministry can be seen as having four principal national objectives: (1) provide a minimum level of educational services to all students; (2) provide approximate equality of educational opportunity; (3) encourage operational efficiency; and (4) leverage scarce ministry resources.

24. The education ministry is responsible for ensuring that all citizens acquire some minimum educational attainment, which is operationally defined in terms of years and quality of schooling. While quality would best be measured in terms of schooling outcomes (e.g., gains in cognitive achievement), in practice it is measured by school inputs. Minimum inputs are in part specified in regulations (e.g., maximum class size or minimum teacher qualifications) and in part ensured through minimum per pupil expenditures. The Ministry has three principal options for ensuring the per student expenditure minimum: (1) provide a per pupil grant equal to the desired level of minimum expenditures; (2) mandate that local governments spend at least as much as the

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7 Other such characteristics include the effective function of democratic government and facilitating technological change.
specified minimum expenditure irrespective of any intergovernmental aid; and (3) provide incentives to municipalities to increase their educational spending.

25. Because education plays such a key role in determining future economic success, the degree of equality of educational opportunity is closely related to a society's distribution of earned income. For this reason, educational equality is an important societal goal and responsibility of the central government. As with educational attainment, educational opportunity is best measured by educational outcomes, but difficulties in measuring outcomes leads in practice to it being defined by the distribution of school inputs, not outcomes. To ensure approximate equality in spending, the education ministry can: (1) provide a large per pupil grant; (2) impose a cap on finance from local government sources; and (3) equalize for differences in local government spending or fiscal capacity.

26. In addition to inequalities across local governments, there are significant inequalities in educational outcomes between socioeconomic groups in society. Due to the large role the home plays in preparing children for schooling, equality in school inputs is unlikely to be a good proxy for equality in school outcomes for the educationally disadvantaged. Hence, an education ministry interested in reducing educational inequalities between socioeconomic groups must target additional monies to students from low socioeconomic homes, especially those who attend schools with low spending levels. This can be done either through targeted categorical grants or by changing the distributional formula of the general student grant to provide a larger grant to municipalities with high poverty rates.

27. The education ministry could conceivably reduce its outlays on education, were it to bring about greater efficiency, or larger outputs relative to costs. This could be accomplished through: (1) increasing learning or gains in educational achievement; (2) reducing the rate of grade repetition; or (3) reducing costs, including encouraging school consolidation to realize scale economies or encouraging educational innovation. To provide an incentive for efficiency, measures of cost-effectiveness could be used to, in part, determine the size of education ministry transfers. On the other hand, the use of such measures introduces moral hazard in the form of teaching to tests and lowering grade promotion standards. Incentives to encourage specific cost reductions or educational innovations are best provided through separate, categorical grants.

28. Finally, other things equal, the education ministry would typically like to leverage its additional grant funding. At a minimum, this means requiring local governments to not reduce their transfers (maintenance of effort) as a result of receiving additional ministry funding. Alternatively, the government may provide incentives in the form of matching grants to municipalities to increase their funding for education. The size of the incentive could be constructed to vary inversely with municipal fiscal capacity in order to avoid increasing spending disparities.

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8 An example of such a grant is the program to provide Ministry of Education transfers to schools proposing educational innovations to improve learning under a Chile Basic Education Project financed by the World Bank.
29. **Health.** Primary health care differs from primary education in its clientele. Public health care is mainly used by those who do not have access to private care, whereas public education is typically used by most of the population. As with education, the effects of health care on the poor is its principal national public good characteristic. However, in addition, the fact that local jurisdictions do not receive all the benefits from preventative care provided to the poor (since if they did not receive the care another jurisdiction or level of government might end up paying the resulting curative costs), provides another economic rationale for central government finance. The health ministry is likely to reflect these interests in more specific objectives: (1) satisfy minimum health needs of those using local health clinics; (2) provide relative equity in service provision; (3) improve efficiency in the provision and the mix of health services offered by the clinics; and (4) improve health care as much as possible given health ministry budget constraints.

30. The health ministry has a concern that all clinic users, who are typically the poor, have access to some minimum quantity and quality of health services. Neither quantity nor quality can be easily measured at the level of the health clinic or the local government. Services differ in terms of their cost and their health benefits, which makes aggregation difficult, while health care quality is neither easily defined nor easily measured. Given these difficulties, one proxy for quantity and quality is health care expenditures per user, adjusted for differences in input prices and case mix between jurisdictions.\(^9\) Thus, the Ministry may wish to ensure that any grant design results in some minimum expenditure per health clinic user. Furthermore, it has two basic options for ensuring minimum expenditures: (1) provide a health ministry transfer per user at least equal to the desired minimum expenditure amount or (2) mandate that local governments spend at least as much as the specified minimum expenditure irrespective of aid from the Central Government.

31. In addition to ensuring minimum service levels, the health ministry may also be concerned about the degree of equality in total health expenditures per user of the municipal public health system.\(^10\) As with education, to ensure approximate equality in spending, the health ministry can: (1) provide a large per beneficiary grant; (2) impose a cap on finance from local government sources; or (3) equalize for differences in local government spending or fiscal capacity.

32. **Efficiency** in delivering municipal health care services is the maximization of the health status of users given resources. Given the difficulty in measuring health status or determining

\(^9\) Obviously, there are some critical health services (e.g., vaccinations), the provision of which the Ministry of Health may not wish to leave to municipal discretion. Mandated critical services may be included in the regulations that accompany the health finance legislation. An alternative, commonly used in LAC, is central government vaccination campaigns.

\(^10\) Of course, there are numerous other possible definitions, including equality in health status or equality in improvements in health status resulting from health care, but the simplest and most basic definition is equality in health care inputs. We do not consider here the financial incentives and cost implications associated with referring clinic patients to non-municipal hospitals or with their counter-referrals to clinics.
the contribution of municipal health services to improvements in status, efficiency is best proxied by measures of the municipal clinic's cost-effectiveness in service delivery and provision of service mixes consistent with professional opinion. In addition, imposition of nominal user charges for some services is likely to reduce the unnecessary consumption of health services. These measures are not easily incorporated into an intergovernmental grant, although the central government could require the provision of some services or the levying of minimum user charges as conditions for receiving the grant.

33. The health ministry wishes to attain its objectives at the lowest budget outlay. This can be accomplished by either mandating that municipal expenditures not decrease (maintenance of effort) or providing incentives (matching grants) for local government finance. The size of the incentive can be tied to the inverse of the municipality's fiscal capacity to minimize total grant cost.

34. **Rural Roads.** The national interest in the construction and maintenance of rural roads is mainly justified on the basis of interjurisdictional spillovers and income distributional effects. The fact that non-residents of the locality cannot be easily prevented from using the roads means there is the potential for interjurisdictional benefit spillovers that would result in under-investment by local governments. In addition, the fact that rural communities are often poor means that rural road investments have the potential to better their economic status by improving access to markets. This general rationale for central government finance is translated into more specific transportation ministry objectives: (1) ensure that subnational governments with large rural areas have an adequate feeder road network; (2) ensure that municipalities (which have no access to capital markets) with severely constrained general revenues can finance high priority road projects; (3) alleviate rural poverty; (4) prevent subnational governments from using grant financing to lower their taxes; and (5) ensure adequate maintenance of the existing road network.

35. The establishment of adequate rural roads entails construction of new roads, paving existing dirt roads, and rehabilitation of roads suffering from deferred maintenance. To ensure that subnational governments have adequate financing for this purpose requires that grant size vary with need, which can be measured in a variety of ways. In Japan, two criteria used to distribute Central Government secondary road grants to the regional governments (prefectures) are total kilometers of roads and total road surface area. In the U.S., Federal Government rural secondary road grants to the states are determined using a formula that gives equal weights to land area, rural population, and mileage of rural mail routes.

36. The capacity of governments to finance road projects and road maintenance varies with their general revenues. Low capacity to finance rural road projects can be compensated by varying the cost-sharing required of the government receiving the project grant.

37. The construction and improvement of rural roads is one means of attempting to improve the welfare of the rural poor by providing better access to markets for their products and to education and health services for their families. This objective can be addressed either through
a general rural roads program or through a more focused program that is tightly targeted on the rural poor.

38. Subnational governments receiving sector-specific grants would like to use the resulting revenue as if it were an addition to general revenues with no strings attached, which it would use to partly finance other services and partly to reduce the tax burden on its own citizens. The central government, on the other hand, wishes to see the sector-specific grant spent only on the intended sector with no reduction in the overall fiscal effort of the government receiving the grant. It can encourage such response on the part of the grantee by: (1) providing an incentive to increase the grantee’s own-source revenues, (2) requiring cost-sharing on the part of the grantee, and/or (3) requiring maintenance of effort (no reduction in the grantee’s own sector-specific expenditures).

E. Cases in Sectoral Decentralization.

39. Decentralization is a world-wide phenomenon in the 1980s and 1990s; recent LAC experience has been surveyed elsewhere and won’t be repeated here. In addition to reporting the decentralization experience, there is a growing literature on the difficulties and failures in implementing decentralization policies. This study complements the literature through case studies of LAC experience with the decentralized delivery of three services—primary education, primary health care, and rural roads. Since the purpose of these case studies is to draw lessons from LAC experience with sector-specific grants, cases were selected on the basis of innovation in grants and the potential for applying variations of these models to other countries in the Region. Two of the cases come from Chile, while the third is from Colombia. In order to put the following chapter’s analysis of these cases in perspective, it is important to first briefly review the decentralization process in these two countries.

40. Education. Chile initiated its decentralization efforts in 1974 with the creation of thirteen regional governments to serve as administrative arms of the central government. This was followed in the mid-1970s with laws establishing the major municipal revenue sources (especially, the Municipal Common Fund) and expenditure responsibilities. In 1981, the process of devolving responsibility for providing primary-secondary education and primary health care was initiated; this process was interrupted by a severe recession and not completed until 1988. Finally, elections of mayors and city councils were carried out in 1992.

41. Until 1981, the Ministry of Education in Chile made all decisions concerning education provision and finance. The thirteen regional governments (departments) were charged with

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11 See, especially, Campbell, Peterson, and Brakarz (1991), who review recent experience with decentralization to local governments in LAC.

12 See Winkler (1988) for a review of experience with education decentralization; difficulties in decentralization implementation have been analyzed by McGinn and Street (1982), Hansen (1984), Stromquist (1986), Gonzalez-Block, et.al. (1989), and Rojas (1991), among others.
supervising and evaluating school performance. All teachers were public employees, and salaries were determined by the central government. In 1981, Chile initiated efforts to decentralize the provision of education to municipalities, while retaining central control over financing. The decentralization reform also included a novel plan to permit a larger role for private sector provision of education.

42. The reform was expensive to implement because the central government offered financial incentives to municipalities to accept the obligation to pay teachers and maintain buildings and gave severance pay to teachers. The transfer of responsibilities to municipalities was not completed until 1988, although 80 percent of schools were transferred in the first two years of the reform. As a consequence of realigned responsibilities, employment in the Ministry of Education was cut by more than two-thirds, from 23,149 in 1980 to 8,550 in 1990. (Reid, 1992)

43. Since non-profit private schools were also made eligible to receive the capitation grant (but not the capital grants that municipal schools could also receive) and parents were free to choose the school their child would attend, private supply rapidly grew. By 1990, more than one-third (36%) of all capitation grants went to non-profit, private schools, despite their lower expenditures and significantly lower teacher pay.

44. While the capitation grant initially covered the full recurrent costs of education, it quickly decreased from its 1981 value of $6577 (in 1990 pesos) to only $4133 in 1990, a 37 percent change. In response, municipalities increased their own financial contributions to the schools, which by 1990 represented percent of total education recurrent spending in the municipal schools. Non-profit schools were also permitted to charge tuition to supplement the capitation grant, but a 40 percent tax on the resulting revenue means few schools do so; however, they do receive donations from businesses and parent’s associations.

45. The capitation grant is supplemented by other Ministry of Education, in-kind transfers, including textbooks, school lunches for students from low-income homes, and capital project grants for school facilities, the latter available only to municipal schools. The schools are neither heavily supervised nor tightly regulated, although a teacher’s statute approved in 1991 establishes a national minimum teacher pay scale applicable to all schools receiving the capitation grant. Reduced capitation grants combined with the tuition tax and teacher minimum pay are likely to slow the growth in non-profit private school enrollment.

46. Health. Prior to 1979, the financing and provision of public health care in Chile was highly centralized. In 1979, public health administration was deconcentrated to 26 regional Health Service Areas (HSAs), and in 1981 the process of decentralizing primary health care to the municipalities was initiated. By 1988 this decentralization process was largely completed.

47. The principal users of the municipal health clinics are those families and individuals who either lack private health insurance or elect to participate in the public system. In general, participants in the public system have less than half the per capita income of participants in the private system (Annex B, Table 2). The percent of inhabitants in a municipality who participate
in the public system is negatively related to average family income in the municipality and positively associated with the poverty rate, the percent of young children, and the percent of elderly in the population (Annex B, Table 6).

48. In principle, the municipal health clinics are financed under a fee-for-service plan under which the clinics submit evidence of services provided to the regional HSA which authorizes payment by the Ministry of Health. Once this plan was initiated in 1981, the Ministry found municipalities responded by sharply increasing the quantity of services provided, resulting in large demands on the central government's treasury. In addition, municipalities increased most those services where reimbursement fees exceeded the costs of provision. The resulting budgetary pressures resulted in two changes: (1) the fee-for-service schedule was not allowed to keep pace with rising costs; and (2) each municipality was given an annual fixed ceiling for total health service reimbursements from the Ministry of Health. The ceiling is primarily based on historical expenditure data, which discriminates against those municipalities which did not quickly respond to the incentives under fee-for-service to expand health care provision.

49. In addition to cost reimbursement, some municipalities were given central government funds beyond the cap at the discretion of the administrator of the regional HSA. The combination of all these factors results in an average 75/25 cost-sharing division between the central and municipal governments. Analysis of the resulting distribution of transfers to municipalities (see Annex B, Table 4) shows the per capita level of transfers to be positively related to the number of child services provided, the percent of population that is elderly, and health personnel wages and negatively related to the percent of municipal health clinics that are rural (and which provide a less costly and less varied set of services than urban clinics).

50. **Rural Roads.** Colombia initiated its decentralization efforts in 1983 with the passage of a law (Law 14) granting municipalities greater revenue raising powers. Subsequently, in 1986, another law (Law 12) was passed to increase the municipal share of the national sales tax (IVA), with a formula that explicitly rewards fiscal effort and favors small municipalities, which typically have low fiscal capacity; municipalities are also mandated to spend their increased transfer revenues resulting from the 1986 law on investments, including roads. Finally, in 1987 yet another law (Law 77) was passed decentralizing responsibilities for service provision to the municipalities. The central government was given responsibility for national roads, regional government (departamentos) responsibility for regional secondary roads, and local government responsibility for the construction and maintenance of municipal secondary and tertiary roads. A national highway survey was undertaken in 1989 to implement the 1987 reform. This resulted in the central, regional, and local governments having responsibility for 23.5%, 39.1%, and 37.4%, respectively, of total highway kilometers in the country.

51. Fiscal decentralization in Colombia was accompanied by political decentralization, with a 1986 law (Law 78) requiring that municipal mayors who were appointed by department governors henceforth be elected by their citizens, which was done through elections held in March 1988. The new Constitution of 1991 carried popular rule one step further by authoring the direct election of governors, who were formerly appointed by the central government.
The decentralization process in Colombia is not yet completed. Prior to 1987, the Rural Roads National Fund (FNCV) both financed and constructed rural roads, mostly through force account. The 1987 reform required that the FNCV co-finance with the municipalities all such construction, although the agency continues to execute projects on behalf of the municipalities. Finally, legislation recently introduced into the Congress (Proyecto de Ley de Transporte) would eliminate the national FNCV, give the department governments responsibility for carrying out FNCV's functions, and substitute block grants to the departments for the matching grants to municipalities. The departments would, in turn, establish their own co-financing mechanism with their municipalities.
III

LAC Experience With Intergovernmental Transfers

1. In this chapter, we first review the principles of intergovernmental grants, including grant objectives, alternative grant designs, and administrative discretion in determining grant allocations. Since these principles have been described and applied in several Bank documents and in the public finance literature, our review is cursory and intended only to set the context for a more detailed analysis of categorical grants. Second, we review and evaluate LAC experience with three innovative sector-specific grant designs, from which we can derive lessons for the Region regarding grant design and administration.

2. The focus of this paper is the design and administration of sector-specific transfers; since it is more common to refer to these transfers as categorical grants, the two terms are used interchangeably here. The permitted uses of sector-specific transfers range from unrestricted (aside from being spent in the sector) to highly restricted. When permitted uses are largely unrestricted, these transfers are often called block grants. The municipal funds found in many countries are block grants which must be spent on infrastructure; Box 3.1 provides an example of a block grant for social services. When permitted uses of sector-specific transfers are relatively restricted, the transfers are often labeled categorical or conditional grants. In what follows, we analyze three categorical grants: Chile’s formula grants for the finance of primary education, Chile’s cost reimbursement grants for primary health care, and Colombia’s matching competitive grants for rural road projects.

A. Principles of Grant Design.

3. Objectives. Intergovernmental grants have three principal objectives: (1) correct fiscal gaps between revenues and expenditures of subnational governments; (2) ensure fulfillment of national policy objectives; and (3) compensate for interjurisdictional spillovers resulting from services provided by subnational governments. In Latin America, subnational governments typically have expenditure responsibilities larger than revenues from their own sources; in aggregate, state and local governments in LAC generate 17.5 percent of total revenues and account for 28.5 percent of total government expenditures. Hence, correcting the fiscal gap is the top priority of grants in aid. In LAC this is often accomplished through revenue sharing
arrangements, which are well documented in the literature. A preferred solution would be to increase the own-source revenues of subnational governments.

4. As noted in the previous chapter, the central government often has national policy objectives for goods and services provided by subnational governments. These objectives include minimum expenditures on some services which generate public good externalities and equity in spending across jurisdictions for services which affect strongly the welfare of the poor.

5. To some extent, inadequate expenditures and high variance in spending are the result of disparities in fiscal capacity, which in turn are largely due to unequal own-source tax bases. As a result, most LAC central governments have instituted block grants to subnational governments where the amount of the grant is to some extent inversely related to a jurisdiction’s fiscal capacity. As noted above, an example in the Region is the use of municipal common funds.

6. While reducing disparities in fiscal capacity, these grants neither eliminate disparities nor do they efficiently attain the central government’s objectives. Block grants may ensure minimum revenues but do not ensure either minimum expenditures on specific services or improved equality in spending for services which affect poverty and income distribution. These objectives can be more efficiently achieved through a service-specific grant, the size of which is inversely related to fiscal capacity and directly related to poverty rates.

7. Even where there is no fiscal gap and no significant fiscal disparities between subnational jurisdictions, interjurisdictional spillovers from programs run by subnational governments could lead to their suboptimal provision and, hence, require the central (or regional) government to devise corrective measures. In principle, the corrective measure is simple—alter the affected program’s price to the jurisdiction through an open-ended matching grant, where the matching percentage equals the percent of marginal benefits which spillover. In practice, the magnitude of benefit spillovers can seldom be quantified, and central governments fear the uncertainty of expenditures of open-ended matching grants. The result is that matching grants found in practice are almost always closed-ended (i.e., the price on the margin is unchanged for many governments receiving the grant), the matching rates are decided arbitrarily, and jurisdictions are mandated to maintain existing spending levels in order to ensure net increases in spending on the service. Expenditure mandates typically take the form of either requiring that the grantee spend some minimum amount on the service or requiring that the grantee not reduce expenditures from its own-source revenues after receiving the grant. Both of these measures are attempts to restrict grant fungibility, which is the ability of the grantee to shift the use of grant monies from the grantor’s intended purpose.

8. While interjurisdictional spillovers provide the economic rationale for matching rates, improved accountability provides an equally strong rationale. As will be discussed in Chapter

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13 See, for example, Campbell, Peterson and Brakarz (July 1991). There is some ambiguity regarding the definition of revenue sharing. In this paper, we follow the convention of defining shared tax revenues as intergovernmental grants if the tax rate and the allocation of proceeds are determined by the central government alone.
VI, cost-sharing provides an incentive for taxpayers and beneficiaries to more closely monitor government programs financed with intergovernmental grants. Thus, one can make a general argument for cost-sharing in service-specific intergovernmental grants.

9. Policies for Allocating Grant Monies. A large number of intergovernmental grant typologies exist. A useful typology of categorical grants classifies them by alternative policies for allocating monies across subnational governments (Table 3.1). Formula grants allocate monies on the basis of a formula, which usually includes variables that reflect variations in need and cost across jurisdictions; less frequently, formula grants sometimes compensate for a jurisdiction's relatively low fiscal capacity or reward jurisdictions for fiscal effort. While categorical formula grants are typically sector specific, Colombia provides a block formula grant for health and education combined (see Box 3.1). The construction of formulas is constrained by the availability of current data on the variables which measure need (e.g., cost variations, current population characteristics), fiscal effort (e.g., tax rates, user fees), fiscal capacity (e.g., actual or potential own-source revenues), and measures of service performance.

10. Formula grants which weigh the population of citizens or beneficiaries very heavily are often called capitation grants; as discussed in detail below, Chile's central government uses a per student capitation formula to transfer monies to municipal governments for primary education. Entitlement grants are formula grants which specify the amount of monies which a jurisdiction is eligible to receive should it submit spending proposals which meet the central government's criteria.

11. Matching program grants have formulas which require the receiving jurisdiction to provide evidence of their own spending on the program. If matching grants are open-ended, jurisdictions are in effect offered a per unit subsidy to increase services provided. If matching grants are closed-ended, jurisdictions are offered the per unit subsidy up to the constraint on the maximum grant which the jurisdiction can receive; beyond that constraint there is no incentive to increase services, but a minimum cost-sharing by the jurisdiction is ensured.

Table 3.1: Typology of Categorical Grants With Examples

<table>
<thead>
<tr>
<th>Alternative Policies for Allocating Grant Monies</th>
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14 See, for example, the Bahl and Linn (1992) typology of grants for developing nations and Mikesell's (1982) typology of U.S. grants in aid.
Box 3.1: Colombia’s Block Grants to Regional Governments for Social Services

In 1971, Colombia passed Law 46 establishing a block grant (Situado Fiscal) to departments for education and health. The block grant was distributed in part (30%) equally among the 30 departments and in part (70%) on the basis of a department’s population. According to law, 74 percent of the grant was to be spent on education and 26 percent on health; this requirement has not been enforced, and 35 percent of the grant was spent on health in 1990.

Proposed implementing legislation for the 1991 Constitution would alter the distribution of grants to provide larger transfers where need or poverty is high and to provide incentives for departments to increase their own-source revenues and to reduce administrative costs. The proposed variables and weights for distribution of the block grant are: equal shares for each department (15%), the number of beneficiaries/users (25%), the number of potential users (35%), fiscal effort by the department (15%), and administrative efficiency (10%). Departments would be required to spend a minimum of 15 percent of the grant on health and a minimum of 60 percent on education; department governors would be required to negotiate with the Ministries of Education and Health on the precise percentage distributions to be spent on education and health and to be passed through to municipalities.

Under the proposed legislation, the departments will determine the details of the formula for passing on the grant to municipalities, but national legislation would mandate some variables which must be included in the formula as well as the criteria which municipalities must satisfy to receive transfers. The national mandates provide incentives to municipalities to increase their coverage and to emphasize preventative health care. The variables included in the draft national legislation for department health grants to municipalities are: population with NBI, number of families subscribed and attended, number of first-time consultations, gains in the index of child vaccination, and reduction in hospitalizations for preventible diseases. The criteria which municipalities must meet to receive grants for local health services include: (1) establish a health information system, (2) adopt procedures to plan, evaluate, and control health programs and their financing, (3) develop a sectoral health plan, and (4) make institutional arrangements for the decentralized administration of primary health care services. Few municipalities would at first satisfy these criteria.

12. Aside from their being open vs. closed, matching grants take several forms: (1) matching expenditures may be a fixed amount of money, which is often negotiated between governments; (2) the matching rate may be identical for all jurisdictions; and (3) the matching rate may vary depending on the characteristics of the receiving jurisdiction. Variable matching rates are typically adjusted for differences in fiscal capacity or need (equity objectives) or to provide incentives for changes in grantee behavior (efficiency objective). A special case of a matching grant is a percentage equalizing grant in which the grantor mandates some minimum level of spending and ensures that all grantees spend that amount irrespective of their fiscal capacity. It does this by providing a grant, the amount of which is contingent on fiscal capacity, such that grantees with low revenues receive a grant equal to the mandated spending amount, and the size of the grant decreases as the grantee’s fiscal capacity rises until it reaches zero.
13. **Cost reimbursement grants** either partially or fully compensate jurisdictions for their costs in providing specified services. Cost reimbursement grants significantly differ from formula grants in that they typically require jurisdictions to document their expenditures prior to receiving grant monies, although the central government can advance funds to special accounts which are replenished as receiving governments document eligible expenditures. Cost reimbursement can be used for either recurrent or capital expenditures, and reimbursement can either be full or partial. Full reimbursement provides no incentive to jurisdictions to monitor costs and encourage program efficiency; hence, full reimbursement or near full reimbursement is typically accompanied by cost controls and a strict approval process or expenditure caps.\(^{15}\)

14. Partial reimbursement grants require *cost-sharing* by the jurisdiction that receives the grant. Even when cost-sharing is not legally required, the central government providing the grant can determine the eligibility of costs to be reimbursed in such a way as to impose a de facto requirement for jurisdictions to partly finance the service in question. As discussed below, Chile's primary health care grants to municipalities in principle fully reimburse costs, but in practice municipalities finance almost one-quarter of total costs from their own revenues.

15. **Competitive grants** are used mostly for large capital expenditures or for one-time recurrent expenditures. Jurisdictions typically compete against one another by submitting project proposals which best meet the central government's funding criteria. In contrast to competition, sometimes the receiving jurisdiction is granted an *entitlement* to a specified amount of funds and merely needs to submit projects which satisfy minimum funding criteria for approval by the central government. Colombia's system of grants to finance rural roads are evaluated below; these grants are both competitive and require cost-sharing on the part of the municipality receiving the grant.

16. Finally, *ad hoc grants* are those which the central government may award to a specific jurisdiction or set of jurisdictions on the basis of subjective criteria. While politics determines to some extent all grant designs, including the legislation of grant formulas, ad hoc grants often use political considerations as the principal allocation criterion.

17. **Administrative Procedures.** Intergovernmental grants can also be categorized by the administrative procedures used to determine the grant allocation to be received by any jurisdiction. These procedures differ in the discretion allowed grant administrators, be they line-level technocrats or ministry politicians, to influence the distribution and size of grants.

18. All grants are authorized by some form of legal statute, but when the *legal statute* specifies the precise allocation of grant monies, grant administrators are left with very little discretionary power. Legal statutes can specify the formula, the cost-reimbursement procedure, the criteria to be used to evaluate and prioritize projects, and even the specific dollar amounts to go to specified jurisdictions.

\(^{15}\) The low percent (10%) of state cost-sharing in the U.S. grant program for interstate highway construction has been blamed for the frequent cost over-runs and over-design found in the state managed construction.
19. In contrast to legislated rules and formulas to determine grant allocation, the distribution of grants is sometimes the result of formal negotiation between levels of government. Such negotiation can result in a distribution formula; agreements regarding the definition and extent of costs to be reimbursed; decisions about the size, composition, and financing of investment programs; and the nature of ad hoc grants (e.g., the size and characteristics of a central government grant to enable a subnational government to provide services in response to some natural disaster).

20. One of the best known examples of formal negotiation in LAC is Mexico’s system of central government grants (labeled CUDs for Convenios Unicos de Desarrollo) to state and local governments for infrastructure investments. State planning committees (called COPLADES for Comites Estatales de Planeacion para el Desarrollo) usually headed by the governor with a supporting technical team and broad representation by sectoral public authorities and the private sector negotiate with the central government to arrive at a CUD. The CUD specifies the size and composition of investment projects to be jointly financed by the local, state, and central governments. The CUDs are not entitlement grants as each state’s amount of central government transfers is itself subject to negotiation, depending on the quality of the state’s proposed investment program. While the final CUD results from some combination of central government priorities, state and local government demand, and technical and economic evaluations of project proposals, critics complain that politics can also play a large role in the allocation of both the size and composition of the CUD, especially in election years.

21. Under formal negotiation, the administrative discretion of the central government is constrained by the rules which set out negotiation procedures and the roles to be played by each level of government. If negotiation is only paid lip service by the central government, the result is effectively an administrative decision for determining grant allocation, which gives the central authorities almost complete discretion. Almost all grants require some degree of administrative decision, which often sets the regulations or rules of the game required to implement the legal statute; these regulations also influence grant allocation but only on the margin. Administrative discretion is greatest when central government authorities can make ad hoc grants without legislation or negotiation. The process and the criteria for deciding such grants are almost never transparent, and political considerations are likely to be the dominant allocation criteria.

16 See Campbell, Peterson, and Brakarz (1991) for further discussion of the CUDs.

17 The CUDs have recently been complemented by and, to some extent, replaced by the central government’s Solidarity Program, which is aimed at increasing infrastructure investments in poor communities. Under Solidarity, the central government identifies investment priorities, while communities identify projects. Once projects are identified, the different levels of government negotiate the precise cost-sharing arrangements for project finance.

18 While political considerations dominate, they can be constrained. Ministers can be allocated grant monies to allocate at their discretion but with constraints as to the type of activities to be funded.
B. Formula Grant for Primary Education.

22. Intergovernmental capitation grants are a transfer per capita or per program beneficiary. The total transfer to the subnational jurisdiction (or other legal entity) is the product of the capitation amount and the jurisdiction's population (or number of beneficiaries). Capitation grants are most commonly used where the beneficiary population is easily defined and measured. In education, for example, capitation grants may be provided for school lunches for poor children, for textbooks for all children, or for enrichment programs for students with special needs.

23. An innovative example of a capitation grant in LAC is Chile's primary-secondary education grant, which transfers a formula-based amount of cash per student to legal entities, including municipalities and private providers, authorized to operate schools. However, municipalities are not prohibited from using their own general revenues to finance increases in educational spending above the capitation grant. An evaluation of Chile's capitation grant for education yields the following conclusions: (1) educational finance in Chile is transparent; (2) the central government's large finance share, combined with a cost-based capitation grant, ensures a relatively high level of minimum expenditures per student; (3) municipal-financed add-ons, which are largely determined by municipal fiscal capacity, create or exacerbate expenditure inequality, and (4) educational providers eligible for the capitation grants strongly respond to incentives to maximize enrollment and constrain costs.

24. Distribution of Grants. The distribution of central government grants to municipalities is summarized in Figure 3.1. This figure compares the lowest and highest decile of municipalities ranked along three municipal characteristics: average poverty rate, fiscal capacity as measured by total general revenues per capita, and average school achievement as measured by the Education Ministry's standardized test. Since education affects income distribution, which is a central government concern, the distribution of grants between low and high poverty municipalities provides one means of assessing how well this concern is satisfied. Fiscal capacity measures the municipality's ability to pay; other things equal, the central government can better attain its educational objectives by adjusting grant size for ability to pay. School achievement is a measure of educational need; other things equal, the central government could better attain minimum learning standards by distributing larger grants to the neediest schools.

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19 The base of student capitation grant establishes the minimum per student expenditure. In Chile, this grant average is 90 percent of per pupil expenditures in municipal schools. This minimum has declined considerably in real terms since 1981.

20 Of course, expenditure inequality in part reflects differences in cost and service mix.

21 See Winkler and Rounds (1993) for an assessment of municipal and private sector supply response.
25. As shown in Figure 3.1, municipalities with the highest poverty rates receive significantly larger (+40%) grants per student than those with the lowest poverty rates; municipalities with high fiscal capacity receive larger (+60%) grants than those with low fiscal capacity; and there is no real difference in grants between municipalities with highest and lowest average eighth grade achievement test scores. Since the grant formula is transparent, these funding differences reflect primarily differences in educational costs, which are a function of the type and level of education provided and regional variations in wages. The grant amount is also positively correlated with a municipality's poverty rate, although that is not a variable in the formula.22

26. Municipal Finance. Municipal-financed expenditures additional to the central government capitation grant alter the equity of educational expenditures. In particular, as discussed in Box 3.2, estimation of a model of municipal finance reveals that both input prices (teacher wages) and fiscal capacity (general revenue per capita) strongly affect the level of municipal finance; the estimated elasticity of educational spending relative to fiscal capacity is about 1.0.23 On a per student basis, municipalities with low poverty rates allocate almost five times as much of their general revenues to education as do those with high poverty rates; high fiscal capacity municipalities allocate ten times as much as those with low fiscal capacity; and municipalities with high average school achievement allocate five times as much as those with low achievement. Thus, municipal finance generates a very different and less equal pattern of total educational spending in Chile compared to grant-financing alone.

27. Consistent with the above explanation, the model provides some weak evidence that if the central government grant were increased, municipalities would respond by reducing their own educational finance. The magnitude of this response is not large; at the variable means, a $1 increase in the central government per pupil grant would reduce municipal finance by only $0.03. The negative sign on per capita public school enrollments is also consistent with the proposition that increased enrollments generate "profits" which permit reduced municipal finance.

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22 See Annex A, Table 2, for estimates of the relationship between capitation grants and municipality characteristics.

23 See Annex A, Table 3, for the full results.
Box 3.2: Municipal Finance of Primary Education in Chile

Municipal finance of education reflects community demand for education and the cost to the municipality of providing the service. Data were collected on 290 Chile municipalities for the year 1990 to estimate a model of municipal finance of education. Specification of the model is guided by public choice theory and prior empirical work on state and local spending and is constrained by the availability of data.

Municipal expenditures on education net of central government student aid are expected to be positively related to municipal fiscal capacity, which in the model is measured by non-earmarked per capita revenues (including revenue sharing and block grants). In addition, public choice theory suggests that voter income and tastes should influence municipal finance. These are measured by family average socioeconomic status (SES) and the number of public school students per capita, which reflects the distribution of public school benefits in the community. Higher costs also affect municipal finance decisions, but their net effects on municipal expenditures are indeterminate. Costs are measured here by teacher salaries, local input prices (proxied by population density), and student-teacher ratios (which are constrained in the short-run).

The results show that a municipality’s fiscal capacity (general revenues) plays a very important role in explaining its educational finance (municipal finance per student); the estimated elasticity is approximately one, which is consistent with empirical results for the U.S. The socioeconomic status of citizens is not significantly related to educational finance and the number of public school students per capita has an unexpected sign; since municipal decision-makers were not elected at the time of data collection, the mechanism for revealing citizen preferences was relatively weak. Each of the cost variables is found to result in higher municipal expenditures on education.

<table>
<thead>
<tr>
<th>Socioeconomic Status of Families</th>
<th>Public School Students Per Capita</th>
<th>Average Teacher Salary</th>
<th>Population Density</th>
<th>Student Teacher Ratio</th>
<th>Capitation Grant</th>
<th>Municipal Fiscal Capacity</th>
<th>Corporation Dummy</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.46 (0.32)</td>
<td>-0.70 (0.19)</td>
<td>0.94 (0.27)</td>
<td>0.10 (0.04)</td>
<td>-1.17 (0.29)</td>
<td>-0.28 (0.18)</td>
<td>1.00 (0.12)</td>
<td>0.14 (0.17)</td>
<td>0.28</td>
</tr>
</tbody>
</table>

* Standard error of estimates in parentheses

Restrictions on laying off teachers and decreasing public school enrollments generally have created excess capacity in many municipalities and constrained their ability to cut costs, forcing them to finance the difference between costs and the central government per student grant. If municipalities could increase their enrollments, the marginal revenue from the central government grant (US$64) would exceed the marginal cost of instruction. For example, if the municipal schools were able to increase class size from the current 27.2 to thirty, the municipality is predicted to respond by decreasing its finance from $5.7 to $4.9 per student; this is consistent with a profit margin of about 13 percent.
28. **Incentives.** The mechanism for financing municipal schools in Chile provides incentives for the schools to increase attendance, especially given the excess capacity of some municipal schools. An increase in municipal enrollments would for many schools raise costs less than the capitation grant, thereby generating a "profit". Thus, increases in class size lead to reduced municipal finance.

29. Municipalities also face incentives to reduce educational costs in order to limit municipal finance. One means of reducing costs is to introduce greater flexibility in teacher employment conditions, including total compensation. About one-fifth of all municipalities have elected to eliminate municipal departments and form corporations responsible for managing the schools, with a resulting change in employment regulations from the municipal code to the less restrictive code for private employers. However, there is no evidence that those municipalities with corporations have been able to reduce their level of finance for education.

30. Unless constrained by maintenance of effort provisions or minimum expenditure requirements, municipalities can be expected to respond to increases in capitation grants by reducing their own outlays on the service. The resulting reduction can be used to either increase spending on other public services or to lower municipal revenues, both of which are likely to be attractive to residents and voters. There is some evidence of this in the financing of Chilean education. Those municipalities receiving larger capitation grants have smaller municipal finance of education, although the magnitude of this effect is small.

C. Cost Reimbursement Grants for Primary Health Care.

31. Cost-reimbursement transfers require the subnational government to submit receipts and evidence of services provided in order to receive transfers from the central government. While cost-reimbursement procedures could conceivably be used to finance a wide variety of government goods and services, in practice they are most widely used to finance goods and services which may be "lumpy" in nature, requiring large outlays over a short period of time, or which vary widely between jurisdictions. The construction of large physical works is an example of a lumpy good, while tertiary health care is an example of a service where the quantity and cost may vary widely between jurisdictions.

32. An example in LAC of the use of cost reimbursement is Chile's finance of municipal primary health care costs on a fee-for-service basis. This case provides several conclusions: (1) full reimbursement of costs in the absence of cost and quantity controls provides a strong incentive to municipalities to expand health services and thereby results in a very large growth in central government health transfers; (2) municipalities adjust their service mix in response to profit (fee minus cost) incentives; (3) poorly designed cost controls can have adverse effects on equity; and (4) uniform cost-sharing can also adversely affect equity.

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24 Subsequently, in 1992, a Teacher's Employment Statute was enacted which now regulates employment of all publicly-financed teachers and, thus, eliminates this advantage.

25 See Annex A, Table 3, which shows a negative relationship between the size of the grant and municipal finance.
33. **Distribution of Grants.** The distribution of central government grants as of 1990 is summarized in Figure 3.2. On a per capita basis, municipalities with the highest concentration of poor residents received one-third more than did those with the lowest poverty concentration; municipalities with the lowest fiscal capacity received one-quarter the amount of those with the highest fiscal capacity; and municipalities with the highest health needs received about the same as those with the lowest needs as proxied by a biologic/physiologic health needs indicator developed by UNESCO.

![Figure 3.2: Average Grants and Expenditures for Primary Health Care in Chile Municipalities](image)

34. **Municipal Finance.** The expenditure behavior of municipalities either create or exacerbate apparent inequities in the distribution of central government transfers. For example, as shown in Figure 3.2 municipalities with the lowest poverty concentration transferred fewer resources from their general funds to health than did municipalities with high poverty rates; the overall result is lower health expenditures in high poverty municipalities where public health demand is arguably higher. Similarly, a high positive income (+0.67) elasticity of demand for health resulted in much higher municipal finance and expenditures on health in municipalities with high fiscal capacity (see Box 3.3). Finally, municipalities with low health needs provided larger transfers to health than did those with high health needs, although the latter still had higher expenditures per capita.

35. **Incentives.** While the equity effects of the Chile fee-for-service health transfer are clear, the efficiency effects are not so clear. In response to the incentives implicit in the fee schedule, municipalities adjusted their mix of health services and provided inadequate amounts of preventive services, which are usually highly cost-effective, but the size of the effects of this service mix on the health status of beneficiaries in unknown. Also, while municipalities have an incentive to minimize the costs of service provision, the resulting efficiency in internal resource allocation is unknown.

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26 The complete estimated model is given in Table 3 of Annex B.

27 Furthermore, the fact regional health administrators have had the authority to make ad hoc health grants to municipalities facing financing difficulties reduces the incentives to reduce costs.
Box 3.3: Municipal Finance of Primary Health Care in Chile

People requiring primary health care in Chile can either visit a free, municipal clinic or, if they are employed and have insurance coverage, visit a private clinic. Users of public clinics have significantly lower income and worse health indicators than users of private clinics (see Annex B, Table 1). Since municipal clinics are partially reimbursed for their costs by the central government on a fee for service basis, municipal health finance depends on community demand for service quality and the cost to the municipality of providing health services. Data were collected on 61 Chile municipalities to estimate a model of municipal health finance; the sample is constrained by the fact that data on public health users is available only for selected cities in the 1992 household survey (CASEN 3).

The literature on local government spending guides the specification of a model that says municipal expenditures on health net of the central government reimbursement should be positively related to municipal fiscal capacity (measured by per capita general revenues) and the voter's tastes and ability to pay (captured by average per capita income); costs (proxied by population density and regional wage levels), organizational arrangements (whether or not health services are provided by a public corporation), and reimbursement levels (the health grant per beneficiary) should also affect municipal spending.

<table>
<thead>
<tr>
<th>Per Capita Income</th>
<th>Population Density</th>
<th>Wage Zone</th>
<th>Municipal Fiscal Capacity</th>
<th>Health Grant for Beneficiary</th>
<th>Corporate Dummy</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.68 (.29)</td>
<td>0.05 (.04)</td>
<td>0.07 (.21)</td>
<td>0.68 (.20)</td>
<td>0.91 (.15)</td>
<td>0.08 (.21)</td>
<td>0.64</td>
</tr>
</tbody>
</table>

* standard error of estimates in parenthesis

The estimated results show that three variables importantly affect municipal health spending per beneficiary. Higher per capita income increases demand for municipal health spending, and higher municipal fiscal capacity per capita results in higher municipal health spending; both estimated elasticities are about 0.7. Finally, higher central government reimbursements per beneficiary increase municipal health spending (net of the reimbursement), confirming that cost reimbursements are de facto partial. Differences in input prices (proxied by density and the wage zone) across municipalities have no statistically significant, independent effect on municipal health spending, nor does the provision of health services through a public corporation.

The model does not permit a test of the hypothesis that an increase in cost reimbursement rates would lead to reduced municipal health spending. Also, the data do not allow us to examine if lower reimbursement rates lead to improved efficiency in the delivery of health services.

36. From the municipal perspective, the Chilean cost-reimbursement mechanism has four major disadvantages which impede efficient administration. First, the municipality must spend before it is reimbursed, which can create cash flow problems. Second, the complexity of the fee schedule and the mechanism for obtaining reimbursement reputedly entails large administrative costs (for which estimates are not available). Third, despite its apparent transparency, the fact that regional health administrators have the authority to make ad hoc health grants to municipalities within the region means the true allocation criteria are obscure.
Fourth, uncertainty as to the magnitude of health transfers that will be received by the municipality during its fiscal year hinders budgeting and planning.28

D. Competitive Grants for Rural Road Projects.

37. Competitive grants require objective criteria and transparent procedures for the selection of projects to be funded. As is common in most LAC countries, the Colombian government finances rural road construction and maintenance through a competitive grant program. This program, which is administered by the Rural Roads National Fund (FNCV) finances the highest priority projects proposed by local governments and recommended by the FNCV’s regional offices. Priority is determined on the basis of cost-benefit ratios and the extent to which several other criteria are met. For instance, feeder roads cutting across several jurisdictions are preferred to those that are strictly local; roads that connect with other segments of the regional networks are favored over those that serve smaller areas; and repairs and maintenance works have priority over new construction.

38. **Variable Matching Rates.** What makes the FNCV program unique in principle is a system of variable matching rates which determine cost-sharing. Once a project is selected for finance by FNCV, a matching or cost-sharing rate is determined for the jurisdiction in which the project is located. The mechanism for setting the matching rate is not fully transparent, although it is most strongly tied to population size, which is thought to be a good proxy for fiscal capacity.

39. In practice, there is no statistically significant relationship between a jurisdiction’s fiscal capacity and its matching rate (see Annex C, Table 2). Indeed, Figure 3.3 shows that jurisdictions with the lowest fiscal capacity (as measured by per capita earmarked IVA transfers for investment) have slightly higher matching rates than those with the highest fiscal capacity. In addition, jurisdictions with low poverty rates have higher matching rates than those with high poverty rates; jurisdictions with high fiscal effort (as measured by own source tax revenue per capita) have slightly higher matching rates than those with low effort; and municipalities with low need (as measured by

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28 The government has introduced recent reforms to reduce the discretionary authority of regional administrators and to provide minimum guarantees for the magnitude of health grants a municipality will receive.
total meters of municipal roads per capita) face higher rates than those with high need. Perhaps the most striking finding from this analysis is the low average matching rate (only 6.2 percent) and the small differences in average matching rates between jurisdictions grouped lowest and highest on any of these criteria.

40. **Distribution of Grants.** While matching rates do not vary greatly among communities with funded projects, the per capita value of their grant does. Figure 3.4 shows that, while there are small variations in matching rates between jurisdictions, the differences in per capita grant amounts are very large. Regression analysis (see Annex C, Table 3) further shows the per capita value of the grant is strongly and positively associated with fiscal capacity. This largely reflects (1) the constraints municipalities face in financing their matching share for road construction and to ensure continued maintenance of those roads and (2) the fact that variations in matching rates in practice fail to adequately compensate for differences in fiscal capacity. However, in interpreting these results, it is also important to recognize that the FNCV is just one of several programs to finance road construction in Colombia. A sectoral review of road finance, which was beyond the scope of this study, should evaluate the FNCV program in light of the overall picture.

41. **Incentives.** The low municipal matching rate in Colombia's FNCV program provide strong incentives to municipalities to not use municipal revenues to undertake that road construction which appear to meet FNCV criteria and, thus, may be financed by FNCV sometime in the future and, also, to propose over-engineered and overly-costly projects for finance by the competitive grant program. It also provides a strong incentive to defer municipalfinanced maintenance on those roads which, if sufficiently degraded, might be eligible for FNCV road rehabilitation or maintenance grants. On the other hand, the implicit reward to higher fiscal effort provides an incentive to increase local revenues, especially since fiscal effort is explicitly and positively rewarded in the formula that determines IVA transfers to municipalities.

42. Municipal incentives could be improved through higher average municipal matching rates for new construction; matching rates for annual maintenance which are no higher than those for construction; and lower matching rates for jurisdictions that raise user fees on roads, in order to both reward higher fiscal effort and to encourage cost-recovery.
1. The central government has multiple and oftentimes conflicting objectives concerning the services provided by subnational governments in decentralized systems. Its objectives for primary education, primary health care, and rural roads were discussed in Chapter II, and existing categorical grant programs were evaluated in Chapter III in light of these objectives. In this chapter, we consider how alternative grant designs affect these objectives. The effects of grants depend on the institutional context and the behavior of grantees. Hence, grant effects, including tradeoffs between central government objectives, can only be analyzed in a country-specific and sector-specific context. The results of simulations for alternative grants for education, health, and roads are presented in this chapter and provided in greater detail in Annexes D-F.

A. General Principles.

2. The grantor, typically the central government in Latin America, should select a grant design in light of its sectoral objectives, the institutional context, and the actual and anticipated expenditure and finance behavior of grantees, usually municipal or regional governments. In this chapter, we consider how these factors might be used to evaluate alternative grant designs. While administrative and governance capacity to monitor program performance and enforce conditionality also constrain and influence grant design, discussion of these issues is left for Chapters V and VI.

3. Sectoral Objectives. Central government objectives and their relative weighting vary depending on the sector. These objectives are most clearly defined and enunciated when the services produced by the sector have strong national public good characteristics. Since income distribution and equity are usually viewed as public goods that are appropriate central government responsibilities, the national government often has a strong interest in the social services, irrespective of the level of government assigned the legal responsibilities for ensuring their provision. Similarly, the central government's unique national perspective gives it a role in ensuring that public services are provided to ensure that national as opposed to parochial welfare is maximized. Hence, it has a particular interest in seeing to it that interjurisdictional spillovers resulting from the mobility of human capital, the production of environmental goods,
or the inability to exclude outside consumers do not result in suboptimal provision of government goods and services.

4. Primary education, primary health care, and rural roads are all areas where the national or regional governments may have objectives which warrant a role in financing and influencing the behavior of the local governments which actually provide the services. Primary education affects income distribution and social mobility, and the fact that graduates are mobile means the public benefits of education are not fully captured by the local jurisdiction while a substantial portion of the costs of poor education are borne outside the jurisdiction. Primary health care is similar to education in its effects on the earned income of health clinic beneficiaries, who are primarily the poor, and the fact that failure to provide basic preventative services can result in higher health care costs for society, with some of those costs borne by other governmental jurisdictions. Finally, national and regional interest in the construction and maintenance of rural roads is in large part tied to their effect on raising incomes of the rural poor through improved access to markets and social services; in part due to the interjurisdictional spillovers resulting from the inability to exclude outside users; and in part due to capital market imperfections which constrain municipalities in financing road construction.

5. Institutional Context. Given a central government’s specific interests and objectives in a sector, variations in community characteristics and the assignment of revenue and expenditure responsibilities play a critical role in determining the design of intergovernmental transfers. For example, if revenue-sharing or block grants result in approximately equal fiscal capacity across jurisdictions, the central government need not concern itself with fiscal disparities in designing a sectoral grant. On the other hand, if local or regional governments vary widely in their fiscal capacity, the central government might use fiscal capacity to in part determine the size of the grant received by the subnational government. As another example, if poverty is equally distributed across jurisdictions, there is no strong rationale to vary grant amounts with poverty levels. But if poverty is not equally distributed, those jurisdictions with high poverty rates may face higher demand for some services (e.g., primary health care clinics) or higher costs of service delivery, which may warrant higher central government grants. In general, disparities across jurisdictions in demand or need, in capacity to provide services, and in the costs of providing services argue for grant designs which to some extent compensate.

6. The assignment of expenditure responsibilities also affects grant design. If the central government is required to use regional governments as pass-through agencies to municipalities, it is important to design the grants to the regions so as to influence the region’s design of grants to the municipalities. Also, in some cases, the central government is, in the name of provincial or local government autonomy, constrained in its authority to directly monitor the use of grant funds; in this situation, an important part of the grant design is the provision of incentives to develop adequate monitoring mechanisms at the subnational level.

7. Behavior of Grantees. National interests imply a potential financing role for the central government, but the size of this role and grant design depend on the current behavior of subnational governments. If an adequate quantity and quality of services is provided by local
governments, there is little justification for central government intervention. If local
governments have very constrained capacity to raise additional revenues, including fiscal effort
as a variable in the grant formula hardly makes sense. Similarly, constraints to local-revenue
raising may imply that a high cost-sharing or matching rate would distort expenditure patterns
and adversely affect other central government objectives by shifting expenditures out of sectors
which do not require cost-sharing.

8. Grantee patterns in the use of funds also affect grant design. If the mayors of
municipalities view grant monies as a means to finance politically-visible landmarks, the central
government may wish to impose stringent conditions on the use of funds. Such conditions are
likely to be different if municipalities tend to allocate grant monies much the same as any other
revenues. In general, incentives and regulations are required to elicit desired behaviors.

9. Simulations. The central government typically has a number of objectives when
designing its sectoral grants. While it is generally known which objectives conflict, the precise
size and nature of the tradeoffs involved can only be revealed by simulating alternative grant
designs that include different allocation criteria that correspond to the government's objectives.
In what follows, we present alternative grant designs consistent with the objectives discussed in
Chapter II for primary education, primary health care, and rural roads, and simulate the grants
to determine how well the alternatives meet those objectives. The education and health
simulations use Chile's 325 municipalities as the data base. The rural road simulations use
Colombia's departments and the municipalities of the Department of Tolima as the database.
The variations in need, poverty, fiscal capacity, etc., found across municipalities in Chile and
Colombia are similar to those found in other LAC countries. Hence, the conclusions derived
from these simulations are generally applicable in the Region.

B. Education.

10. The value of the Chile Ministry of Education capitation grant to municipalities (and
subvened-private schools) has decreased by more than one third since 1981. In response,
municipalities have increased their own financing of municipal schools, resulting in increased
disparities in spending per pupil. The Ministry has responded to this situation, in part, by
mandating minimum teacher wages and providing additional

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Capitation</td>
<td>Formula-based Central Government grant per daily attendance, adjusted for special costs.</td>
</tr>
<tr>
<td>Percentage Equalizing</td>
<td>Central Government grant per student is inversely related to municipal fiscal capacity; municipalities with more than double average fiscal capacity receive nothing.</td>
</tr>
<tr>
<td>Percentage Equalizing with Expenditure Mandate</td>
<td>Same as above except all municipalities mandated to spend some minimum per student.</td>
</tr>
<tr>
<td>Variable Matching</td>
<td>Size of Central Government grant varies directly with municipal finance, with the matching rate determined by fiscal capacity.</td>
</tr>
</tbody>
</table>
financing to municipalities to cover the costs of increased pay.\textsuperscript{29} The Ministry should also consider other alternatives. These alternatives should be evaluated in terms of the objectives discussed in Chapter II: (1) increase the minimum level of educational services provided to all school children; (2) improve equality of educational opportunity; (3) increase school performance through gains in efficiency; and (4) maximize the increase in average per pupil school expenditures by increasing municipal finances.

11. **Policy Choices.** The Ministry has several options for attaining its objectives.\textsuperscript{30} In this analysis, we assume the option adopted will be to increase the existing capitation grant or to adopt one of three alternative supplementary grants listed in Table 4.1; a larger set of options is defined and simulated in Annex D. These alternatives are all formula grants which base any municipality’s transfer on its fiscal capacity, poverty rate, educational achievement, and municipal fiscal effort (finance per student) in education.

12. The first policy option is to simply increase the base funding level of the existing student capitation grant by 15 thousand pesos per student, which is about one-half the reduction in the real value of the capitation grant since 1981; the current distributional formula is assumed to remain unchanged. The second option is to introduce a new, percentage-equalizing grant which provides larger grants per student for municipalities with low than high fiscal capacity. A third option is the same as the second with the addition of a mandate that every municipality finance education expenditures of at least 15 thousand pesos per student. Figure 4.1 illustrates for this third option how the Central Government grant varies with the relative fiscal capacity of the municipality (defined

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig4.1.png}
\caption{Percentage Equalizing Grant}
\end{figure}

\textsuperscript{29} This mandate and associated additional funding applies in a modified form to subvened-private schools. They do not receive additional funding to cover the higher wages they may have to pay to compete with municipal schools.

\textsuperscript{30} These include mandating that municipal governments increase their spending, redoing the formula of the existing capitation grant to better leverage central government transfers, and increasing the general revenues of municipalities. As shown in Annex C, the latter is a particularly expensive (to the Central Government) means of increasing education spending.
as the non-earmarked revenues of the municipality compared to the national average for all municipalities); the expenditure mandate is constraining only for those municipalities having greater than average fiscal capacity. For example, a municipality having twice the average fiscal capacity would receive a Central Government grant of zero but still be required to spend $15 thousand per student. Finally, the fourth option requires cost-sharing or matching finance from the municipality, with the matching rate determined by fiscal capacity.

13. **Simulations.** The results of each of the four grant designs given in Table 4.1 were simulated for all Chilean municipalities. The simulations presume average Central Government education transfers per student increase by 15 thousand pesos, although the size varies by municipality; in other words, each of the policy options simulated here does not replace the existing capitation grant but, instead, is supplementary to it. The results of the simulations are evaluated in terms of the presumed Ministry objectives. The impact of grant options on minimum expenditures is reflected in the size of the transfer and change in educational spending in those municipalities which have the lowest fiscal capacity. The impact of grants on expenditure equality can be seen by comparing the spending levels of municipalities at the extreme ranges of poverty rates and fiscal capacity. And the impact of grants on municipal finance can be estimated using the model given in Box 3.2. The effects of grants on efficiency can only be determined from the incentives implicit or explicit in grants.

14. Figure 4.2 summarizes the changes in municipal finance of education resulting from the increase in Central Government grants for the four options. It shows that increasing the student capitation grant or introducing a percentage equalizing grant with no minimum expenditure mandate both result in reduced municipal finance; this is consistent with the finding reported

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31. This means of measuring equality is adopted for convenience. Obviously, there are superior ways of measuring spending equality, including the computation of Gini coefficients and Theil statistics.
earlier that, other things equal, municipalities tend to substitute additional education grant funding for funding from their own general revenues. On the other hand, imposition of an expenditure mandate dramatically increases municipal finance, and offering incentives for municipal finance in the form of a matching grant increases municipal finance by a smaller amount.\textsuperscript{32}

Figure 4.3: Changes in Education Finance for Low and High Fiscal Capacity Municipalities

![Bar chart showing changes in education finance for low and high fiscal capacity municipalities.]

15. Figure 4.3 reports the simulation results of the four alternative grant designs for the bottom and top decile of municipalities as ranked in terms of fiscal capacity; for each alternative, both the additional government grant per pupil and the change in municipal finance per pupil are reported. For each option, the Central Government grant is determined by formula (including, in the case of the matching grant, the spending response of the municipality). For example, all municipalities would receive the same increase in capitation grant irrespective of their fiscal capacity, but high fiscal capacity municipalities would not be eligible for any increased grant under the percentage equalizing option or the variable matching option.

16. The magnitude of the municipal response to the additional Central Government grant varies with the amount of finance already provided and the existence of an expenditure mandate. In the case of an increase in the capitation grant, for example, municipalities with high fiscal capacity reduce their educational finance more than those with low fiscal capacity because their educational finance is large before introduction of the additional Central Government funding. The expenditure mandate increases the educational finance by both low and high fiscal capacity municipalities, but the amount is smaller for those with high fiscal capacity because of their already high average financing of education.

\textsuperscript{32} Yet another policy option available to the Central Government is to stimulate additional spending on education through increases in general revenue transfers to municipalities. Simulation of this result shows that it would require an increase in general revenue transfers per pupil of 341 thousand pesos to bring about an average increase in education expenditures per pupil of 15 thousand pesos.
17. Figure 4.4 reports the changes in education finance for lowest and highest municipalities in terms of poverty rates. High poverty municipalities receive larger Central Government grants than low poverty municipalities in the case of percentage equalizing grants but the reverse is true in the case of variable matching grants, due to the smaller addition to municipal finance among those with high poverty rates. Further results reported in Annex D demonstrate that including the poverty level in the grant formula sharply increases the size of grant received by high poverty rate municipalities. As shown in Annex D, the results are similar when comparing grant designs for municipalities with low and high educational achievement. Low achieving municipalities are favored by the percentage equalizing option, while high achieving ones are favored by the variable matching grant. However, if the inverse of educational achievement is included in the grant formula, grants to low achieving municipalities increase sharply.

18. **Conclusions.** The simulations reported here and in Annex D permit the following summary and conclusions:

(1) Only expenditure mandates or adequate incentives (matching grants) successfully leverage transfers into increases in municipal finance; an increase in the student capitation grant leads to the largest decrease in municipal finance.

(2) Expenditure mandates clearly serve to leverage Central Government financing, but it is the low spending districts that are most affected by the mandates. These happen to be municipalities with high poverty rates, low fiscal capacity, and low achievement scores. Percentage equalizing grants help offset these effects by targeting larger transfers to the municipalities with these characteristics.

(3) Per student expenditures prior to the grant are lowest in high poverty ($104.6) and low fiscal capacity ($60.9) jurisdictions. A percentage equalizing grant with expenditure mandate would increase spending the most (+$22.3) in high poverty municipalities, while a variable matching grant would increase spending the most (+$27.3) in low fiscal capacity municipalities.
(4) Prior to the grant, per student expenditures are least equal comparing jurisdictions with low and high fiscal capacity; the spending difference is $75.9. Among the options, a variable matching grant would increase the spending of low fiscal capacity jurisdictions the most and, thus, reduce the spending difference the most. But, if instead of reducing spending differences, the goal were to increase the resources available to schools with high percentages of poor children, the preferred choice would be a percentage equalizing grant with expenditure mandate.

(5) These findings demonstrate that the results of any simulation depend on the formula and, especially, the weights attached to variables in the formula. Identifying the best formula requires successive iterations of alternative formulas, in addition to sensitivity analyses regarding likely behavior on the part of the grant recipient.

(6) Policy-makers with multiple objectives face tradeoffs in their choice of formula. The magnitude of these tradeoffs depends on the grant formulas as well as the institutional setting. While this again indicates the importance of simulating grant designs, in the end policy-makers have to decide which objectives have highest priority.

19. These results suggest that, given presumed central government objectives, the optimal grant to increase spending on primary education in Chile would be a formula-driven, percentage equalizing grant accompanied by a minimum expenditure mandate where the size of the maximum grant per pupil is directly related to the percent of the school age population in households classified as poor. This grant could be accompanied by regulations (e.g., specifying extra school resources or additional teacher class time) to target additional spending on poor students.

C. Primary Health Care.

20. Problems with the fee-for-service mechanism for reimbursing municipalities for the basic health services they provide through their health clinics have led the Government of Chile to consider altering the way it finances decentralized primary health care, with most attention being given to adoption of a formula-based capitation grant. In making this change, the Government has several objectives: (1) satisfy minimum health needs of those using municipal health clinics; (2) create greater equity in service provision; (3) improve efficiency in the provision and the mix of health services offered by the clinics; and (4) improve health care as much as possible without increasing Central Government spending. The challenge facing the Ministry of Health is to devise a capitation grant that meets these objectives.
Table 4.2: Policy Options for Health Transfers

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Cost Reimbursement</td>
<td>Cost reimbursement on the basis of Ministry of Health fee schedule, case mix, and number of services delivered.</td>
</tr>
<tr>
<td>Formula Grant with Maintenance of Effort</td>
<td>Size of capitation grant varies with determinants (poverty and age) of use and cost; municipalities are prohibited from reducing their current levels of finance.</td>
</tr>
<tr>
<td>Formula Grant with Minimum Expenditure Mandate</td>
<td>Same as above except all municipalities mandated to spend some minimum per beneficiary.</td>
</tr>
<tr>
<td>Open-Ended Variable Matching Grant</td>
<td>Size of Central Government grant varies directly with municipal finance, with the matching rate determined by fiscal capacity.</td>
</tr>
<tr>
<td>Open-Ended Variable Matching Grant with Minimum Expenditure Mandate</td>
<td>Same as above with the addition of a mandate that expenditures per capita not be less than the existing national average</td>
</tr>
</tbody>
</table>

21. **Policy Choices.** A wide variety of options are available to the Ministry of Health in designing its new transfer system, including the five options evaluated here and defined in Table 4.2. An assessment of other options is given in Annex E. The options analyzed here are kept simple in order to demonstrate their effects. One option is to retain the existing cost reimbursement plan, perhaps with simplification of the fee schedule to reduce administrative burdens and adjustments in reimbursement fees to provide increased incentives for preventive health care. A second option is to substitute a formula grant per capita, where the transfer is weighted by each municipality's relative poverty rate and relative ratio of young and old inhabitants.\(^\text{33}\) As evaluated here, this option also requires that each municipality not reduce its current level of health finance (i.e., maintenance of effort). A third option is identical to the second except maintenance of effort is replaced by the requirement that each municipality provide adequate financing to guarantee per capita expenditures at least equal to the current national average. A fourth option would provide a matching grant for municipal health finance, with the rate itself varying inversely with the municipality's fiscal capacity. Finally, a fifth option is a variant on the fourth and requires the same minimum expenditure as specified for option three, i.e., that each municipality provide adequate financing to guarantee expenditures equal to the current national average.

22. **Simulations.** The results of each of the grant designs given in Table 4.2 were simulated for the full set of 325 municipalities in Chile. The simulations presume no increase in aggregate Central Government health transfers to municipalities, although its allocation among

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\(^\text{33}\) Ideally, the aggregate aid received by any health clinic or municipality should be determined by the number of users. Such data are not available for Chile, but analysis of household survey data (Annex B, Table 6) indicates that the poverty rate and the age distribution of the population (less than 4 and over 60 years of age) are good predictors of the number of clinic users. Until reliable data are developed on the number of public health clinic users, capitation formulas should include measures of poverty and/or age distribution.
municipalities is allowed to vary as is the level of finance from municipal general revenues. These simulations D. furthermore presume that the existing system would be fully replaced by the alternatives. Excepting the existing system, the amount of the Central Government grant is determined by formula. The municipal response to each grant is determined using the elasticities for municipal health finance estimated earlier.

23. Figure 4.5 shows the municipal health finance response to each of the five options. Under the existing system, municipalities cover one-quarter of total primary health care expenditures. Replacing this system with a formula based capitation grant and a maintenance of effort requirement is assumed to result in no change in municipal finance. Replacing the existing system with a variable matching grant that provides positive incentives for municipal finance would result in very little change from the existing system, while expenditure mandates options C and E) would significantly increase municipal health finance and, thus, the proportion of total health expenditures which they finance.

24. Figure 4.6 gives the simulation results of the five alternative grant designs for the bottom and top decile of municipalities as ranked in terms of fiscal capacity. The existing system provides significantly higher transfers per capita to high than low fiscal capacities; this difference reflects differences in costs and use of clinic services. In contrast, a variable matching grant would provide much larger transfers to municipalities with low fiscal capacity and very small transfers to municipalities with high fiscal capacity. As a result, high fiscal capacity municipalities would
be forced to finance the expenditure mandate in the fifth option mostly out of their own general revenues. Comparing options B and C in Figure 4.6 also shows the differential impact of a maintenance of effort requirement and a minimum expenditure mandate. Municipalities with low fiscal capacity that currently contribute little to health would, under the expenditure mandate, be forced to significantly increase that contribution. On the other hand, high fiscal capacity municipalities, which already spend far in excess of the expenditure mandate, would be free to significantly reduce their health finance. Compared to the maintenance of effort requirement (Option B), the expenditure mandate (Option C) tends to equalize spending between low and high fiscal capacity jurisdictions.

25. The results of the simulation exercise for low and high poverty municipalities is given in Figure 4.7. The demand-based capitation grant (options B and C) provides much larger grants to high poverty municipalities and smaller grants to low poverty municipalities than either the existing system or variable matching grants. The expenditure mandate would require much larger financial contributions by low poverty jurisdictions.

26. Another distributional impact of alternative grants which is likely to be of interest to decision-makers is the treatment of municipalities with low and high health needs as measured by a municipal-level health indicator developed by UNESCO; these results are reported in Annex E. The current system and the demand-based grant (options B and C) both provide slightly larger grants to municipalities with low health needs compared to those with high needs. The variable matching grant (options D and E) produces the opposite result.

27. Conclusions. The simulations reported here and in Annex E lead to the following conclusions:

   (1) A variable matching grant with no expenditure mandate is as successful as the existing system in leveraging the Government transfer into municipal financial contributions to health. However, the average municipal financing share of total primary health care expenditures is largest under minimum expenditure mandates.
(2) Among the grant options, a variable matching grant, with or without the expenditure mandate, would result in the highest health spending in municipalities with low fiscal capacity, while either the existing system or the variable matching grant with the expenditure mandate results in the highest health spending in municipalities with high poverty.

(3) Spending in high poverty municipalities is highest under the formula grant, which includes poverty as one of the determining variables; all other grant options result in higher spending in the low poverty municipalities. Since there is some evidence of higher use of health clinics in urban centers with high fiscal capacity, it is not appropriate to assume equity would be improved by increasing transfers or spending on municipalities with low fiscal capacity.

(4) As with the education simulations, these findings demonstrate the need for successive iterations of alternative formulas and the fact that policy-makers will almost always face tradeoffs between conflicting objectives in deciding on the best grant formula. The best formula in the case of health is likely to be a demand-driven formula grant with a matching rate that varies with fiscal capacity.

28. Given the objectives which have been assumed on the part of the central government, these results suggest that the optimal grant for primary health care provided by municipalities in Chile would be a formula grant, the amount of which is determined by predictors (especially municipal poverty rates) of clinic use and service cost and which requires cost-sharing by the municipality (either in the form of minimum expenditures or a matching rate). To prevent clinics from restricting use, the grant could be accompanied by regulations requiring them to provide services of minimum quality to all users, or the grant for the subsequent year could be adjusted downward if actual use were less then predicted use.

D. Rural Roads.

29. As part of its overall decentralization strategy, the Government of Colombia has increased the general revenues of departmental and municipal governments and authorized the election of leaders for subnational governments to replace appointed officials. Consistent with this strategy, the Government has devolved to the departmental and municipal governments responsibility for constructing and maintaining secondary and tertiary roads. Responsibility for rural roads is divided between the departments and the municipalities, but the Central Government partly finances their construction and rehabilitation. Proposed legislation, however, would replace direct FNCV matching grant transfers to the municipalities with block grants to the departments, which would be responsible for passing these monies on to the municipalities for rural roads. Several policy options are consistent with the proposed legislation, and the effects of these options are simulated here.
30. **Central Government Objectives.** The Central Government has several objectives in financing municipal rural roads: (1) ensure that subnational governments with large rural areas have an adequate feeder road network; (2) ensure that municipalities (which have no access to capital markets) with severely constrained general revenues can finance high priority road projects; (3) alleviate rural poverty; (4) prevent subnational governments from using grant financing to lower their taxes; and (5) ensure adequate maintenance of the existing road network. Policy alternatives for intergovernmental grants should be evaluated in terms of these objectives.

31. **Policy Choices for Departmental Block Grants.** The Central Government can provide the departments with the additional resources required to operate the rural roads program either by increasing departmental general revenues (through new tax sources or revenue sharing) with mandates to maintain the rural roads program or through block grants to the departments to pass through to the municipalities for rural roads. While departmental general revenues might be increased as part of a more general reassignment of revenue and expenditure authority, current plans call for introducing a block grant, and that is the option simulated here.

32. The amount of money a given department would receive under a block grant could be determined by: (1) continuing to transfer the amount currently received by municipalities in the department under the FNCV program or (2) using a formula to transfer revenues consistent with Central Government objectives for rural roads. The first option would not entail redistribution of funding between departments and, thus, might be more politically feasible than a redistributive grant, especially during the transition process; it would, however, in the long run not allow the flexibility to change funding with program size or the financing requirements of the departments.

33. Six formula-based options for determining block grants to the departments were simulated here: (1) the amount currently received by municipalities in each department; (2) need (as proxied by meters of municipal roads per capita); (3) municipal fiscal capacity (as proxied by IVA transfers to municipalities earmarked for investment per capita); (4) the department’s absolute poverty rate; (5) fiscal effort (as proxied by municipal own-source revenues per capita); and (6) a formula giving equal weight to need, fiscal capacity, poverty, and fiscal effort. The experience of other countries with transportation block grants suggests that need (option 2) should be the principal determinant of grants.

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34 Fiscal capacity and fiscal effort always have to be defined given the institutional context. In Colombia, municipalities can collect some own-source revenues and the size of this collection is defined as fiscal effort. In addition, municipalities finance most capital expenditures from IVA transfers, which gives a measure of fiscal capacity for rural roads.
34. *Simulation Results for Department Block Grants.* Each of the six grant designs were simulated for Colombia's 33 departments. The simulations presume no increase in aggregate Central Government transfers for rural roads. The results for the bottom and top quintile of departments in terms of need, fiscal capacity, poverty, and fiscal effort are given in Table 4.3. They show the following:

<table>
<thead>
<tr>
<th>ALTERNATIVE GRANT DESIGNS</th>
<th>DEPARTMENTAL CLASSIFICATION</th>
<th>Need</th>
<th>Fiscal Capacity</th>
<th>Poverty</th>
<th>Fiscal Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>1. Maintain existing project grants (FNCV)</td>
<td>107.2</td>
<td>73.7</td>
<td>126.0</td>
<td>70.1</td>
<td>75.5</td>
</tr>
<tr>
<td>2. Formula grant based on need</td>
<td>150.1</td>
<td>33.9</td>
<td>104.9</td>
<td>84.7</td>
<td>107.4</td>
</tr>
<tr>
<td>3. Formula grant based on fiscal capacity</td>
<td>97.1</td>
<td>78.4</td>
<td>71.1</td>
<td>116.3</td>
<td>86.3</td>
</tr>
<tr>
<td>4. Formula grant based on poverty</td>
<td>105.3</td>
<td>56.1</td>
<td>90.7</td>
<td>82.8</td>
<td>125.2</td>
</tr>
<tr>
<td>5. Formula grant based on fiscal effort</td>
<td>45.9</td>
<td>142.5</td>
<td>51.3</td>
<td>106.2</td>
<td>35.6</td>
</tr>
<tr>
<td>6. Formula grant that weighs all factors equally</td>
<td>95.4</td>
<td>85.4</td>
<td>79.7</td>
<td>98.9</td>
<td>88.8</td>
</tr>
</tbody>
</table>

(1) All but one of the six alternatives favor high need over low need departments, the exception being a formula based solely on fiscal effort. Thus, all alternatives, including the existing FNCV system, are acceptable with respect to the single most important criterion.35

(2) Aside from need, the existing FNCV system does poorly, favoring departments with low municipal fiscal capacity, low poverty rates, and low municipal fiscal effort (see Figure 4.8).

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35 This conclusion presumes need is measured by kilometers of municipal roads per capita; for simulations using different need measures, see Annex F.
(3) The Central Government faces clear tradeoffs in its objectives. Formulas solely based on fiscal capacity or fiscal effort strongly favor departments with low municipal fiscal capacity and high municipal fiscal effort, while formulas solely based on need or poverty strongly favor departments with high need and high poverty.

(4) A formula grant that weighs all factors—need, fiscal capacity, poverty, and fiscal effort—satisfies all four criteria while strongly favoring none. Figure 4.9 demonstrates how well this formula grant satisfies the criteria compared to the existing FNCV grants aggregated at the department level; an index value of one indicates neutrality, larger than one indicates the criterion is satisfied, and less than one indicates the criterion is not satisfied.

35. Based on the presumed central government criteria for distribution of block grants for rural roads to the departments, an equal weight formula grant provides the best results. However, one could argue that need and poverty should be the principal determinants of such grants; in this case, a formula grant based on these two variables would work best. In addition, a strong argument could be made for requiring the departments to contribute matching funds to provide a larger incentive for departmental oversight of the rural roads program.

36. **Policy Choices for Department Grants to Municipalities.** The assumption made here is that in its new legislation to devolve rural road grant management to states the Central Government will specify the broad criteria to be used in both project selection and cost-sharing. Furthermore, the relatively low level of central government funding for rural roads

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34 As a comparison in the U.S., the pass-through process is different for each federal aid program. For some grants (e.g., Urban and Secondary Highways Grants), the state passes funds on to local governments using the formula by which they come to the state, while for others (e.g., Bridge Replacement Grants) the state sets its own criteria and priorities.
rules out use of any kind of capitation grant to the municipalities. Instead, departments would continue the FNCV's current practice of selecting a small number of projects to be funded and of specifying the required municipal matching rate.

37. As is the practice with the existing FNCV grants, the most important determinant of a municipality's matching rate should be its fiscal capacity, but measures of a municipality's poverty rate and its fiscal effort could also be included as criteria. Hence, three options were simulated here for that department (Tolima) having the largest number of municipalities (45) in Colombia: (1) maintain the matching rates of the existing FNCV system; (2) a formula that determines matching rate on the basis of fiscal capacity (as proxied by earmarked IVA transfers); and (3) a formula that determines the matching rate by giving equal weights to the municipality's fiscal capacity, its absolute poverty rate, and its fiscal effort (as measured by municipal own-source tax revenues). The two alternatives to the existing system were also simulated assuming an increase in the existing average matching rate of 7.73 percent to a higher 33 percent. The results of the simulations are reported in Table 4.4.
Table 4.4: Simulation Results for Municipal Matching Rates in Tolima

<table>
<thead>
<tr>
<th>ALTERNATIVE GRANT DESIGNS</th>
<th>MUNICIPAL CLASSIFICATION</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fiscal Capacity</td>
<td>Poverty</td>
<td>Fiscal Effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>1. Maintain existing project grants (FNCV)</td>
<td>5.09</td>
<td>9.52</td>
<td>8.88</td>
<td>6.06</td>
<td>7.65</td>
<td>8.97</td>
<td></td>
</tr>
<tr>
<td>2. Formula grant based on fiscal capacity (average matching rate of 7.73% held constant)</td>
<td>17.33</td>
<td>2.98</td>
<td>6.62</td>
<td>5.21</td>
<td>4.57</td>
<td>6.45</td>
<td></td>
</tr>
<tr>
<td>3. Formula based on fiscal capacity (average matching rate of 33%)</td>
<td>74.02</td>
<td>12.75</td>
<td>28.30</td>
<td>22.28</td>
<td>19.55</td>
<td>27.60</td>
<td></td>
</tr>
<tr>
<td>4. Formula that weighs all factors equally (average matching rate of 7.73% held constant)</td>
<td>8.65</td>
<td>6.79</td>
<td>6.59</td>
<td>8.86</td>
<td>9.05</td>
<td>6.34</td>
<td></td>
</tr>
<tr>
<td>5. Formula that weighs all factors equally (average matching rate of 33%)</td>
<td>36.32</td>
<td>28.98</td>
<td>28.12</td>
<td>37.77</td>
<td>38.58</td>
<td>27.04</td>
<td></td>
</tr>
</tbody>
</table>

Note: Tolima has 45 municipalities, of which 25 received FNCV grants in the period 1989-1991. For each municipal classification, the "low" mean is for those 10% of municipalities in Tolima ranking lowest on that criteria, while the "high" mean is for those 10% of municipalities ranking highest; defining low and high as the bottom and top 20%, respectively, of municipalities provides similar results.

38. Simulation Results for Municipal Matching Rates. Each of the options were simulated for the 45 municipalities of Tolima and compared with actual matching rates required of those 25 municipalities currently receiving FNCV grants. The results for the bottom and top decile of municipalities in terms of fiscal capacity, poverty, and fiscal effort are given in Table 4.4 and permit the following conclusions:

(1) The FNCV system does a mixed job of setting matching rates for municipalities in Tolima. It favors (with lower matching rates) those jurisdictions with high fiscal capacity and low poverty rates, although it also provides an implicit reward in the form of lower matching rates to jurisdictions having high fiscal effort.

(2) Basing the matching rate on a municipality's fiscal capacity significantly lowers the "price" to those municipalities with low fiscal capacity; their cost-sharing under this option would be less than one-third what it is under the existing FNCV matching rates.

(3) A low average matching rate means alternative options for determining the matching rate have only a small impact on the "price" faced by municipalities. For example, adopting a formula that assumes an average matching rate of 7.7 percent and bases rates on fiscal capacity results in "price" differential (per $100 grant) of $14 between low and
high fiscal capacity municipalities, respectively. Increasing the average matching rate to 33 percent increases this price differential to $61.

(4) As shown in Figure 4.10, basing the matching rate on three equally-weighted factors satisfies the evaluation criteria no better overall than basing the rate on fiscal capacity alone; both alternatives, however, satisfy the criteria better than the rates established under the existing system.

39. Overall, these results provide evidence in favor of a high average matching rate determined by fiscal capacity alone. Instead of using a municipality's poverty rate to determine its matching rate, it would be preferable to use the anticipated benefits to the poor as one of the criteria used to evaluate project applications. Fiscal effort should probably be deleted from any matching rate formula; given the low probability of having projects funded, the expected returns from raising fiscal effort would be too small to affect municipal behavior.

E. Summary.

40. Central governments have multiple objectives, and they face multiple options in the design of sector-specific intergovernmental grants. Since the effects of grant options depend on institutional conditions (e.g., the distribution of fiscal capacity among jurisdictions) and on grantee behavior (e.g., the elasticity of municipal finance with respect to the government grant), the success of grants in attaining their objectives must be determined through country-specific and sector-specific simulations.

41. In this chapter, government objectives and alternative grant designs were specified for three sectors—primary education, primary health care, and rural roads. Municipal data bases for Chile and Colombia were then used to simulate the grant designs. The simulation results were evaluated by (1) comparing municipal finance response in the case of education and health and (2) comparing the lower and upper decile of municipalities in terms of their fiscal capacity, poverty rates, and, in the case of rural roads, fiscal effort. This type of comparison is satisfactory for the limited purposes of this paper, but any effort to find the single best grant
design for a specific country and sector should look at the effects of alternative grant designs across the full distribution of jurisdictions and use more detailed measures of grant impacts (e.g., use of Gini coefficients to measure equality).

42. The simulations demonstrate that government objectives are often conflicting, and determination of the single best grant formula requires that priorities be set on those objectives. In addition, the simulations provide some evidence in support of the following conclusions:

(1) A simple grant design may attain central government objectives as well as a complex design, and it has the further advantage of being easily understood by the grantor and grantee alike. An overly complex design, which is often the result of political compromise, runs the risk of generating a seemingly random distribution of grant amounts.

(2) Price incentives, especially in the form of variable matching grants, can work as well as mandates in raising expenditures and grantee contributions.

(3) When using price incentives, the average matching rate has to be significant to realistically attain spending and financing objectives.

(4) In the absence of price incentives, regulations in the form of either minimum expenditure mandates or maintenance of expenditure effort requirements are needed to prevent grantees from using some part of grant funding to reduce their own financial effort, including possibly reducing overall fiscal effort.

(5) A central government can best leverage the effect of its transfers on total expenditures by including some measure of the local jurisdiction’s ability to finance, or fiscal capacity, in the grant formula.
Administration of Fiscal Transfers

1. Grants administration concerns the process by which intergovernmental grants are designed and implemented to ensure accountability to the grantor, which is typically the central government. In the case of unconditional revenue sharing or block grants the administrative issues are relatively simple, primarily concerning the operational definition of revenues and the mechanisms by which monies are transferred from the central to lower levels of government.\textsuperscript{39} In the case of grants which carry conditionality, the administrative issues are complex and encompass all levels of government.

2. Surprisingly, there is no research literature on grants administration to complement the extensive literature on grants design. As a result, this chapter draws on related public administration literature and on country experience, both inside and outside LAC. The U.S. experience with grants administration merits special attention because conditional grants play such an important role in intergovernmental fiscal relations in the U.S., and that experience has been evaluated critically in a number of General Accounting Reports.\textsuperscript{40} Box 5.1 summarizes the structure of U.S. grants administration from the federal government side.

A. Administrative Functions: Grantor.

3. The grantor, be it a central or regional government, has several administrative functions, beginning with the designing the grant and institutionalizing that design in legislation. These functions and typical institutional responsibilities are summarized in Table 5.1. After establishing the grant in law, implementing regulations are written and promulgated. Once the grant begins operating, the grantor must determine whether or not grant funds are distributed and used consistent with all laws and regulations and must, also, determine whether or not the programs financed by the grant are effectively and efficiently delivered. These analyses permit

\textsuperscript{39} However, even for unconditional grants, lack of transparency in administrative processes may contribute to budgetary uncertainty among the grant recipients. Loose definitions of the revenue base or loose specifications as to when monies should be transferred enable central government grant administrators to arbitrarily alter the real value of transfers. State Education Secretariats in Brazil have complained that delays in transfers during times of high inflation seriously erode the real value of revenue-sharing transfers made under the Education Salary Tax.

Box 5.1: Administration of U.S. Federal Government Grants

The U.S. federal government administers over 500 categorical grants to state and local governments comprising some US$152 billion in total transfers. Each level of government has responsibilities to ensure that grant funds are used efficiently, effectively, and in compliance with grant conditionality as expressed in regulations. Grant administration is generally regarded as effective but is, also, criticized as imposing excessive administrative costs on grantees, in part due to the complexity of regulations and in part due to the large number of grants. As a result, efforts have been made to simplify regulations and make them consistent across grant programs. One significant reform introduced was the Single Audit, which provides for only one federal audit of each jurisdiction. That audit covers all federal grant programs; the frequency of the audit varies with the size of the jurisdiction. The Federal Government institutional responsibilities for grant administration are summarized in the following table:

<table>
<thead>
<tr>
<th>Institution/Office</th>
<th>Functions and Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congress</td>
<td>Prepares and approves legislation which specifies: (a) program objectives, (b) general compliance requirements, and (c) project-specific compliance requirements. Administrative Procedures Act establishes general procedures for issuing all regulations, seeking comment, etc., and specific grant acts establish specific review procedures and public participation requirements.</td>
</tr>
<tr>
<td>OMB (Office of Management and the Budget of the President)</td>
<td>Issues OMB circulars on general compliance and accountability requirements; Circular A-133 sets out audit procedures and responsibilities. Reviews Departmental regulations of project-specific compliance requirements, including reporting requirements.</td>
</tr>
<tr>
<td>GAO (General Accounting Office of the Congress)</td>
<td>Primarily responds to requests by Congress for audit of problem areas; may audits Department Inspector General offices and evaluate the quality of audits submitted by grant recipients; also, prescribes standards for audits of state and local governments.</td>
</tr>
<tr>
<td>Department</td>
<td>Prepares regulations and reporting requirements consistent with legislative intent and following Government and Department procedures for issuing regulations and seeking public comment.</td>
</tr>
<tr>
<td>Program Office</td>
<td>Ensures the Department follows Government and Department requirements; reviews Department procedures to ensure quality of external audits and operational reviews. May determine sanctions if remedial action not undertaken by grantee.</td>
</tr>
<tr>
<td>Inspector General</td>
<td>Monitors and evaluates program operation and performance; ensures compliance with law and regulations.</td>
</tr>
<tr>
<td>Program Office</td>
<td>Authorizes disbursements.</td>
</tr>
</tbody>
</table>
Table 5.1: Grant Administration: Functions and Responsibilities

<table>
<thead>
<tr>
<th>Administrative Function</th>
<th>Activities</th>
<th>Institutional Responsibilities</th>
</tr>
</thead>
</table>
| Legislation             | Grant design and simulation.  
                          |  Prepare legislation.        |  Sectoral Ministry, Ministry of Finance  
                          |  Enact legislation.          |  Sectoral Ministry, Legislative Committee  
                          |                          |  Legislature |
| Regulation              | Write draft regulations to implement legislative mandates.  
                          |  Review and issue final regulations. |  Sectoral Ministry, Ministry of Finance  
                          |                          |  Sectoral Ministry, Ministry of Finance |
| Financial Control       | Assess capacity of grantee to keep accounts and ensure proper use of grant funds; impose sanctions if necessary.  
                          |  Assess quality of grantee’s audits or provide direct audit of grantee’s accounts. |  Supreme Audit Institution |
| Operational Control     | Assess effectiveness of grantee’s program financed under grant and ensure compliance with regulations; impose sanctions if necessary.  
                          |  Provide technical assistance to grantee to improve effectiveness. |  Sectoral Ministry |
| Evaluation              | Evaluate grant design, implementing regulations, and program effectiveness.  
                          |  Propose and enact changes in grant design and regulation. |  Sectoral Ministry, Legislative Committee |
the grantor to later evaluate the grant program and, on the basis of that evaluation, either modify or terminate the grant. For the grantor to effectively administer grants, it must have the legal and political capacity to sanction subnational governments for failure to comply with laws and regulations. Since grantors may find it politically difficult to impose sanctions or penalties, the design of sanctions must be carefully considered when issuing the implementing regulations.

The Process of Grant Design

4. Grant design is determined by both technical analysis and political debate. Three principal institutions are typically involved in the design of categorical grants: the sectoral ministry, the finance ministry, and the legislature. While the design initiative may originate in any of these institutions, in LAC the sectoral ministry usually takes the lead role. Ministry analysts and/or consultants propose alternative designs, analyze their impacts and estimate their costs, and, data permitting, simulate their distribution across jurisdictions. Following this analysis, the sectoral ministry communicates its recommended alternative to the finance ministry for review, especially regarding effects on the central government's expenditure. Once reviewed and approved, the government may directly propose legislation for legislative review and approval.⁴¹

5. The principal problem in LAC analytic capacity lies with poor quality data at the level of subnational governments. The lack of adequate measures of need, finance, fiscal capacity, etc., constrain grant design and makes it difficult to predict government fiscal behavior or to simulate grant distribution. Colombia, for example, lacks detailed expenditure data at the municipal level; Argentina lacks uniform accounting methods to permit fiscal comparisons across subnational jurisdictions; and the most recent Brazilian fiscal data on municipalities under 50,000 population is at best five years old.

6. In addition to the data problem, the limited experience of most countries with decentralized systems translates into a general lack of knowledge about grant design and poor understanding about the fiscal behavior of subnational governments. The result is sometimes unimaginative transfer design and naive predictions as to subnational government behavior.

7. Political considerations influence grant design at every stage of the process, but the nature of those considerations vary by institution. Thus, the sectoral ministry is concerned about the effects of the grant on its principal constituencies; for example, in education, the teacher's union will be vocal in opposing any grant which has the potential to adversely affect teacher pay. The finance ministry is primarily concerned about the political implications of changes in the fiscal deficit. Hence, it may argue for designs that constrain spending on the grant. The legislature, the members of which receive votes for delivering benefits to constituents, is principally interested in the distribution of the grant across jurisdictions and, thus, may argue for protecting jurisdictions from possible loss of revenues as a result of the grant program.

⁴¹ In some countries (e.g., Chile) only the executive branch may formally introduce fiscal legislation of this sort to the Congress.
8. The result of political influence may very well be a grant which is too complex for transparency and accomplishes none of its purported objectives. A commonly cited example is the debate on the 1974 U.S. revenue sharing act, which resulted in two complicated distributional formulas.\textsuperscript{42} Subsequent empirical analyses could not find any relationship between the distribution of revenue sharing funds and the diverse objectives of the grant.

**Writing Grant Regulations**

9. The language of laws typically requires more detailed specification prior to program implementation. This regulation or implementing legislation converts legal principles into precise rules. Two types of regulations or rules apply to grants. The first type is general regulations which apply to all grants or all government-financed programs; procurement rules is an example of this type of regulation. The second type is regulations which are grant-specific and result from the specific legislation authorizing the grant program. These grant-specific rules are in most cases drafted by the sectoral ministry, taking into consideration the legislation and the administrative context within which the program will function. Thus, in Chile, a municipal school wishing to receive a transfer from the central government must satisfy the following rules: (a) teachers have the necessary credentials; (b) class size falls within minimum and maximum numbers; (c) the school has adequate physical space for its number of students; and (d) no tuition or other charges are levied on the student aside from authorized matriculation fees.

10. Drafting of regulations or implementing legislation is important and requires legal skills, which are in abundant supply in most LAC sectoral ministries, but enforcement depends on the availability of data and the specification of sanctions for noncompliance and the political will to impose them. In practice, sanctions are rarely imposed because they could harm the intended beneficiaries of the grant program.

**Financial Management of Intergovernmental Transfers**

11. The grantor has two roles with respect to the financial management of intergovernmental grants. One role is that of predicting grant outlays and including adequate funding in the government's proposed annual budget; usually, the sectoral ministry and the finance ministry jointly carry out this role. Another role is to ensure that grantees use transfers for their intended purposes and following the grantor's regulations on budgeting, accounting, budgeting, procurement, reporting, and auditing. In LAC, the supreme audit authority of the country typically plays this second role.\textsuperscript{43} However, other agencies play support roles in terms of

\textsuperscript{42} The House and the Senate could not agree on a common formula. Thus, a jurisdiction was permitted to select that formula which gave it a larger share of funds.

\textsuperscript{43} However, the sectoral or finance ministry could play this role with the supreme audit authority simply reviewing the procedures of the ministry to determine their credibility. In the case of grants to municipalities that pass through regional governments, this second role could be delegated to the regional audit authorities, with review of their procedures by the supreme audit authority of the nation.
setting the accounting rules, receiving financial statements and authorizing disbursements, and assessing penalties in the case of non-compliance by the grantee.

12. The grantor typically sets the ground rules on the financial management practices to be followed by subnational governments wishing to accept grants.44 Several issues face the grantor in setting these rules:

(1) The grantee can be required to produce periodic reports or simply maintain records which can be reviewed by the grantor. While regular reporting of financial information is often necessary (e.g., to authorize further disbursements), lengthy operational reports are frequently neither read nor reviewed by the sectoral ministries. In general, reports should be kept simple, but the record-keeping to support them should be detailed.

(2) The supreme audit authority of the grantor can directly audit grantee accounts, contract for independent audits, or do a quality control review of independent audits contracted by the grantee. The first alternative is the general practice in LAC, although regional audit authorities could be strengthened to perform this function, with a quality control review by the supreme audit authority.

(3) The supreme audit authority can emphasize prior review and control of expenditures (to ensure they are legally authorized) or can audit (usually reviewing the integrity of accounting systems and the validity of financial statements and reports) the ex post financial statements and accounts of agencies, which are then responsible for their own internal prior review and control of spending.45 The practice in LAC is the former, which can delay spending and project implementation, but the latter is more consistent with the development of autonomy and responsibility of decentralized agencies.46 In its recent constitutional reform, Colombia changed the function of the supreme audit authority from prior review to ex post audits; Argentina and Bolivia have, with Bank assistance, introduced similar reforms.

44 In some federal countries (e.g., Argentina, Venezuela) the central government cannot impose its financial management rules on the regional authorities, but this typically does not preclude grant conditionality which, for example, says the central government auditors can review the grantee’s financial records related to the grant-funded program and requires the grantee to maintain appropriate records for that purpose.

45 A financial audit reviews financial statements, reviews the accounting system underlying the statements, and does a test check of the documentation underlying the recorded transactions. The audit usually tests vulnerable areas (e.g., travel and public relations spending).

46 Ideally, audits should be carried out annually in order to introduce discipline in the system, but constraints on audit capacity typically require annual audits of large grants and selective audits of smaller grants.
The grantor's internal control system should monitor the grant, disburse the grant, establish the management system (issue rules and receive and monitor/evaluate reports, prescribe the reports to be issued and the accounting principles to be used, and receive and review reports). Frequently, (e.g., Ecuador, Mexico, Peru) the internal control system includes an internal auditor at the agency level.

The grantor can choose to expedite disbursement of grants through a letter of credit system which operates through the banking system. Under the letter of credit, the local government submits paid bills to the Bank to draw down the account. For larger letters of credit, the local office of the sectoral ministry could be authorized to preapprove.

The grantor can require that central government procurement procedures be followed, which may be administratively costly and cause delays, or permit local procedures to be followed.

Operational Control and Review of Programs

When the central government contributes financially to programs operated by subnational governments, it has an important stake in the efficiency and effectiveness with which those programs function. This requires that the grantor monitor program operations, identify problems, provide assistance to remedy those problems, and, when the grantee fails to comply fully with grant conditionality, take corrective steps.

Typically, the grantor develops guidelines or regulations for the operational requirements of grant-funded programs. Since local conditions vary, these guidelines should be flexible, and professional judgement is required to determine if guidelines are being followed adequately by the grantee. The mechanism for monitoring and evaluating program operations can be formal operational audits, process evaluations, or regularly-scheduled supervision visits. Whatever mechanism is used, it is important that problems be identified and a program of corrective action be agreed to, possibly including technical assistance from the sectoral ministry. To make such operational control and review effective, the sectoral ministry must have the authority and capacity to provide sanctions for noncompliance, such as making additional funding contingent on grantee performance in implementing the agreed upon corrective measures.

Grant Evaluation

After the grant program has been designed and implemented, the grantor wants to know how well the grant has attained its objectives; the legislation authorizing the grant may in fact have mandated an evaluation to be carried out by a specified date. While the details of grant

47 Since the central government also has the function of disseminating information on finance and performance, operational review can include an assessment of each grantee's procedures for collecting and reporting such information as well as identification of deficiencies and the technical assistance required to remedy them.
evaluation will be program and sector specific, the evaluation is like to include three areas: (1) the distribution of funds across governments and individuals, according to their income and wealth; (2) the impact of the grant on program outcomes; and (3) the behavioral response of jurisdictions receiving the grants. Such evaluations can be carried out in-house, contracted to expert consultants, or mandated of the grantees; the complexity of the evaluation should determine whether it is done in-house or contracted, while grantee evaluations are of more use as a means of encouraging accountability than providing objective results. As a result of this evaluation, the central government may decide to keep the status quo, drop the grant program altogether, or make marginal changes in the grant design (including conditionality).

16. Legislators are most likely to be interested in the regional distribution of grant funding, in order to have a basis for arguing for a larger distribution to their political constituents. Sectoral analysts of the ministry are more interested in the distribution according to the income and need status of program beneficiaries, in order to determine the accuracy with which the program reaches its target population. These evaluations typically require straightforward statistical analysis of the sort given in Chapter III and can usually be done in the sectoral or finance ministries.

17. In addition to the distribution of resources, the grantor is interested in the impact of the grant financing on program outcomes. The difficulty in carrying out this evaluation depends on the availability of good outcome measures and the knowledge about production processes. Thus, determining the impact of grant financing on the miles of highway constructed may be relatively easy, while the impact on learning of a grant for supplementary textbooks targeted on poor children may be very difficult to analyze. In the latter case, appropriate learning measures are not always available or reliable, and knowledge as to the process by which supplementary texts aid learning is known only crudely. This type of evaluation requires a large data collection effort as well as the kind of analytic expertise only found in research universities. The difficulty in carrying out impact evaluations often results instead in evaluations of the grant on intermediate outputs, e.g., the impact of spending on supplementary texts on the number of textbooks. Whether or not impact evaluations are carried out should depend on an assessment of the likely costs and benefits of doing so.

18. Finally, the grantor is interested in how the grant program has affected the behavior of grantees, especially as regards financing decisions. Grants provide incentives to the jurisdictions receiving them to alter their behavior. Does the grant result in increased or decreased spending by the grantee from its own source revenues? Does the matching or cost-sharing rate result in over-engineered and costly projects, or does it result in decisions to not undertake needed projects? This type of evaluation is feasible to do in most countries and may be based in part on operational review reports.

B. Administrative Functions: Grantee.

19. The government receiving grant funds must comply with grant conditions, including procuring, contracting, and preparing financial reports, and, in the case of competitive grants,
prepare proposals. In addition, once the grantee receives funding, it must manage the implementation of the project or program, either through direct recruitment of personnel and provision of the service or through the contracting to third parties. Table 5.2 summarizes U.S. state and local government grant administration responsibilities.

Table 5.2: U.S. State and Local Grant Administration Responsibilities

<table>
<thead>
<tr>
<th>State Government</th>
<th>Local Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. of Finance</td>
<td>Line Agency</td>
</tr>
<tr>
<td>Allocates transfers to local government.</td>
<td>Implements program in accordance with Federal and State program and general regulations; may be required to monitor program effectiveness.</td>
</tr>
<tr>
<td>State Auditor</td>
<td>Finance Office</td>
</tr>
<tr>
<td>Audits local agencies or ensures quality of external audits. Submits reports to Federal Department giving assurances that fiscal and other requirements have been met.</td>
<td>Maintains valid separate accounts; exercises internal financial and managerial control; contracts for external audit.</td>
</tr>
<tr>
<td>Line Department</td>
<td></td>
</tr>
<tr>
<td>Monitors and evaluates program operation and performance.</td>
<td></td>
</tr>
</tbody>
</table>

Preparing the Proposal

20. Proposals are required for competitive grants and for some entitlement grants, which can be used only if the jurisdiction submits a satisfactory proposal. The grantor’s guidelines for competitive proposals typically require a demonstration of need, a project design, an estimation of costs, capacity to procure equipment and implement the project, an implementation timetable, and ability to comply with grant conditionality, including finance of required cost-sharing and a financial management system which can generate the required reports and which can support a financial audit. If the grantor permits the grantee to include indirect costs in the proposal, the overhead costs of administering the project will also have to be estimated and justified.

21. The detail and complexity of project proposals depends on the size and nature of the project. Small projects (say, under US$25,000) are usually not technically sophisticated and are relatively easy to manage, even if the grantee’s overall administrative capacity is weak. Large projects, on the other hand, may require hiring specialized consultants to design the project, estimate costs, and prepare an implementation timetable.
22. The cost of preparing projects and the lack of in-house expertise are principally of concern to small and poor local jurisdictions. To avoid bias in the distribution of project awards, the grantor could provide direct technical assistance or give cash grants for project preparation to those jurisdictions; alternatively it could allow non-governmental entities to prepare projects on behalf of communities. The Bolivia Emergency Social Fund (ESF) and its successor, the Social Investment Fund (SIF) provide an interesting example of ways to assist poor communities. The ESF operated from 1986-1990 with financial assistance from international donors and relied on proposals from communities and NGOs to rapidly develop a portfolio of projects targeted on the poor. Despite the inclusion of NGOs, experience showed that poor communities were under-represented in this process, because they lacked both the skills to prepare proposals and the presence of NGOs which provide that expertise. To avoid this problem, the SIF was charged with complementing community and NGO requests for projects with an effort by SIF staff to use a poverty targeting methodology to identify needy communities, assess their needs, and identify and support institutions that could serve as requesting agencies for the community.

Financial Management

23. Grantees have the responsibility for budgeting, procurement and contracting, keeping financial and program records, preparing the financial statements and reports required by the grantor, and submitting all related records and receipts for audit. Each of these elements of financial management is critical to ensure financial accountability to the grantor. Each of these elements is seriously deficient in most regional and local governments of the region.

24. Budgeting is the process by which the government’s financial resources are allocated across the functions and programs for which it is responsible. Efficient resource allocation requires full information about resources, needs, and program outcomes and appropriate procedures and trained personnel to analyze this information in developing a budget proposal to be approved by the elected officials of the government. It is important that this process be comprehensive, on the one hand, and program-specific, on the other. When some portion of financial resources are derived from intergovernmental transfers, this requires: (1) budgeting by program as well as object of expenditure and (2) including intergovernmental transfers in the budget. These requirements are not always satisfied. For example, in Colombia one finds municipalities using line-item budgets, with the result that expenditures on programs (primary education, health clinics, etc.) are unknown. And in Brazil some state governments fail to include the federal transfers received by public entities (called foundations) in their budget; consequently, state budget decisions are made not knowing either the size of federal transfers to the public entities or the magnitude of activities financed with those transfers.

25. Once approved, the budget needs to be executed according to the internal control procedures of the government. These procedures should be transparent and ensure fair and efficient procurement of goods and contracting of services. The most common internal control practice in the region is prior review of all contracts by the country’s supreme audit institution; this procedure often results in significant administrative delays. Where state or provincial
governments have fiscal autonomy, this function is performed by state level auditors (e.g., the state Tribunal de Contas in the case of Brazil). In the case of intergovernmental grants (or loans from multilateral agencies) it is not uncommon to require that the recipient of the monies follow the procurement and contracting procedures of the grantor (or lender); this may be costly to the small governments as well as result in delays in project implementation.

26. Once expenditures have been made, grantors need to be able to ensure that grant funds have been used appropriately and that other grant conditions (e.g., maintenance of effort) have been satisfied. This requires the existence of credible financial statements and a system of public accounts that include double-entry bookkeeping and an accounting system to track separately the revenues and expenditures of grant-funded programs. In most of Latin America, these basic requisites of public financial management are often missing, especially among smaller municipal governments.

27. Finally, the enforcement of grant conditionality requires a system of external control or audit of financial statements and the accounts on which they are based. External control could be provided privately, with the regional or local government contracting independent auditors to carry out audits. In Latin America, the shortage of qualified external auditors results in external control by the regional or central government supreme audit institution.

C. Strengthening Grant Administration.

Improving Grantor Administrative Capacity

28. The capacity to administer grants is weak at all levels of government in Latin America. Even where this capacity is relatively well-developed (e.g., Chile), serious deficiencies remain. At the level of the grantor, usually the central or federal government, sectoral ministries often lack the capacity to carry out analyses of alternative grant designs, to prepare user-friendly grant rules and regulations, and to evaluate the effects of grants and the performance of grant-funded programs. However, the professional skills to carry out these activities exist in academic institutions and consulting firms in most countries, permitting ministries to contract for the skills required to complement in-house capacities.

29. Weaknesses in the financial management of intergovernmental transfers and operational review of grant-funded programs are more difficult to address. Neither financial management nor operational review are typically well suited to ensuring compliance with grant conditionality. To ensure compliance requires that the sectoral ministry have accurate, recent, and relevant

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48 One possible solution is to use fund accounting to separate out the financial activities of the grant-financed activity. This is seldom used in Latin America. A more common solution is to set up a legally separate entity to carry out the relevant activity.

49 Wesbery (1990) argues that both public and private sector accounting systems are generally weak in Latin America.
information on the grant-related activities and expenditures of grantees and on the operational performance of grant-funded programs. As discussed above, this requires modern systems of accounting, financial reporting, and auditing, on the one hand, and a system of supervision which identifies program deficiencies and provides assistance to grantees in designing corrective action, on the other. To a large extent, the former lies outside the control of the sectoral ministry, while the latter require additional resources and changes in behavior (from an emphasis on enforcement to one of assistance) on the part of the ministry supervisors. Thus, there is a strong argument for significant efforts to reform and strengthen public financial management generally and the technical support capacities of sectoral ministries more specifically as part of any decentralization effort. Table 5.3 summarizes the functions and skill requirements for each of the grantor's institutions responsible for grant administration.

Table 5.3: Grant Administration Requirements: The Grantor

<table>
<thead>
<tr>
<th>Institution/Office</th>
<th>Functions and Responsibilities</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislature</td>
<td>Prepares and approves legislation which specifies: (a) program objectives, (b) general compliance requirements, and (c) project-specific compliance requirements. Legislation may also specify process for issuing and reviewing regulations.</td>
<td>Staff capacity to analyze policies and to clearly specify objectives and requirements.</td>
</tr>
<tr>
<td>Finance Ministry/Budget Office</td>
<td>Issues directives on general compliance requirements. Disburses funds in accordance with formula or following request by line ministry.</td>
<td>Capacity to write easily understood regulations.</td>
</tr>
<tr>
<td>Supreme Audit Institution</td>
<td>Audits line Ministries, evaluates the quality of audits submitted by grant recipients, and may audit grant recipients.</td>
<td>Expertise in auditing financial statements and legal requirements.</td>
</tr>
<tr>
<td>Line Ministry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Office</td>
<td>Prepares regulations and reporting requirements consistent with legislative intent.</td>
<td>Legal expertise to interpret legislation and capacity to write clear and enforceable regulations.</td>
</tr>
<tr>
<td>Program Office</td>
<td>Monitors and evaluates program operation and performance.</td>
<td>Expertise in designing and carrying out program evaluation.</td>
</tr>
<tr>
<td>Finance Office</td>
<td>Authorizes disbursements.</td>
<td>Capacity to design and deliver training in accounting and performance measurement.</td>
</tr>
<tr>
<td></td>
<td>Provide technical assistance to grant recipient to ensure reliable financial audit and performance evaluation.</td>
<td></td>
</tr>
</tbody>
</table>
Strengthening Grantee Administrative Capacity

30. The limited administrative capacity of most subnational governments in Latin America seriously constrains the use of intergovernmental grants; Table 5.4 summarizes the required capacity. The lack of capacity to prepare projects can lead to poor project selection and work to the disadvantage of smaller jurisdictions. This can be offset by providing direct technical assistance (in-kind or cash grants) to needy jurisdictions and training local managers to contract privately for specialized technical assistance in proposal preparation. In addition, recent experience with including beneficiaries and citizen groups in proposal preparation has been salutary in reducing the risk of poor project selection.

31. As with the grantor, the administrative area which is most difficult to strengthen is financial management. Budgeting policies are relatively easy to change to include program budgets and integrating intergovernmental grants in budgetary decision-making. However, budget practices are not so easily changed, and high inflation can render budgeting a moot exercise. It is more difficult to change accounting and financial reporting practices, which are often set in national law. One solution is to change the law for regional and local government administration, and another is to create separate legal entities to provide the grant-funded service. In either case, technical assistance is required to strengthen financial management. One option is to earmark a specified percentage of the grant to cover the administrative costs to the grantee, including improved financial management, systems to track program or project activity and performance, and other overhead costs. A second option is to provide a grantor-financed and operated financial administration center to maintain records and assemble information required for grant disbursement on behalf of several grantees. A third option is to provide direct technical assistance to grantees to help strengthen their financial management as related to the grant-funded program. A fourth option is to provide positive or negative incentives for the provision of required information; for example, the grant could include a rule which specifies that failure to provide a report containing the required information within fifteen days of the designated date would result in a ten percent reduction in the next tranche. Which option is preferable depends in part on the types of conditions attached to the grant and, thus, the kinds of information that must be maintained and reported.

50 As demonstrated by the case of Brazil, budgets which fail to accurately estimate the next year’s inflation lead to supplemental budgets which create uncertainty for the implementing agencies and often have little to do with the original budget allocation.
### Table 5.4: Grant Administration Requirements: The Grantee

<table>
<thead>
<tr>
<th>Institution/Office</th>
<th>Functions and Responsibilities</th>
<th>Required Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Government</td>
<td>Transfers money to local government.</td>
<td>Capacity to evaluate and provide technical assistance in government accounting.</td>
</tr>
<tr>
<td></td>
<td>Directly audits or ensures quality of local government audits.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specifies local government accounting and reporting requirements.</td>
<td>Expertise in local government financial management and central government requirements.</td>
</tr>
<tr>
<td></td>
<td>Monitors and evaluates program operation and performance.</td>
<td>Expertise in program evaluation.</td>
</tr>
<tr>
<td>Local Government</td>
<td>Implements program in accordance with central and regional government regulations.</td>
<td>Administrative capacity specific to program area.</td>
</tr>
<tr>
<td></td>
<td>Maintains valid separate accounts.</td>
<td>Accounting systems and financial management capacity.</td>
</tr>
<tr>
<td></td>
<td>Internal financial control and audit.</td>
<td>Financial management and internal audit capacity.</td>
</tr>
<tr>
<td></td>
<td>Contracts for external audit and service delivery.</td>
<td>Contract administration.</td>
</tr>
</tbody>
</table>

### D. Assessing Administrative Capacity.

32. The capacity of governments to administer intergovernmental categorical grants is critical to the success of decentralization efforts. In their decentralization policies, countries may, of course, decide to simply transfer non-categorical revenue sources (taxes, shared revenues, or block grants) to lower levels of government along with commensurate responsibilities, thereby avoiding the whole issue of capacity to administer categorical grants. But this approach also eliminates any important role for the central (or regional) government in ensuring minimum spending or equality in spending across lower level jurisdictions for government services which
play an important role in determining income distribution and social mobility as well as the human capital of the nation. Of course, a country can attempt to mandate equity and minimum spending on the part of lower level governments for critical services, but the enforcement of mandates presents many of the same administrative challenges as does the administration of categorical grants.

33. Since categorical grants typically accompany decentralization, it is important to assess the capacity of the different levels of government in grant administration. Table 5.5 presents a list of the questions one should have answers to in order to make an informed assessment of that administrative capacity.

Table 5.5: Checklist to Assess Grant Administration Capacity

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>QUESTIONS TO BE ANSWERED</th>
</tr>
</thead>
</table>
| Legislation | Does the decentralization law, constitution, etc., clearly assign finance and expenditure responsibility by level of government?  
Does the public administration law, municipal code, etc., permit the central government to require information on grant-financed programs in a form that permits financial and performance audit?  
Does the law permit subnational governments and decentralized entities to independently contract for external audit?  
Does the grant law clearly communicate compliance requirements and reporting requirements and establish credible sanctions for noncompliance?  
Does the grant law clearly establish the authority and responsibilities of the sectoral ministry in reviewing grant-funded programs? |
| Regulation | Does the sectoral ministry have the capacity to prepare realistic regulations to operationalize the grant legislation?  
Is there an administrative manual for each grant program? Do the grantees have a copy of the manual?  
Which are the most important general regulations which affect the specific grant program?  
Does the grantee sign a contract with the grantor specifying all compliance requirements, stating how to determine costs, frequency and nature of financial reporting, etc.? |
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>QUESTIONS TO BE ANSWERED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Reporting</strong></td>
<td>Which agency prepares an annual report on the financial performance of the grant program? How are such reports reviewed and audited?</td>
</tr>
<tr>
<td></td>
<td>Does some government agency or independent entity provide evaluative ratings of local government financial statements?</td>
</tr>
<tr>
<td><strong>Budgeting &amp; Spending</strong></td>
<td>Do the grantor and the grantee have identical fiscal years?</td>
</tr>
<tr>
<td></td>
<td>Is grant funding included in the grantee's budget? How are grant funds budgeted and reported in the case of decentralized entities of the grantee?</td>
</tr>
<tr>
<td></td>
<td>How long does the grantee have to obligate funds? What evidence (purchase order, contract, etc.) is required to demonstrate obligation?</td>
</tr>
<tr>
<td></td>
<td>Are grantee expenditures subject to pre-audit review? If so, who carries out the review? How long does the review typically take?</td>
</tr>
<tr>
<td></td>
<td>Do local governments directly manage grant funds, or are there financial management centers which manage funds for the local governments?</td>
</tr>
<tr>
<td></td>
<td>In the case of cost-reimbursement or matching grants where evidence of expenditures must be provided, are letters of credit used to permit commercial banks to more quickly transfer funds to grantees? If so, at what transaction value is preapproval required from the grantor?</td>
</tr>
<tr>
<td><strong>Accounting</strong></td>
<td>Which agency determines the validity of the accounting system to ensure the grantee keeps accounts in compliance with central government requirements? What remedial action is taken for noncompliance?</td>
</tr>
<tr>
<td></td>
<td>Does the grantor mandate a particular accounting system, or does it mandate that any accounting system provide the information to assess compliance with grantor requirements? When the regional government acts as a pass-through agency, does it prescribe local government accounting?</td>
</tr>
<tr>
<td></td>
<td>Does the grantee's structure of accounts permit tracking of the grantor financing? Do grant funds enter the grantee's general fund, or are special revenue funds used?</td>
</tr>
<tr>
<td></td>
<td>What are the grantor's rules regarding accounting for indirect costs? What is grantee practice?</td>
</tr>
<tr>
<td></td>
<td>What is the accounting basis (accrual, modified accrual, cash)?</td>
</tr>
<tr>
<td></td>
<td>What technical assistance does the grantor provide the grantee to facilitate compliance with accounting requirements? Which agency provides the technical assistance, and what form does this assistance take?</td>
</tr>
<tr>
<td>FUNCTION</td>
<td>QUESTIONS TO BE ANSWERED</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Auditing</td>
<td>In the case of states acting as pass-through agencies, does the central government audit the state or the ultimate grantee? Does the state have the capacity to audit or review audits of the local governments?</td>
</tr>
<tr>
<td></td>
<td>Which agency carries out the audit of the grantee’s accounts? How frequently are audits carried out? How frequently are the audits reviewed by the sectoral ministry or the comptroller general?</td>
</tr>
<tr>
<td></td>
<td>Are grant audits included in regular entity-wide audits or are they specially performed for each grant?</td>
</tr>
<tr>
<td></td>
<td>Which are the most commonly reported adverse findings? Do the auditors of grant-financed programs frequently disallow expenditures? If so, what is the consequence?</td>
</tr>
<tr>
<td></td>
<td>What types of sanctions (criminal liability, reduce subsequent year’s grant, etc.) are most commonly imposed for non-compliance?</td>
</tr>
<tr>
<td></td>
<td>Does the audit include output reporting as well as financial reporting?</td>
</tr>
<tr>
<td></td>
<td>Does the sectoral ministry receive and review audits? Which other agencies receive copies of the audit? Are audits of local government agencies made easily available to local citizens?</td>
</tr>
<tr>
<td>Performance</td>
<td>ikersprepare annual reports on the operational performance of the grant program? If so, is a standardized mechanism or format required?</td>
</tr>
<tr>
<td>Reporting</td>
<td>Are results produced in quantified, measurable terms? Are results only narrative in form?</td>
</tr>
<tr>
<td></td>
<td>Is the provision of reports enforced? Who receives the reports?</td>
</tr>
<tr>
<td></td>
<td>Is the validity of such reports subject to review by the sectoral ministry? If so, does the ministry have the capacity to carry out such review?</td>
</tr>
<tr>
<td></td>
<td>Does the sectoral ministry establish adequate procedures to determine if the program is effective and efficient? Which agency evaluates these procedures and assesses the capacity of the sectoral ministry to determine the validity of operational reports?</td>
</tr>
<tr>
<td>FUNCTION</td>
<td>QUESTIONS TO BE ANSWERED</td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Compliance with</td>
<td>Which agency is responsible for reviewing and enforcing grant conditionality? Do program auditors, conducted by independent auditors or by the Comptroller</td>
</tr>
<tr>
<td>Conditionality</td>
<td>General, cover compliance with grant conditionality and report lack of compliance? In the case of non-compliance, what corrective actions or penalties are applied? Are grants withheld for compliance failure?</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Does the grant require performance evaluations of the program being financed? If so, which level of government arranges for and provides the evaluation?</td>
</tr>
<tr>
<td></td>
<td>Are the criteria and methodology for evaluation specified in the administrative manual for the grant?</td>
</tr>
<tr>
<td>Citizen Review</td>
<td>Do citizen groups have a formal advisory and review function for the grant-financed program? If so, how is the citizen group selected to ensure impartial review?</td>
</tr>
<tr>
<td></td>
<td>What is the authority of the citizen review board to bring about programmatic changes?</td>
</tr>
<tr>
<td></td>
<td>Are the views of the citizen review board reflected in the grantee’s annual program report or in the program audit? How does the sectoral ministry become informed of the board’s views?</td>
</tr>
</tbody>
</table>
Accountability in Fiscally Decentralized Systems

A. Introduction.

1. The accountability problems associated with intergovernmental transfers are complex, and proposals for policies and institutions to ensure accountability depend on the answers to several important questions. Should local governments be held accountable to the central government or to local citizens for their use of intergovernmental transfers? For what should local governments be held accountable? What mechanisms exist to hold local officials accountable? What conditions facilitate accountability, and which hinder it? There is very little empirical research literature that directly addresses these questions, but working hypotheses can be derived from country experience and qualitative evaluations.

B. Accountability to Whom?

2. In the decentralized systems of Latin America, central governments transfer funds to local governments, in part, to carry out central government objectives and, in part, to provide a source of local government general revenues. These dual objectives lead to the question, to whom should the local government be held accountable, the central government or the local electorate? Of course, the answer to this question is "to both" but for somewhat different outcomes.

3. Central Government. Aside from pure revenue sharing, the central government makes intergovernmental transfers to encourage grant recipients to allocate resources consistent with central government objectives.\(^5\) In addition to the kinds of sector-specific objectives noted earlier, the central government may impose a variety of general regulations on the grant recipients. These may concern the recipients' practices in financial management, procurement, employment, etc. The central government wishes to hold grant recipients accountable in the sense of using their grants for intended purposes and complying with all regulations and grant conditionality.

\(^5\) The central government can also use mandates with revenue sharing to attain its objectives, as demonstrated in the case of Brazil's mandate that subnational governments allocate 25 percent of their revenues for education.
4. **The Electorate.** The recipient’s citizenry of taxpayers and consumers of local government services have some divergent and common objectives. The taxpayers’ objective is to reduce their local tax burden (be it in the form of local taxes or user fees). They have an interest in using grant revenues to reduce tax burdens and in ensuring that revenues from whatever source are used efficiently. Consumers of local government services in general also wish to see efficient use of resources, in order to maximize service output. In addition, consumers of the service receiving the grant have an interest parallel to that of the central government in ensuring that grant monies are used for their intended purpose, again to maximize service output. Finally, members of interest groups (consumers or producers) benefiting from grant regulations have an interest in the recipient’s compliance with those regulations.

C. **Accountability for What?**

5. The central government and the electorate differ in terms of the decisions and actions for which they wish to hold local officials accountable. The central government has a primary interest in grant recipients (1) using funds in accordance with legislative intent and ministerial regulations and (2) complying with the various conditions and regulations which apply to the grant. The electorate, on the other hand, is likely to be more concerned with program performance and efficiency than with technical compliance issues.

6. **Use of Funds.** Sectoral grants are legislated by central governments in order to attain particular program objectives. The legislation is typically precise in stating the purposes for which grant monies can be used. The legislation and/or its implementing regulations usually carry this further by specifying specific items which may be purchased with the grant. The appropriate use of funds is typically given the highest priority by central government and independent auditors who review local government financial accounts.

7. **Compliance with Conditions and Regulations.** In order to further ensure success in attaining central government program objectives, grant legislation typically includes conditions, which the appropriate ministry operationalizes in terms of written regulations. These conditions and regulations include those specific to a particular grant and those applicable to all grants.

8. **Program Performance.** Aside from the appropriate technical use of funds and compliance with conditionality, the central government wishes to also hold local officials accountable for the efficient use of grant monies in the attainment of its program objectives. As argued above, the local government electorate is likely to share this interest in effective and efficient service delivery. Aside from grant regulations aimed at ensuring efficiency, most central governments are constrained in this pursuit by limited capacity to monitor and evaluate local government operations and by constitutional guarantees of the autonomy and decision-making independence of local governments. Indeed, the lack of central government capacity to monitor and supervise the provision of local services is one of the major arguments for decentralization in the first place.
D. What Mechanisms?

9. **Audit and Operational Review.** The central government has two principal tools for holding grant recipients accountable: (1) financial audit of the grant program and (2) operational review of grant-financed programs. As discussed in Chapter V, lack of central government capacity often means these tools have limited effectiveness in many LAC countries. In such cases, the role of the electorate in accountability is especially important.

10. **Role of Citizens.** The formal role of the citizen is on a continuum that includes voting for local general government officials to commenting at public forums. In some cases, especially in agricultural water supply, citizens who are the beneficiaries of services elect leaders of local organizations that finance and manage specific public services. In other cases, citizens (usually program beneficiaries) participate in service-specific organizations, like a parent-teacher organization, which complement general government by helping finance services and by monitoring service delivery. Citizen organizations which are service-specific are not necessarily more effective than those that oversee multiple purposes.

11. Many virtues are often claimed for citizen participation, including (1) a better match of services to recipient demand, resulting from adaptation of standardized central government programs to local conditions and reduced cost of communicating with service recipients, especially in rural areas; (2) increased revenues through local resource mobilization (both cash and in-kind); and (3) increased efficiency in service delivery, due to better-informed service recipients, improved community cooperation, and a stronger sense of responsibility on the part of beneficiaries. Unfortunately, there are very few empirical studies which rigorously measure such benefits; most quantitative evidence comes from case studies of irrigation and water supply managed by local communities. In an example from education, El Salvador and Mexico used two very different models of citizen participation to reduce teacher absenteeism in rural schools (Box 6.1).

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52 The richest experience with citizen self-finance and self-management of collective services is in water supply and irrigation; for example, see Tang (1992).

53 Uphoff (1992) concludes that in rural communities multi-purpose boards may be more effective than single-purpose ones.
Box 6.1: School Advisory Boards in Mexico and El Salvador

El Salvador and Mexico represent two alternative models of community participation in primary education. In Mexico, the state governments are responsible for both the finance and delivery of primary education. Public school teachers are employees of the state, and their recruitment and pay are determined by the state. In 1989, in response to difficulties in recruiting and retaining teachers for rural schools, a pilot program was initiated in 1,000 schools for the purpose of paying rural teachers a salary supplement equal to 80 percent of their normal salary. This policy was meant to aid recruitment and addressed the equally serious problem of teacher absenteeism from the classroom. Special community-level school committees comprised of parents, school administrators, and local authorities were established to monitor teacher attendance and to send quarterly attendance reports to the state education secretariat. Satisfactory teacher attendance results in the state authorizing payment of the supplemental salary. The success of this pilot has resulted in its expansion to 5,400 schools in four disadvantaged states, partly financed by a World Bank loan. Preliminary data show a significant reduction in teacher absenteeism.

With the objective of expanding coverage of preschool and primary education, the Government of El Salvador in 1991 established a program called Educación con Participación de la Comunidad (EDUCO). This program gives community groups in rural areas where there is insufficient school coverage the legal authority to manage public schools. A general parent’s assembly elects for a three-year term a school board which is authorized to receive and allocate funds. The Education Ministry signs an agreement with each school board specifying the pay level of teachers and other expenses and specifying a school year of at least 160 days, which is significantly longer than that of regular public schools. The board is responsible for providing the school buildings. The Ministry transfers monies adequate to cover teacher pay and teaching materials to the board’s private bank account. The board recruits, contracts (for one year renewable), and pays the teacher. The allocation of monies for teaching materials are decided jointly between the board and the teacher. The board can release the teacher in case of inadequate performance. The Ministry has been sufficiently satisfied with the results of EDUCO, that about 25 percent of all schools in El Salvador now have such community groups. So far only about two percent of teachers in EDUCO schools have been fired as a result of bad performance or absenteeism.

12. Participation as Grant Conditionality. Grants-in-aid may impose citizen participation as a condition of a local government (or NGO) for accepting a grant. The rationale for such conditionality includes: (1) preventing local elites from making resource allocation decisions and ensuring that consumers and beneficiaries, especially those who are poor, have a say in project design; and (2) increasing the degree of accountability to the electorate, especially if local governance structures appear not to be representative.
13. The type of citizen participation required varies from simply public disclosure of information to the creation of citizen boards with decision-making authority. A study of U.S. federal government grant-financed programs requiring participation found that 35 percent required public hearings, 57 percent required citizen boards, and 74 percent required public meetings, workshops and review and consultation processes; many grants require multiple modes of citizen participation. The same study found the nature of participation to vary by sector. Education, health and human service programs typically require participation in the form of citizen representation on boards, most often functioning in an advisory role. In the case of education grants, emphasis is on parental involvement, while in health and human service grants various interest groups are represented, including program beneficiaries. In contrast, transportation grants usually require citizen involvement via public hearings. Finally, citizen participation is usually required at the planning and design stages of service delivery, rather than in the implementation and evaluation stages.

14. Latin American experience with grant conditionality is relatively recent, still not common, and primarily found in grants for rural development projects. Box 6.2 provides examples of such conditionality in two programs in Mexico and Bolivia; in the two programs reviewed, conditionality on citizen participation represents the result of earlier experience with citizen participation in similar programs.

E. Facilitating Conditions.

15. Evidence on the determinants and benefits of effective citizen participation is mainly derived from the large number of developing and developed country experiences with it. Qualitative analysis of case studies in citizen participation provide several lessons of experience. One example is Panama’s experience with citizen advisory boards for primary health clinics, which is reviewed in Box 6.3.

16. Assessment of the effectiveness of citizen participation in U.S. intergovernment grant programs have been elusive, if for no other reason than the lack of a systematic monitoring system. In general, grantees have complied with participation requirements, but there is little evidence that participation has a noticeable impact on the effectiveness of service delivery. The demonstrated impact is in the planning stages where participation appears to encourage rather than deter local governments from seeking grants. To the extent it has an impact, participation seems to have been more effective early in the planning of projects, rather than in the service provision.

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54 Advisory Commission on Intergovernmental Relations (1980).

55 Advisory Commission on Intergovernmental Relations (1980).
Box 6.2: Participation as Grant Conditionality in Social Funds

Mexico and Bolivia provide examples of different approaches to requiring citizen participation in local development projects financed by the central government. Mexico has a long history of central government negotiated grants to states and municipalities for rural development projects. These projects are included in the annual development agreement (CUD) for each state. While the process leading to the CUD is highly participatory, it is also bureaucratic. In order to expedite the approval process for small projects, stimulate citizen participation, and target investments to the poorest municipalities, Municipal Solidarity Funds (FMS) were created. Within an overall FMS grant, municipalities have the authority to select the projects to be financed, so long as individual projects cost US$33,000 or less. After selection, the project proposals are sent to the state planning agency (COPLADES) for expeditious review. The FMS in the four poorest states are partly financed by the World Bank through the Decentralization and Regional Development Project.

The Operational Manual for the FMS sets forth the citizen participation conditionality for the projects. Each municipality is required to have a Municipal Solidarity Council that includes the mayor, a representative from state government, the municipal treasurer, and elected community representatives. The Council decides which projects should be financed and ensures each project has a Solidarity Committee, elected in general assembly by community members affected by the project. The Committee is responsible for the implementation, operation, and maintenance of the project and ensures the community fulfills its cost-sharing obligations (which can be in-kind and must represent at least 20 percent of total project cost). All Committee decisions must be ratified by a majority vote of the general assembly. The Committee is directly responsible for project administration and must submit monthly reports to the Council.

Bolivia's citizen participation conditionality for its Social Investment Fund (SIF), which mainly finances projects in health, education, and basic infrastructure, differs significantly from that of Mexico's FMS. SIF projects, which average US$70,000 in size and are targeted to the poor, are primarily proposed and administered by NGOs. Grant conditionality include: (1) the existence of a community or neighborhood organization, which can interact with the NGO; (2) the community must be aware of the proposed project's goals and be committed to participate in its implementation; (3) the community must make contributions (usually in-kind) to the project's financing; (4) the local authority must allocate land and/or grant building permits when required by the project; and (5) the NGO must have an established relationship with the beneficiary community, or have a track record of successful citizen participation in other communities. The SIF staff interview community members and NGO representatives to ensure these conditions are satisfied.
Box 6.3: Community Participation in Panama Health Clinics

In the 1970s, Panama's Ministry of Health (MOH) established community level health committees with five functions: 1) integrating the community into various health program components (i.e., pediatric care, sanitation, etc); 2) mobilizing the community vis-a-vis health issues; 3) providing information and data on community health conditions to regional health centers; 4) determining community health needs and concerns; and 5) making local and regional health administrators and officials publicly accountable to the community.

The MOH established legal guidelines for the committees, including election procedures and terms of reference. A general community assembly annually elects committee members, who can be re-elected once. The committee selects a Board of Directors and defines its responsibilities; approves work plans (which include community inputs of both labor and resources); sets fees for certain services; and defines sanctions. The committees also named informal Work Commissions to carry out specific tasks, such as help health officials conduct a survey, participate in a collective farm or small animal project, coordinate cadres of workers for the construction of a water aqueduct or latrines, conduct a garbage collection campaign, or organize a fund-raising event.

Committee effectiveness seems to vary more by region than by community. Committees often undertook highly visible and achievable tasks—such as construction projects—early on in order to highlight their potential. They were most successful in construction of rural health infrastructure, but they also established preventive health services (community health education seminars, immunization campaigns, regularly scheduled medical visits to isolated rural villages), and initiated community-level health surveys.

The major factors associated with successful committees were: 1) a constructive relationship with district and regional medical directors; 2) a competent and active health team with at least a doctor, nurse, sanitary inspector, and health educator; 3) an active district or regional-level federation of health committees that both connects the community to the health system and helps individual committees lobby for their needs—in addition to "lending money to health committees to finance activities and repair facilities, accompanying health committee officers to the central ministry to request special services, linking experienced health committees with recently organized committees in order to lend technical assistance, financing transportation costs so that health officials can regularly visit distant communities, and training health committee officials in organizational, parliamentary, and interpersonal skills"; 4) cooperation from local political leaders and elites; 5) strong community leadership, partly a result of training received from the government; and 6) relative homogeneity in income and other socio-economic indicators within the community.

Sources: La Forgia (1985a,b)

17. A review of the literature on citizen participation in developing countries indicates the effectiveness of citizen boards depends in part on exogenous factors such as the type of service or product being produced and the environment (socioeconomic characteristics of the community, physical characteristics of the service area). But effectiveness also depends on variables which are subject to government policy. A number of these variables are listed below, based on a
review of a number of qualitative analyses of citizen participation in both developing and developed countries.

18. **Getting the Rules Right.** Effective citizen boards require as a necessary condition a clear legal framework which sets out the rules to be followed in selecting the boards and clearly establishes the authority and functions of the boards, including reporting requirements. Furthermore, communities and their boards inexperienced in governance require education as to their roles and responsibilities. In general, citizen boards without decision-making power are ineffective, but boards with only advisory powers can be effective if they have strong political support. Box 6.4 gives an example of a school council with broad powers.

19. **Selecting the Board.** The composition of citizen boards plays an important role in their effectiveness as monitoring agents. The empirical literature on regulatory boards in general argues against allowing a majority representation on the part of the parties being monitored. By implication, teachers and principals should not dominate school-based committees set up for monitoring purposes. On the other hand, other evidence suggests both consumers and producers should be represented on boards.

20. **Management Organization.** As with any organization, the ability of a citizen board to manage itself is critical to its effectiveness. An organization which diversifies management responsibilities among board members and rotates leadership among board members deters corruption. If a citizen board is directly responsible for the provision of some service, studies of water supply associations and of school boards suggest that the boards should contract professional managers and limit board activity to setting policy guidelines and hiring and firing the managers.

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56 For example, see Esman and Uphoff (1984), Finsterbusch and Van Wicklin (1987, 1989), Tang (1992), and Uphoff, et.al.(1990). Most of this literature studies citizen participation in development projects and in NGOs. We make the assumption that the findings of this research apply equally well to ongoing government programs and to programs administered by local governments.

57 This recommendation is not unique to developing countries. In the Chicago, Illinois, school decentralization citizen participation was ineffective and relations between administrators and presidents of school-level councils were hostile until the latter were required to participate in joint training activities.

58 For example, the State of Illinois established Citizen Advisory Committees to the schools in the 1960s. While the CACs were strictly advisory; their power stemmed from the political support they enjoyed at the state level. The CACs were generally successful, both in eliciting community participation and in influencing school policy. The reasons for success are: (1) there were clear rules for the formation and operation of CACs; (2) there was a high degree of active community participation; (3) relations between the CACs and school officials were generally very cooperative; and (4) citizens were kept well-informed (Phipps and Knell, 1985).

59 For example, Graddy and Nichol (1989) concluded that including citizen participation on occupational regulatory boards for health professionals deters their capture by the regulatory professions.
Box 6.4: Local School Councils with Broad Powers

Widespread, grass roots citizen dissatisfaction with the performance of the Chicago, Illinois school system led in 1989 to a fundamental restructuring of school governance. Each school is required to have a Local School Council (LSC) consisting of six parents elected by parents, two community residents elected by community residents, two teachers elected by the school's staff, and the school principal. Parents and community residents on the Councils may not be school district employees. Elections are for two-year terms.

The LSC has broad powers. One key power of the LSC is to directly appoint the school's principal to a four-year performance contract, if seven of the ten elected members can agree on one candidate. Principal tenure is abolished, and the school system may not establish additional requirements for principal eligibility beyond state certification. This stipulation dramatically expands the number of individuals eligible for Chicago principalships, ending an examination process through which the school system has historically certified a relatively small number of principals every three or four years. The LSC negotiates a performance contract with the principal. At the end of four years, the LSC can decide whether to reappoint the school's principal or select a new one.

The LSC has two other key decision making powers. First the LSC helps develop and approves a school improvement plan, which must spell out how the school will boost student achievement, cut truancy and dropout rates, and prepare students for employment and further education. Second, LSCs have the power to help develop and approve their school's budget. LSCs must receive thirty hours of training annually in school budgeting, educational theory, personnel selection, and other areas, either from the central administration or from an independent organization of the LSC's choosing.

Source: Moore (1990)

21. Management organization also affects the costs to citizens of participating in boards and, thus, affects board composition. To some extent, board members self-select on the basis of willingness to incur the costs of participation. For example, citizens who highly value their time may be less willing to serve on boards with time-intensive participation procedures. As a result, boards may not necessarily be representative of the community, and resource allocation decisions may be distorted.

22. Size. As a general rule, the smaller the size of a collective organization, the easier it is to discourage free ridership and encourage a sense of responsibility among its members. On the other hand, organizations which are too small cannot realize economies of scale in management. Thus, there is a tradeoff between accountability and organizational performance, which can sometimes be resolved through creative contracting with higher levels of government

---

60 See Olson (1965) for elaboration on this point.
to provide specialized services which have large scale economies. Decentralized systems of
government may still have excessively large local governments from the perspective of
accountability.  

23. **Management Capacity.** Management capacity is critical in three respects. First, the
community members responsible for electing the board should have some minimum
understanding of revenues, budgets, and their relationship to services. Second, the citizen board
responsible for overseeing that organization must itself have a basic understanding of
management, including ability to read budgets and financial statements; it must also have the
capacity to manage conflict and reach consensus. Third, the local organization directly
responsible for providing services and collecting revenues must itself have some minimum
capacity to plan, budget, maintain financial accounts, provide financial and operational reports,
manage and maintain assets, and recruit and manage personnel. One of the very few empirical
studies of local organization effectiveness concluded that the single most important factor in
determining overall effectiveness is the capacity of the local organization to manage its financial
resources (see Box 6.5).

24. **Cost Sharing.** The second most important factor in determining local organization
effectiveness, according to the study reported in Box 6.5, is the performance of the local
organization in mobilizing resources. This finding is consistent with other, qualitative studies
showing that cost-sharing and local contributions affect importantly both the degree of active
participation of community members and accountability; cost-sharing in project funding also has
the advantage of ensuring some minimum degree of community commitment to the project.

25. **Information.** Related to management capacity is the information available to citizens and
citizen boards concerning the cost and performance of their services compared to those produced
elsewhere. The central government role in ensuring the availability and validity of such
information is especially important when beneficiaries cannot directly assess service
performance. For example, the performance of schools is difficult to determine in the absence
of standardized test scores, which permit comparisons with other schools having children with
similar characteristics. On the other hand, farmers are quite capable of directly determining the
performance of irrigation systems in delivering water.

---

61 The U.S. experience with school boards is relevant. During the 1950s, many rural school districts were
consolidated in order to realized scale economies; in the 1990s, there is movement in the opposite direction,
towards individual school boards, in the name of community responsibility and accountability.

62 For example, many large city school districts in the U.S. have as many students and teachers as some
countries. The City of Chicago, which has 430 thousand students and over 25 thousand teachers recently
decentralized powers within its school district by creating school-level councils (comprised of parents, citizens,
teachers, and the school principal) with the power to appoint the principal and negotiate a four year performance
contract. In addition, the decentralization law mandated annual school site budget hearings in which citizens,
parents, and teachers vote on the proposed school budget.
Box 6.5: Effectiveness of Local Organizations

One of the very few empirical studies of local citizen organizations (LOs) analyzed the performance of 127 different LOs around the world. Each organization was rated with respect to its overall output performance and with respect to eight different tasks or functions: (1) planning and goal setting, (2) conflict management, (3) resource mobilization, (4) resource management, (5) provision of services, (6) integration of services, (7) control of bureaucracy (controlling corruption and improving work effort), and (8) claim-making (lobbying and influencing government decision-making). Simple correlational analysis demonstrates that an organization's performance in the first four functions is more strongly related to overall effectiveness than is its performance in the last four functions.

<table>
<thead>
<tr>
<th>Function</th>
<th>Overall Performance</th>
<th>Planning &amp; Goal Setting</th>
<th>Conflict Management</th>
<th>Resource Mobilization</th>
<th>Resource Management</th>
<th>Service Provision</th>
<th>Service Integration</th>
<th>Control of Bureaucracy</th>
<th>Claim-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning &amp; Goal Setting</td>
<td>.71</td>
<td></td>
<td>.75</td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
<td>.65</td>
<td>.68</td>
<td>.58</td>
</tr>
<tr>
<td>Conflict Management</td>
<td></td>
<td>.71</td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
<td>.65</td>
<td>.68</td>
<td>.58</td>
<td>.68</td>
</tr>
<tr>
<td>Resource Mobilization</td>
<td></td>
<td></td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
<td>.65</td>
<td>.68</td>
<td>.58</td>
<td>.68</td>
</tr>
<tr>
<td>Resource Management</td>
<td></td>
<td></td>
<td></td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
<td>.65</td>
<td>.68</td>
<td>.58</td>
</tr>
<tr>
<td>Service Provision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.71</td>
<td>.80</td>
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<tr>
<td>Service Integration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
<td>.58</td>
</tr>
<tr>
<td>Control of Bureaucracy</td>
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<td></td>
<td></td>
<td>.71</td>
<td>.80</td>
<td>.69</td>
</tr>
<tr>
<td>Claim-making</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>.69</td>
<td>.58</td>
</tr>
</tbody>
</table>

Stepwise regression analysis of overall effectiveness resulted in estimated beta weights, which shows the relative importance of each independent variable. Table 2 reports the beta weights for those four functions found to be most important. Resource management, the most important function, includes basic accounting of financial flows, maintaining buildings and equipment, collection of loans, etc. Resource mobilization, the second most important, refers to raising cash and in-kind revenues from both local and outside sources. Planning and goal-setting is the assessment of community needs, identification of problems, and development of problem-solving strategies. Control of bureaucracy refers to efforts to make government staff work harder and more cooperatively with LO members.

<table>
<thead>
<tr>
<th>Function</th>
<th>Beta Weight</th>
</tr>
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<tbody>
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<td>Resource Management</td>
<td>.41</td>
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<tr>
<td>Resource Mobilization</td>
<td>.28</td>
</tr>
<tr>
<td>Planning/Goal-Setting</td>
<td>.18</td>
</tr>
<tr>
<td>Control of Bureaucracy</td>
<td>.14</td>
</tr>
</tbody>
</table>

R² = .71  All coefficients at 99% confidence level.

Further qualitative analysis of some 150 LOs lead the authors of this study to conclude that for local organizations to be effective they must: (1) have a proper legal framework for their establishment and operation; (2) receive training in LO operations for both the LO members and their leadership; and (3) have access to technical assistance for specialized tasks (e.g., planning, budgeting, accounting).

F. Recommendations for Accountability to the Local Electorate.

26. In a decentralized system, local governments are accountable to both the donor and the local community for the use of intergovernmental transfers. At a minimum this requires reports to both central government ministries and the community on the use of funds and the performance of programs funded by transfers. Accountability is further enhanced if local citizens have adequate incentives, authority, management capacity, and information. The findings from qualitative and quantitative research on citizen participation lead to the following recommendations:

- The central government should establish the legal framework required for citizen boards to function, including real decision-making authority.

- Citizen groups and their elected leadership should be given training on how to carry out their roles and how to assess financial and program management.

- The central government should provide reliable and timely information to grant recipients and local citizen groups on the finance, expenditure, and performance of grant-funded programs.

- The central government should provide technical assistance to grant recipients to develop the capacity to manage the finances and delivery of services funded by grants in aid; financing for such technical assistance might be assured by earmarking a small percentage of total program funding for technical assistance activities.

- In general, grants in aid should require cost sharing on part of the local community to instill a sense of community ownership and to provide stronger incentives for communities to monitor costs and the use of funds and for service agencies to perceive a linkage between performance and local revenue contributions.
Conclusions and Recommendations

1. Most governments in the LAC Region have adopted policies to decentralize responsibilities for service delivery to regional and local governments. Intergovernmental transfers play a large role in the finance of these new subnational expenditure responsibilities. Hence, the design and administration of intergovernmental transfers is critically important in influencing the supply decisions of subnational governments.

2. This study evaluated three examples of such sector-specific transfers in LAC. Chile provides a per student grant for primary education which is both transparent and predictable and establishes a relatively high minimum per pupil expenditure level. Chile also reimburses the costs of municipal health care clinics with a system of fixed reimbursement rates and an aggregate reimbursement cap to constrain grant costs. Colombia provides a system of competitive matching grants for rural roads with matching rates that vary according to the fiscal capacity of the local government.

A. Conclusions.

3. This study has reviewed LAC decentralization policies, evaluated selected LAC experience with sector-specific transfers, simulated alternative categorical grant designs, and specified the requirements for grant administration and accountability. Several broad conclusions follow.

4. Central governments have a very important role to play in establishing the enabling environment for decentralization. This includes clearly specifying expenditure and revenue assignments; establishing transparent and predictable intergovernmental transfers; restructuring central government ministries consistent with their new responsibilities; providing technical assistance to subnational governments to develop adequate administrative capacity; authorizing governance structures, including citizen participation, which facilitate the expression of citizen demand for public goods and services; providing technical assistance to make the structures function; and ensuring that citizens have the financial and performance information on public services required for accountability.

5. In addition to providing the enabling environment, central governments have a continuing oversight responsibility for the efficiency of the decentralized system. This includes the adequate
subnational provision of goods with national public good characteristics and which have interjurisdictional spillovers. This responsibility is typically exercised through the use of categorical grants with the appropriate incentives and conditions. Thus, the role of the central government includes the design and administration of sector-specific transfers which are transparent, predictable, and include incentives or conditions which facilitate the attainment of central government objectives.

6. Central government policy objectives as reflected in intergovernmental grants are multiple, and there are tradeoffs between conflicting objectives. Simulations of alternative grant designs are required to determine the nature and magnitude of the tradeoffs and to determine the best design. The simulations carried out for education, health, and roads show that: (1) other things equal, a simple grant design is more transparent and is preferred to one that is complex; (2) price incentives in the form of matching grants can work as well as mandates in raising expenditures and contributions by grant recipients, while interfering less with grantee autonomy; (3) when using price incentives, the average matching rate has to be relatively high to have a significant effect on spending and finance objectives; (4) in the absence of appropriate incentives, conditionality in the form of either minimum expenditure mandates or maintenance of expenditure requirements are needed to prevent grant recipients from reducing their own financial effort; and (5) a central government can best leverage the effect of its transfers on total expenditures by including some measure of the grantee's fiscal capacity in the grant formula, including the use of matching rates which vary with fiscal capacity.

B. Recommendations for the Bank.

7. The World Bank already plays a large role in financing fiscal decentralization in Latin America. This role includes financing central government projects which provide grants or loans to local governments for several purposes (e.g., construction of urban infrastructure or rural roads; improving the quality of primary education or primary health care clinics). In addition, it finances institutional development projects to strengthen local and regional government management, central government financial management and audit capacity, and to restructure ministries to develop functions consistent with their new roles in a decentralized system. These projects frequently require citizen participation in the design and monitoring of rural infrastructure and always include safeguards to ensure the appropriate use of funds. Several of these projects also have features which promote accountability to the electorate, including cost-sharing and the provision of technical assistance to community groups.

8. Future Bank lending in support of government decentralization policies will require more of these same efforts to develop an appropriate enabling environment for decentralization as well as supporting the development of transparent and predictable categorical grants to ensure efficiency of the decentralized system.

9. Country decentralization policies and implementation strategies and the adequacy of the enabling environment for decentralization should be assessed when the country assistance strategy is formulated. Assessments of public sector management should identify institutional
deficiencies, including financial management and public information systems important for decentralization, and propose a strategy to strengthen that portion of the enabling environment. Sector studies should assess decentralization policies and institutions at the level of the sector, including finance and expenditure assignments; identify factors in the enabling environment outside the sectoral ministry's control; where appropriate, specify and evaluate alternative grant designs; and propose institutional development strategies, including ministerial restructuring. Finally, projects which support government decentralization policies should do so as part of a long-term strategy and incorporate evaluation designs that give continual feedback to policymakers and, by the end of the project, provide reliable results which permit learning as to the policies and strategies which work best.
Annexes
Table A.1: Variable Definitions

<table>
<thead>
<tr>
<th>Name</th>
<th>Mean/Std. Dev.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTRN</td>
<td>9.3 (26.8)</td>
<td>Municipal education finance per public school student 1990</td>
</tr>
<tr>
<td>SES</td>
<td>1.8 (0.5)</td>
<td>Socioeconomic level coded from 1 to 5 from SIMCE 1990</td>
</tr>
<tr>
<td>CGRPBS</td>
<td>67.2 (34.6)</td>
<td>Central Government transfer per public school student 1991</td>
</tr>
<tr>
<td>NERPOPN</td>
<td>14.6 (19.1)</td>
<td>Non-earmarked municipal revenue per capita 1990</td>
</tr>
<tr>
<td>NERPUBS</td>
<td>95.3 (54.6)</td>
<td>Non-earmarked revenue per public school student</td>
</tr>
<tr>
<td>EDWAGES</td>
<td>1340.0 (639.0)</td>
<td>Public education expenditures on salaries divided by number of public school teachers 1990</td>
</tr>
<tr>
<td>PBSTPOP</td>
<td>2.0 (0.1)</td>
<td>Public school students divided by population</td>
</tr>
<tr>
<td>STTCHR</td>
<td>26.7 (19.2)</td>
<td>Student-teacher ratio in public schools</td>
</tr>
<tr>
<td>PERPUB</td>
<td>81.0 (18.0)</td>
<td>Students attending public schools as percent of all students in public and private subsidized schools.</td>
</tr>
<tr>
<td>CORPORATION</td>
<td>Equal one if the municipality has a municipal corporation for education and health</td>
<td></td>
</tr>
<tr>
<td>ZONA</td>
<td>.1 (0.2)</td>
<td>Regional cost of living adjustment to wages as defined in Public Law 450 of 1974</td>
</tr>
<tr>
<td>DENSITY</td>
<td>723.1 (2760.0)</td>
<td>Population density of the municipality in 1990</td>
</tr>
<tr>
<td>POVERTY</td>
<td>16.9 (8.8)</td>
<td>Percent living in extreme poverty in 1987.</td>
</tr>
<tr>
<td>REPRATE</td>
<td>10.67 (4.5)</td>
<td>Average repetition rate for the municipality.</td>
</tr>
<tr>
<td>SPNCHG</td>
<td>1.07 (5.7)</td>
<td>Average 8th grade minus average 4th grade Spanish SIMCE score in public schools of the municipality.</td>
</tr>
</tbody>
</table>

Note: All Financial Figures are in thousands of 1990 pesos.  
N = 325
Table A.2: Central Government Transfers For Education: 
Implicit Formulae

Data Set: INTERIOR
Number of Observations: 290
Dependent Variable: CGRPBS

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj R²=.15</th>
<th>Model 2 Adj R²=.15</th>
<th>Model 3 Adj R²=.15</th>
<th>Model 4 Adj R²=.15</th>
<th>Model 5 Adj R²=.15</th>
<th>Model 6 Adj R²=.15</th>
<th>Model 7 Adj R²=.15</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENSITY</td>
<td>-.0005 (.0006)</td>
<td>-.0004 (.0006)</td>
<td>-.0009 (.0007)</td>
<td>-.0009 (.0007)</td>
<td>-.0009 (.0007)</td>
<td>-.001 (.0007)</td>
<td>-.001 (.0007)</td>
</tr>
<tr>
<td>ZONA</td>
<td>70.66** (10.34)</td>
<td>73.79** (11.22)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>EDWAGES</td>
<td>-.0035 (.005)</td>
<td>.01** (.005)</td>
<td>.01** (.005)</td>
<td>.012** (.005)</td>
<td>.011** (.005)</td>
<td>.012** (.005)</td>
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</tr>
<tr>
<td>POVERTY</td>
<td>.77** (.25)</td>
<td>.78** (.25)</td>
<td>.71** (.27)</td>
<td>.89** (.28)</td>
<td>.71** (.27)</td>
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<td></td>
</tr>
<tr>
<td>NERPUBS</td>
<td></td>
<td>.01 (.03)</td>
<td></td>
<td>.004 (.03)</td>
<td></td>
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<td></td>
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<tr>
<td>SES</td>
<td></td>
<td></td>
<td>-3.25 (5.83)</td>
<td>-8.32 (6.29)</td>
<td>-4.72 (5.84)</td>
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</tr>
<tr>
<td>REPRATE</td>
<td></td>
<td></td>
<td></td>
<td>-1.26** (.55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPNCHG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- .68** (.34)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

CGRPBS Central government education transfer per public school student 1990.
DENSITY Population density of the municipality in 1990.
ZONA Regional cost of living adjustment to wages as defined in Public Law 450 in 1974.
EDWAGES Average public school teacher salary in 1990.
POVERTY Percent living in extreme poverty in 1987
NERPUBS Non-earmarked municipal revenue per public school student.
SES Socioeconomic level coded from 1 (low) to 5 (high) from SIMCE 1990.
REPRATE Average repetition rate for the municipality.
SPNCHG Average 8th grade minus average 4th grade Spanish SIMCE score in public schools of the municipality.
Table A.3: Municipal Finance of Education in Chile

Data Set: INTERIOR
Dependent Variable: EDTRN
Number of Observations: 290
OLS Log Transformation Models

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj R²=.28</th>
<th>Model 2 Adj R²=.28</th>
<th>Model 3 Adj R²=.26</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>-.41 ( .32)</td>
<td>-.46 ( .32)</td>
<td>-.39 ( .32)</td>
</tr>
<tr>
<td>CGRPBS</td>
<td>-.27 (.18)</td>
<td>-.28 (.18)</td>
<td>-.32* (.18)</td>
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<tr>
<td>NERPOP</td>
<td>1.0** (.12)</td>
<td>1.0** (.12)</td>
<td>.88** (.12)</td>
</tr>
<tr>
<td>DENSITY</td>
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<td>.104** (.037)</td>
<td>.13** (.036)</td>
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<tr>
<td>EDWAGES</td>
<td>.95** (.23)</td>
<td>.94** (.27)</td>
<td>.95** (.27)</td>
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<td>PBSTPOP</td>
<td>-.71** (.19)</td>
<td>-.7** (.19)</td>
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<td>.14 (.17)</td>
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</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

EDTRN: Municipal education finance per public school student 1990.
SES: Socioeconomic level coded from 1 to 5 from SIMCE 1990.
NERPOP: Non-earmarked municipal revenue per capita 1990.
EDWAGES: Public education expenditure on salaries divided by number of public school teachers 1990.
PBSTPOP: Public school students divided by population.
STTCHR: Student-teacher ratio in public schools.
PERPUB: Students attending public schools as percent of all students in public and private subsidized schools.
CORPORATION: Equals one if the municipality has a municipal corporation for education and health.
<table>
<thead>
<tr>
<th>Name</th>
<th>Ministry of Planning Data</th>
<th>Ministry of Interior Data</th>
<th>Definition</th>
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<td></td>
<td>Mean/Std. Day</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Unweighted</td>
<td>Weighted</td>
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<td>FAPEMPC</td>
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<td>10.42</td>
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<td>71.40</td>
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<tr>
<td>ZONA</td>
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<td>0.19</td>
<td>0.11</td>
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<td>2602.30</td>
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<td>10.23</td>
<td>16.90</td>
<td>12.77</td>
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<tr>
<td>PER O-4</td>
<td>11.12</td>
<td>11.82</td>
<td>11.22</td>
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<tr>
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<td>HLTHIND</td>
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<td>Number of Observations</td>
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<td>325</td>
<td>325</td>
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</table>
Table B.2: Characteristics of the Population in Public and Private Health Systems in Chile

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>PUBLIC SYSTEM</th>
<th>PRIVATE SYSTEM</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Per Capita Income</td>
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<td>53598.0</td>
<td>33111.0</td>
</tr>
<tr>
<td>Household Size</td>
<td>4.1</td>
<td>4.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Years of Education, Adults over Age 15</td>
<td>8.1</td>
<td>8.3</td>
<td>8.1</td>
</tr>
<tr>
<td>Years of Education, Household Heads</td>
<td>8.3</td>
<td>9.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Percent Children of Normal Weight</td>
<td>84.8</td>
<td>90.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Percent Children Under nourished</td>
<td>4.5</td>
<td>1.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Percent Population Under Age 6</td>
<td>13.2</td>
<td>11.6</td>
<td>12.6</td>
</tr>
<tr>
<td>Percent Population Over Age 6</td>
<td>9.8</td>
<td>4.2</td>
<td>8.3</td>
</tr>
<tr>
<td>Percent of Total (%)</td>
<td>71.6</td>
<td>28.4</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Data are unweighted averages for 72 municipalities in the CASEN 3 household survey (MIDENPLAN.CSS).
Table B.3: Municipal Health Finance per Beneficiary

Data set: MIDEPLAN
Number of Observations: 61
Dependent Variable: HTRNPUB
OLS Log Transformation Model

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Model 1 Adj. R² .65</th>
<th>Model 2 Adj. R² .65</th>
<th>Model 3 Adj. R² .64</th>
<th>Model 4 Adj. R² .64</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCPC</td>
<td>.73** (.24)</td>
<td>.34 (.47)</td>
<td>.69** (.25)</td>
<td>.68** (.29)</td>
</tr>
<tr>
<td>NERPC</td>
<td>.67** (.18)</td>
<td>.065** (.18)</td>
<td>.67** (.19)</td>
<td>.68** (.20)</td>
</tr>
<tr>
<td>FAPEMPUB</td>
<td>.92** (.14)</td>
<td>.93** (.14)</td>
<td>.91** (.14)</td>
<td>.91** (.15)</td>
</tr>
<tr>
<td>DENSITY</td>
<td>.05 (.03)</td>
<td>.03 (.04)</td>
<td>.05 (.04)</td>
<td>.05 (.04)</td>
</tr>
<tr>
<td>PERPUBHL</td>
<td></td>
<td>-.88 (.93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CORPORATION</td>
<td></td>
<td></td>
<td>.07 (.19)</td>
<td>.08 (.21)</td>
</tr>
<tr>
<td>ZONA</td>
<td></td>
<td></td>
<td></td>
<td>.07 (.21)</td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

HTRNPUB  Municipal health finance per beneficiary.
INCPCP  Average per capita income.
NERPC  Non-earmarked municipal revenue per capita.
DENSITY  Population density of the municipality in 1990.
FAPEMPUB  Central government health transfers per beneficiary.
PERPUBHL  Percent of population in public health system.
CORPORATION  Equals one if municipal has a health corporation.
ZONA  Regional cost-of-living adjustment as defined by Decree Law 450 in 1974.
Table B.4: Distribution of FAPEM per Capita Based On Actual Service Use and Service Cost

Data set: MOH and MOI  
Number of Observations: 78  
Dependent Variable: FAPEMPC

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. R² .22</th>
<th>Model 2 Adj. R² .25</th>
<th>Model 3 Adj. R² .26</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHILDSER</td>
<td>.046* (.026)</td>
<td>.053** (.026)</td>
<td>.035 (.026)</td>
</tr>
<tr>
<td>PEROVR60</td>
<td>.176** (.042)</td>
<td>.167** (.04)</td>
<td>.16** (.04)</td>
</tr>
<tr>
<td>PERPOSTAS</td>
<td>-.006** (.002)</td>
<td>-.007** (.003)</td>
<td>-.006** (.003)</td>
</tr>
<tr>
<td>ZONA</td>
<td>1.03** (.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUXWAGE</td>
<td></td>
<td></td>
<td>.02** (.009)</td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

FAPEMPC  Central government health transfers.
CHILDSER  Number of health clinic child services delivered per capita.
PEROVR60  Percent of population over age 60.
PERPOSTAS  Rural health posts as percent of total health clinics.
ZONA  Regional cost-of-living adjustment as defined by Decree Law 450 in 1974.
AUXWAGE  Wage of auxiliary workers in health clinics.
Table B.5: Distribution of FAPEM per Beneficiary
Based on Measures of Demand for Services

Data set: MIDEPLAN
Number of Observations: 61
Dependent Variable: FAPEMPUB

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. R²</th>
<th>Model 2 Adj. R²</th>
<th>Model 3 Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>POVERTY</td>
<td>-.103*** (.037)</td>
<td>-.105*** (.036)</td>
<td>-.09*** (.038)</td>
</tr>
<tr>
<td>PEROVR60</td>
<td>.095 (.094)</td>
<td>.068 (.09)</td>
<td>.15 (.12)</td>
</tr>
<tr>
<td>PERAGE0-4</td>
<td>.33 (.22)</td>
<td>.23 (.22)</td>
<td>.19 (.23)</td>
</tr>
<tr>
<td>PERPOSTAS</td>
<td>-.008*** (.004)</td>
<td>-.007* (.004)</td>
<td>-.007* (.004)</td>
</tr>
<tr>
<td>UNDRNOUR</td>
<td></td>
<td>.12*** (.05)</td>
<td>.13*** (.05)</td>
</tr>
<tr>
<td>NATALITY</td>
<td></td>
<td></td>
<td>.002 (.05)</td>
</tr>
<tr>
<td>INFMORT</td>
<td></td>
<td></td>
<td>-.19 (.178)</td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; *** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

FAPEMPUB Central government health transfers per beneficiary.
POVERTY Percent of population living in extreme poverty.
PER 0-4 Percent of population aged 0-4.
PEROVR60 Percent of population over age 60.
PERPOSTAS Rural health posts as percent of total health clinics.
UNDRNOUR Percent of children undernourished.
NATALITY Birth rate in 1988 per 1,000 women.
INFMORT Infant mortality rate in 1989.
ZONA Regional cost-of-living adjustment as defined by Decree Law 450 in 1974.
### Table B.6: Public Health Users

Data set: MIDEPLAN  
Number of Observations: 59  
Dependent Variable: PERPUBHL

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. R² .58</th>
<th>Model 2 Adj. R² .61</th>
</tr>
</thead>
<tbody>
<tr>
<td>INCPCP</td>
<td>-.0004** (.0001)</td>
<td>-.0004** (.0001)</td>
</tr>
<tr>
<td>POVERTY</td>
<td>.511** (.24)</td>
<td></td>
</tr>
<tr>
<td>PER0-4</td>
<td>6.22** (1.38)</td>
<td>5.79** (1.35)</td>
</tr>
<tr>
<td>PEROVR60</td>
<td>2.11** (.59)</td>
<td>2.23** (.57)</td>
</tr>
</tbody>
</table>

**Note:** Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

**Variable Definitions:**

- **INCPCP**: Average per capita income.
- **POVERTY**: Percent of population in extreme poverty.
- **PER0-4**: Percent of population aged 0-4.
- **PEROVR60**: Percent of population over age 60.
Table B.7: Health Expenditures per Capita

Data set: Ministry of Health  
Number of Observations: 72  
Dependent Variable: HTRNPC  
OLS Log Transformation Model

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. R² .27</th>
<th>Model 2 Adj. R² .27</th>
<th>Model 3 Adj. R² .28</th>
</tr>
</thead>
<tbody>
<tr>
<td>NERPC</td>
<td>.66** (.27)</td>
<td>.66** (.25)</td>
<td>.65** (.25)</td>
</tr>
<tr>
<td>FAPEMPC</td>
<td>.54** (.18)</td>
<td>.56** (.18)</td>
<td>.54** (.18)</td>
</tr>
<tr>
<td>CHILDSER</td>
<td>-.07 (.22)</td>
<td>-.13 (.23)</td>
<td>-.07 (.21)</td>
</tr>
<tr>
<td>AUXWAGE</td>
<td>-.07 (.63)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NURSWGE</td>
<td></td>
<td>.53 (.7)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTRNPC</td>
<td>Municipal health finance per capita.</td>
</tr>
<tr>
<td>NERPC</td>
<td>Non-earmarked municipal revenue per capita.</td>
</tr>
<tr>
<td>FAPEMPC</td>
<td>Central government health transfers per capita.</td>
</tr>
<tr>
<td>CHILDSER</td>
<td>Number of health clinic child services delivered per capita.</td>
</tr>
<tr>
<td>AUXWAGE</td>
<td>Wage of auxiliary workers in health clinics.</td>
</tr>
<tr>
<td>NURSWGE</td>
<td>Average wage of nurses in health clinics.</td>
</tr>
</tbody>
</table>
### Table B.8: Determinants of Zone Classification Weights

**Data set:** Ministry of Health  
**Number of Observations:** 72  
**Dependent Variable:** ZONA

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. R² .09 N=305</th>
<th>Model 2 Adj. R² .16 N=305</th>
<th>Model 3 Adj. R² .35 N=81</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDWAGES</td>
<td>.0001** (.00002)</td>
<td>.00015** (.00002)</td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td></td>
<td>-.14** (.03)</td>
<td></td>
</tr>
<tr>
<td>NURSWAGE</td>
<td></td>
<td></td>
<td>.00003 (.0007)</td>
</tr>
<tr>
<td>AUXWAGE</td>
<td></td>
<td></td>
<td>.012** (.002)</td>
</tr>
</tbody>
</table>

**Note:** Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

**Variable Definitions:**

- **ZONA** Regional cost-of-living adjustment as defined by Decree Law 450 in 1974.  
- **EDWAGES** Public school teacher salaries in 1990.  
- **SES** Socioeconomic level of population.  
- **NURSWAGE** Average wage of nurses in health clinics.  
- **AUXWAGE** Wage of auxiliary workers in health clinics.
Table B.9: Demand For Child Services

Data set: Ministry of Health
Number of Observations: 85
Dependent Variable: CHILDSER

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model 1 Adj. $R^2$.01</th>
<th>Model 2 Adj. $R^2$.05</th>
<th>Model 3 Adj. $R^2$.04</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERO-4</td>
<td>.43 (.29)</td>
<td>.56* (.29)</td>
<td>.59** (.3)</td>
</tr>
<tr>
<td>POVERTY</td>
<td></td>
<td>-.02 (.05)</td>
<td></td>
</tr>
<tr>
<td>NATALITY</td>
<td>.09 (.09)</td>
<td>.09 (.09)</td>
<td></td>
</tr>
<tr>
<td>INF MORT</td>
<td>.38* (.2)</td>
<td>.37* (.2)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.

Variable Definitions:

CHILDSER  Number of health clinic child services delivered per capita.
PERO-4    Percent of population aged 0-4.
POVERTY   Percent of population in extreme poverty.
NATALITY  Birth rate in 1988 per 1,000 women.
INF MORT  Infant mortality rate in 1989.
Table C.1: Central Government Transfers to Municipalities for Rural Roads: Implicit Formulae

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>MEAN</th>
<th>DEPENDENT VARIABLES</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Transfers</td>
<td>Construction Transfers</td>
<td>Maintenance Transfers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>per Capita</td>
<td>per Capita</td>
<td>per capita</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>N.A.</td>
<td>-6.0825*</td>
<td>-7.9472</td>
<td>-1.0615</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.7300)</td>
<td>(6.6258)</td>
<td>(1.3367)</td>
<td></td>
</tr>
<tr>
<td>Own Source Tax Revenue (US$) Per Capita</td>
<td>12.78</td>
<td>-0.0603</td>
<td>0.0307</td>
<td>-0.0137</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0568)</td>
<td>(0.1469)</td>
<td>(0.0171)</td>
<td></td>
</tr>
<tr>
<td>IVA Transfers (US$) Per Capita Earmarked for Investment</td>
<td>3.14</td>
<td>3.3526**</td>
<td>5.8842**</td>
<td>0.7632**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.0965)</td>
<td>(1.9345)</td>
<td>(0.3921)</td>
<td></td>
</tr>
<tr>
<td>Total Meters of Municipal Roads Per Capita</td>
<td>9.010</td>
<td>(0.2495)</td>
<td>0.2800**</td>
<td>0.0053</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0566)</td>
<td>(0.0800)</td>
<td>(0.0166)</td>
<td></td>
</tr>
<tr>
<td>Poverty Rate (%)</td>
<td>39.24</td>
<td>3.3200</td>
<td>2.2270</td>
<td>2.7476</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.6151)</td>
<td>(6.2624)</td>
<td>(1.2554)**</td>
<td></td>
</tr>
</tbody>
</table>

| R²                                                 | 0.1355 | 0.1873                                  | 0.0860              |
| Standard Error                                     | 9.2534 | 10.9358                                 | 2.4626              |
| N                                                  | 196    | 95                                      | 107                 |
| Mean of Dependent Variable (US$)                   | 7.2140 | 6.0015                                  | 1.2126              |

Note: Standard errors given in parentheses; mean of independent variables is for the full sample (196) of municipalities receiving road transfers; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.
Table C.2: Municipal Government Matching Rates (%) for Expenditures on Rural Roads: Implicit Formulae

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>MEAN</th>
<th>DEPENDENT VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Transfers per Capita</td>
</tr>
<tr>
<td>Constant</td>
<td>N.A.</td>
<td>7.2288*  (1.6964)</td>
</tr>
<tr>
<td>Own Source Tax Revenue (US$) per Capita</td>
<td>12.78</td>
<td>-0.0043  (0.0258)</td>
</tr>
<tr>
<td>IVA Transfers (US$) Per Capita Earmarked for Investment</td>
<td>3.14</td>
<td>-0.2874  (0.4987)</td>
</tr>
<tr>
<td>Total Meters of Municipal Roads Per Capita</td>
<td>9.005</td>
<td>-0.0186  (0.0258)</td>
</tr>
<tr>
<td>Poverty Rate (%)</td>
<td>39.24</td>
<td>0.4095  (1.6441)</td>
</tr>
</tbody>
</table>

R²: 0.0051
Standard Error: 4.2083
N: 196
Mean of Dependent Variable ($US): 6.2600

Note: Standard errors given in parentheses; mean of independent variables is for the full sample (196) of municipalities receiving road transfers; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.
Table C.3: Municipal Government Matching Expenditures on Municipal Rural Roads

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>MEAN</th>
<th>DEPENDENT VARIABLES</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Construction</td>
<td>Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expenditures per Capita</td>
<td>Expenditures per Capita</td>
<td>Expenditures per capita</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>N.A.</td>
<td>-0.3623</td>
<td>-0.7111</td>
<td>-0.4724</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.3275)</td>
<td>(0.0860)</td>
<td>(0.6583)</td>
<td></td>
</tr>
<tr>
<td>Own Source Tax Revenue (US$) Per Capita</td>
<td>12.78</td>
<td>0.0044</td>
<td>-0.0012</td>
<td>-0.0045</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0500)</td>
<td>(0.0011)</td>
<td>(0.0146)</td>
<td></td>
</tr>
<tr>
<td>IVA Transfers (US$) Per Capita</td>
<td>3.14</td>
<td>0.2296**</td>
<td>0.0560**</td>
<td>0.4037**</td>
<td></td>
</tr>
<tr>
<td>Earmarked for Investment</td>
<td></td>
<td>(0.0963)</td>
<td>(0.0260)</td>
<td>(0.1922)</td>
<td></td>
</tr>
<tr>
<td>Total Meters of Municipal Roads Per</td>
<td>9.010</td>
<td>0.0115*</td>
<td>(0.0004)</td>
<td>0.0125</td>
<td></td>
</tr>
<tr>
<td>Capita</td>
<td></td>
<td>(0.0050)</td>
<td>(0.0011)</td>
<td>(0.0078)</td>
<td></td>
</tr>
<tr>
<td>Poverty Rate (%)</td>
<td>39.24</td>
<td>0.8180**</td>
<td>0.1675**</td>
<td>-0.3655</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.3174)</td>
<td>(0.0848)</td>
<td>(0.6222)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td>0.0571</td>
<td>0.0920</td>
<td>0.0687</td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td></td>
<td>0.8123</td>
<td>0.1628</td>
<td>1.0865</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>196</td>
<td>103</td>
<td>95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean of Dependent Variable ($US)</td>
<td>0.4382</td>
<td>0.0808</td>
<td>0.3574</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Standard errors given in parentheses; mean of independent variables is for the full sample (196) of municipalities receiving road transfers; ** and * indicate statistically significant at 0.05 and 0.10 levels, respectively.
Table C.4: Variable Means by Municipal Classification
(Full sample of 1025 Colombian Municipalities)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>TOTAL SAMPLE</th>
<th>MUNICIPAL CLASSIFICATION</th>
<th>MUNICIPAL CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIGH</td>
<td>LOW</td>
<td>HIGH</td>
</tr>
<tr>
<td>FNCV Rural Road Grants per Capita</td>
<td>2.8474</td>
<td>1.4905</td>
<td>4.6347</td>
</tr>
<tr>
<td>Own Source Revenue (US$) Per Capita (Fiscal Effort)</td>
<td>1.2828</td>
<td>2.8059</td>
<td>0.3427</td>
</tr>
<tr>
<td>IVA Transfer Per Capita (US$) Earmarked for Investment (Fiscal Capacity)</td>
<td>0.8837</td>
<td>0.9465</td>
<td>0.8278</td>
</tr>
<tr>
<td>Total IVA Transfer (US$) Per Capita</td>
<td>1.7874</td>
<td>2.0484</td>
<td>1.6950</td>
</tr>
<tr>
<td>Total Meters of Municipal Roads Per Capita (Need)</td>
<td>7.5416</td>
<td>7.5457</td>
<td>6.8679</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>35.27</td>
<td>26.27</td>
<td>37.53</td>
</tr>
</tbody>
</table>
### Table D.1: Alternative Grant Designs for Increasing Education Expenditure

<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>DESCRIPTION</th>
<th>FORMULA</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>Maintain current student capitation grant.</td>
<td>$G_i = \text{USE} \left[ \sum W_{ij} \right]$</td>
</tr>
<tr>
<td># 2</td>
<td>Increase municipal non-earmarked revenues.</td>
<td>$G_i = 2.5 \left[ \text{NER}_i \right]$</td>
</tr>
<tr>
<td># 3</td>
<td>Increase current student capitation level.</td>
<td>$G_i = 15.0 + \text{USE} \left[ \sum W_{ij} \right]$</td>
</tr>
<tr>
<td># 4</td>
<td>Add a poverty-based grant.</td>
<td>$G_i = 15.0 \left[ \frac{\text{POV}_i}{\text{POV}} \right]$</td>
</tr>
<tr>
<td># 5</td>
<td>Add a poverty-based grant adjusted by input prices.</td>
<td>$G_i = 15.0 \left[ \frac{\text{POV}_i}{\text{POV}} \right] \left[ \frac{\text{C}_i}{c_i} \left( \frac{\text{SAL}}{\text{EXP}} \right) \right] + \left( 1 - \frac{\text{SAL}}{\text{EXP}} \right)$</td>
</tr>
<tr>
<td># 6</td>
<td>Add an achievement gain based grant.</td>
<td>$G_i = 15.0 \left[ \frac{\text{ACHVT}_i}{\text{ACHVT}} \right]$</td>
</tr>
<tr>
<td># 7</td>
<td>Add a percentage equalizing grant based on fiscal capacity.</td>
<td>$G_i = 30.0 \left[ 1 - 0.50 \left( \frac{\text{NER}_i}{\text{NER}} \right) \right]$</td>
</tr>
<tr>
<td># 8</td>
<td>Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>$G_i = 30.0 \left[ 1 - 0.50 \left( \frac{\text{NER}_i}{\text{NER}} \right) \right]; \text{ME}_i \geq 15.0$</td>
</tr>
<tr>
<td># 9</td>
<td>Add a variable matching grant.</td>
<td>$G_i = \text{ME}_i \left[ 1 - 0.25 \left( \frac{\text{NER}_i}{\text{NER}} \right) \right]$</td>
</tr>
</tbody>
</table>

**WHERE:**

- $\text{ACHVT}_i = \text{Grade 8 minus grade 4 SIMCE Spanish test score of public school students in municipality } i$.
- $\text{C}_i = \text{Cost of living adjustment to wages as defined by Public Law 450}$.
- $G_i = \text{Central Government education grant per student to municipality}$.
- $\text{ME}_i = \text{Municipal education finance per public school student in municipality } i$.
- $\text{NER}_i = \text{Non-earmarked revenue per capita of municipality } i$.
- $\text{POV}_i = \text{Poverty rate of } ith \text{ municipality}$.
- $\text{SAL/EXP} = \text{National average ratio of salaries and wages to total education expenditures}$.
- $\text{USE} = \text{Base level Central Government grant per student}$.
- $W_{ij} = \text{Weight of } jth \text{ factor for } ith \text{ municipality}$. 
Table D.2: Distribution of Education Finance by Alternative Grant Design

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>EXPENDITURE/STUDENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CENTRAL GOVERNMENT</td>
<td>MUNICIPAL GOVERNMENT</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain current student capitation grant.</td>
<td>67.2</td>
</tr>
<tr>
<td># 2</td>
<td>Increase municipal non-earmarked revenues.</td>
<td>341.2</td>
</tr>
<tr>
<td># 3</td>
<td>Increase current student capitation.</td>
<td>82.0</td>
</tr>
<tr>
<td># 4</td>
<td>Add a poverty-based grant.</td>
<td>82.0</td>
</tr>
<tr>
<td># 5</td>
<td>Add a poverty-based grant adjusted by input prices.</td>
<td>82.4</td>
</tr>
<tr>
<td># 6</td>
<td>Add an achievement gain-based grant</td>
<td>83.5</td>
</tr>
<tr>
<td># 7</td>
<td>Add a percentage equalizing grant based on fiscal capacity.</td>
<td>80.9</td>
</tr>
<tr>
<td># 8</td>
<td>Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>80.9</td>
</tr>
<tr>
<td># 9</td>
<td>Add a variable matching grant.</td>
<td>80.2</td>
</tr>
</tbody>
</table>
Table D.3: Leverage of Central Government Finance

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>EXPENDITURE/CENTRAL GOVERNMENT FINANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td># 1 Maintain current student capitation grant.</td>
<td>1.14</td>
</tr>
<tr>
<td># 2 Increase municipal non-c earmarked revenues.</td>
<td>0.21</td>
</tr>
<tr>
<td># 3 Increase current student capitation.</td>
<td>1.10</td>
</tr>
<tr>
<td># 4 Add a poverty-based grant.</td>
<td>1.11</td>
</tr>
<tr>
<td># 5 Add a poverty-based grand adjusted by input prices.</td>
<td>1.10</td>
</tr>
<tr>
<td># 6 Add an achievement gain-based grant.</td>
<td>1.07</td>
</tr>
<tr>
<td># 7 Add a percentage equalizing grant based on fiscal capacity.</td>
<td>1.11</td>
</tr>
<tr>
<td># 8 Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>1.24</td>
</tr>
<tr>
<td># 9 Add a variable matching grant.</td>
<td>1.13</td>
</tr>
</tbody>
</table>
Table D.4: Total Cost of Alternative Grant Designs for Education

<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>CENTRAL GOVERNMENT</th>
<th>MUNICIPAL GOVERNMENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1 Maintain current student capitation grant.</td>
<td>117.5</td>
<td>16.3</td>
<td>133.8</td>
</tr>
<tr>
<td># 2 Increase municipal non-earmarked revenues.</td>
<td>391.8</td>
<td>41.1</td>
<td>432.9</td>
</tr>
<tr>
<td># 3 Increase current student capitation.</td>
<td>143.7</td>
<td>15.2</td>
<td>158.6</td>
</tr>
<tr>
<td># 4 Add a poverty-based grant.</td>
<td>143.7</td>
<td>15.6</td>
<td>158.9</td>
</tr>
<tr>
<td># 5 Add a poverty-based grant adjusted by input prices.</td>
<td>148.8</td>
<td>15.2</td>
<td>164.0</td>
</tr>
<tr>
<td># 6 Add an achievement gain-based grant.</td>
<td>146.7</td>
<td>11.4</td>
<td>157.7</td>
</tr>
<tr>
<td># 7 Add a percentage equalizing grant based on fiscal capacity.</td>
<td>141.8</td>
<td>15.9</td>
<td>157.3</td>
</tr>
<tr>
<td># 8 Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>141.8</td>
<td>34.4</td>
<td>176.2</td>
</tr>
<tr>
<td># 9 Add a variable matching grant.</td>
<td>140.2</td>
<td>18.7</td>
<td>158.9</td>
</tr>
</tbody>
</table>

Note: For municipal schools only.
Table D.5: Effects of Alternative Grant Designs on Expenditure and Finance: Low vs. High Poverty Rates

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>MUNICIPALITIES WITH LOW POVERTY RATES (BOTTOM DECILE)</th>
<th>MUNICIPALITIES WITH HIGH POVERTY RATES (TOP DECILE)</th>
<th>(B)/(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
<td>(A) Total</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain current student capitation grant.</td>
<td>69.0</td>
<td>43.7</td>
</tr>
<tr>
<td># 2</td>
<td>Increase municipal non-earmarked revenues.</td>
<td>69.0</td>
<td>87.3</td>
</tr>
<tr>
<td># 3</td>
<td>Increase current student capitation.</td>
<td>84.0</td>
<td>40.7</td>
</tr>
<tr>
<td># 4</td>
<td>Add a poverty-based grant.</td>
<td>72.6</td>
<td>43.4</td>
</tr>
<tr>
<td># 5</td>
<td>Add a poverty-based grant adjusted input prices.</td>
<td>72.6</td>
<td>47.2</td>
</tr>
<tr>
<td># 6</td>
<td>Add an achievement gain-based grant.</td>
<td>84.6</td>
<td>26.0</td>
</tr>
<tr>
<td># 7</td>
<td>Add a percentage equalizing grant based on fiscal capacity.</td>
<td>77.5</td>
<td>43.5</td>
</tr>
<tr>
<td># 8</td>
<td>Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>77.5</td>
<td>53.0</td>
</tr>
<tr>
<td># 9</td>
<td>Add a variable matching grant.</td>
<td>84.8</td>
<td>45.9</td>
</tr>
</tbody>
</table>
Table D.6: Effects of Alternative Grant Designs on Expenditures and Finance: Low vs. High Fiscal Capacity

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>MUNICIPALITIES WITH HIGH FISCAL CAPACITY (TOP DECILE)</th>
<th>MUNICIPALITIES WITH LOW FISCAL CAPACITY (BOTTOM DECILE)</th>
<th>(B)/(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
<td>Total</td>
</tr>
<tr>
<td># 1 Maintain current student capitation grant.</td>
<td>90.1</td>
<td>46.7</td>
<td>136.8</td>
</tr>
<tr>
<td># 2 Increase municipal non-earmarked revenues.</td>
<td>90.1</td>
<td>93.4</td>
<td>183.5</td>
</tr>
<tr>
<td># 3 Increase current student capitation.</td>
<td>105.1</td>
<td>45.3</td>
<td>150.4</td>
</tr>
<tr>
<td># 4 Add a poverty-based grant.</td>
<td>102.4</td>
<td>46.0</td>
<td>148.4</td>
</tr>
<tr>
<td># 5 Add a poverty-based grant adjusted by input prices.</td>
<td>105.1</td>
<td>49.1</td>
<td>154.2</td>
</tr>
<tr>
<td># 6 Add an achievement gain-based grant.</td>
<td>107.0</td>
<td>32.5</td>
<td>139.5</td>
</tr>
<tr>
<td># 7 Add a percentage equalizing grant based on fiscal equity.</td>
<td>90.1</td>
<td>46.7</td>
<td>136.8</td>
</tr>
<tr>
<td># 8 Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>90.1</td>
<td>50.0</td>
<td>140.1</td>
</tr>
<tr>
<td># 9 Add a variable matching grant.</td>
<td>90.2</td>
<td>46.7</td>
<td>136.9</td>
</tr>
</tbody>
</table>
Table D.7: Effects of Alternative Grant Designs on Expenditures and Finance:
Low vs. High Educational Achievement

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>MUNICIPALITIES WITH HIGH SCHOOL ACHIEVEMENT (TOP DECILE)</th>
<th>MUNICIPALITIES WITH LOW SCHOOL ACHIEVEMENT (BOTTOM DECILE)</th>
<th>B/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
<td>Total</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain current student capitation grant.</td>
<td>71.3</td>
<td>30.5</td>
</tr>
<tr>
<td># 2</td>
<td>Increase municipal non-earmarked revenues.</td>
<td>71.3</td>
<td>41.0</td>
</tr>
<tr>
<td># 3</td>
<td>Increase current student capitation.</td>
<td>86.0</td>
<td>18.6</td>
</tr>
<tr>
<td># 4</td>
<td>Add a poverty-based grant.</td>
<td>79.2</td>
<td>19.6</td>
</tr>
<tr>
<td># 5</td>
<td>Add a poverty-based grant adjusted by input prices.</td>
<td>79.4</td>
<td>18.8</td>
</tr>
<tr>
<td># 6</td>
<td>Add an achievement gain-based grant.</td>
<td>88.7</td>
<td>16.5</td>
</tr>
<tr>
<td># 7</td>
<td>Add a percentage equalizing grant based on fiscal capacity.</td>
<td>79.8</td>
<td>20.4</td>
</tr>
<tr>
<td># 8</td>
<td>Add a percentage equalizing grant with a mandatory expenditure requirement.</td>
<td>79.8</td>
<td>29.0</td>
</tr>
<tr>
<td># 9</td>
<td>Add a variable matching grant.</td>
<td>84.3</td>
<td>22.5</td>
</tr>
</tbody>
</table>
Table E.1: Alternative Grant Designs for Health Transfers to Municipalities

<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>DESCRIPTION</th>
<th>FORMULA</th>
</tr>
</thead>
<tbody>
<tr>
<td># 1</td>
<td>Maintain existing cost reimbursement plan.</td>
<td>Cost-reimbursement to municipalities on the basis of MOH fee schedule and number of services delivered.</td>
</tr>
<tr>
<td># 2</td>
<td>Substitute a formula grant per capita.</td>
<td>Size of grant varies with determinants of use (poverty and dependency rates).</td>
</tr>
<tr>
<td># 3a</td>
<td>Substitute a formula grant per capita adjusted for input prices maintenance of effect (MOE) required.</td>
<td>Size of grant varies with determinants of use and cost (zone classification).</td>
</tr>
<tr>
<td># 3b</td>
<td>Same as # 3a but minimum expenditure mandate replaces MOE.</td>
<td>Same as # 3a; ( [G_i + MH_i] &gt; 2.07 )</td>
</tr>
<tr>
<td># 4</td>
<td>Substitute a percentage equalizing grant based on fiscal capacity.</td>
<td>Size of grant varies inversely with relative fiscal capacity.</td>
</tr>
<tr>
<td># 5a</td>
<td>Substitute a closed-ended variable matching grant.</td>
<td>Size of grant varies inversely with relative fiscal capacity and directly with municipal health expenditures.</td>
</tr>
<tr>
<td># 5b</td>
<td>Substitute a closed-ended variable matching grant; minimum expenditure mandated.</td>
<td>Size of grant varies inversely with relative fiscal capacity and directly with municipal health expenditures.</td>
</tr>
</tbody>
</table>

WHERE:

- \( C_j \): Cost of living adjustment to wages as defined by Public Law 450.
- \( DEP_i \): Persons aged 04 and over 60 as ratio of population of municipality \( i \).
- \( G_i \): Central Government healthy grant per capita or beneficiary to municipality.
- \( FAPEM_i \): \( (FAPEM/POP) \), Initial average Central Government transfers per beneficiary under current program.
- \( MAL_i \): Malnutrition rate of municipality \( i \).
- \( NER_i \): Non-earmarked revenue per capita of municipality \( i \).
- \( P_j \): Ministry of Health reimbursement rate for service \( j \).
- \( MH_i \): Municipal health finance per capita in municipality \( i \).
- \( POV_i \): Poverty rate of municipality \( i \).
- \( SAL/EXP \): National average ratio of salaries and wages to total health expenditures.
- \( S_j \): Quantity of service \( j \) provided by municipality \( i \).
Table E.2: Distribution of Health Finance by Alternative Grant Design

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>EXPENDITURE/STUDENT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CENTRAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MUNICIPAL GOVERNMENT</td>
<td>GOVERNMENT</td>
</tr>
<tr>
<td># 1 Maintain current existing cost reimbursement plan.</td>
<td>1.57</td>
<td>0.50</td>
</tr>
<tr>
<td># 2 Substitute a formula grant per capita.</td>
<td>1.53</td>
<td>N.A.</td>
</tr>
<tr>
<td># 3a Substitute a formula grant per capita adjusted for input prices; MOE required.</td>
<td>1.58</td>
<td>0.93</td>
</tr>
<tr>
<td># 3b Substitute a formula grant per capita adjusted for input prices; minimum expenditure mandated.</td>
<td>1.58</td>
<td>0.93</td>
</tr>
<tr>
<td># 4 Substitute a percentage equalizing grant based on fiscal capacity.</td>
<td>1.55</td>
<td>N.A.</td>
</tr>
<tr>
<td># 5a Substitute a close ended variable matching grant.</td>
<td>1.53</td>
<td>0.45</td>
</tr>
<tr>
<td># 5b Substitute a close-ended variable matching grant; minimum expenditure mandated.</td>
<td>1.76</td>
<td>0.91</td>
</tr>
</tbody>
</table>

Note: Calculations based on all Chilean municipalities; simulation of alternative #5 assumes a price elasticity of -0.5
Table E.3: Effects of Alternative Grant Design on Expenditure and Finance: Low vs. High Poverty

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>MUNICIPALITIES WITH LOW POVERTY RATES (BOTTOM DECILE)</th>
<th>MUNICIPALITIES WITH HIGH POVERTY RATES (TOP DECILE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain existing cost reimbursement plan.</td>
<td>1.52</td>
</tr>
<tr>
<td># 2</td>
<td>Substitute a formula grant per capita.</td>
<td>0.78</td>
</tr>
<tr>
<td># 3a</td>
<td>Substitute a formula grant per capita adjusted for input prices; MOE required.</td>
<td>0.82</td>
</tr>
<tr>
<td># 3b</td>
<td>Substitute a formula grant per capita adjusted for input prices; minimum expenditure mandated.</td>
<td>0.82</td>
</tr>
<tr>
<td># 4</td>
<td>Substitute a percentage equalizing grant based on fiscal capacity.</td>
<td>1.08</td>
</tr>
<tr>
<td># 5a</td>
<td>Substitute a close-ended variable matching grant.</td>
<td>1.14</td>
</tr>
<tr>
<td># 5b</td>
<td>Substitute a close-ended variable matching grant; minimum expenditure mandated.</td>
<td>1.33</td>
</tr>
<tr>
<td>ALTERNATIVE</td>
<td>MUNICIPALITIES WITH HIGH FISCAL CAPACITY (BOTTOM DECILE)</td>
<td>MUNICIPALITIES WITH LOW FISCAL CAPACITY (TOP DECILE)</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain existing cost reimbursement plan.</td>
<td>3.79</td>
</tr>
<tr>
<td># 2</td>
<td>Substitute a formula grant per capita.</td>
<td>3.11</td>
</tr>
<tr>
<td># 3a</td>
<td>Substitute a formula grant per capita adjusted for input prices; MOE required.</td>
<td>3.70</td>
</tr>
<tr>
<td># 3b</td>
<td>Substitute a formula grant per capita adjusted for input prices; minimum expenditure mandated.</td>
<td>3.70</td>
</tr>
<tr>
<td># 4</td>
<td>Substitute a percentage equalizing grant based on fiscal capacity.</td>
<td>0.02</td>
</tr>
<tr>
<td># 5a</td>
<td>Substitute a close-ended variable matching grant.</td>
<td>0.17</td>
</tr>
<tr>
<td># 5b</td>
<td>Substitute a close-ended variable matching grant; minimum expenditure mandated.</td>
<td>0.17</td>
</tr>
</tbody>
</table>
Table E.5: Effects of Alternative Grant Design on Expenditures and Finance:
Low vs. High Biological/Physiological Health Need

<table>
<thead>
<tr>
<th>ALTERNATIVE</th>
<th>MUNICIPALITIES WITH HIGH INFANT MORTALITY (BOTTOM DECILE)</th>
<th>MUNICIPALITIES WITH LOW INFANT MORTALITY (TOP DECILE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Government Finance</td>
<td>Municipal Government Finance</td>
</tr>
<tr>
<td># 1</td>
<td>Maintain existing cost reimbursement plan.</td>
<td>1.71</td>
</tr>
<tr>
<td># 2</td>
<td>Substitute a formula grant per capita.</td>
<td>1.80</td>
</tr>
<tr>
<td># 3a</td>
<td>Substitute a formula grant per capitation registered for input prices.</td>
<td>1.82</td>
</tr>
<tr>
<td># 3b</td>
<td>Substitute a formula grant per capitation registered for input prices.</td>
<td>1.82</td>
</tr>
<tr>
<td># 4</td>
<td>Substitute a percentage equalizing grant based on fiscal capacity.</td>
<td>1.54</td>
</tr>
<tr>
<td># 5a</td>
<td>Substitute a close-ended variable matching grant.</td>
<td>1.51</td>
</tr>
<tr>
<td># 5b</td>
<td>Substitute a close-ended variable matching grant; minimum expenditure mandated.</td>
<td>1.75</td>
</tr>
</tbody>
</table>
Table F.1: Distribution of Rural Road Grants by Alternative Measures of Need

<table>
<thead>
<tr>
<th>Alternative Grant Designs</th>
<th>Measure of Need</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total kilometers of road in the department per capita (NJ)</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Total kilometers of municipal road in the department per capita (NJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total kilometers of municipal dirt road in the department per capita (NJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Existing total cost-sharing project grants</td>
<td>102.6</td>
<td>90.3</td>
<td>107.2</td>
<td>73.7</td>
<td>72.1</td>
<td>74.7</td>
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<tr>
<td>2. Existing maintenance grants</td>
<td>16.1</td>
<td>11.2</td>
<td>16.2</td>
<td>9.5</td>
<td>13.5</td>
<td>9.3</td>
<td></td>
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<tr>
<td>3. Existing construction and rehabilitation grants</td>
<td>86.5</td>
<td>79.1</td>
<td>90.9</td>
<td>64.2</td>
<td>58.6</td>
<td>65.4</td>
<td></td>
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<tr>
<td>4. Formula grant based on N&lt;sub&gt;2&lt;/sub&gt;</td>
<td>N.A.</td>
<td>N.A.</td>
<td>150.1</td>
<td>33.9</td>
<td>N.A.</td>
<td>N.A.</td>
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<tr>
<td>5. Formula grant for maintenance based on N&lt;sub&gt;2&lt;/sub&gt;</td>
<td>N.A.</td>
<td>N.A.</td>
<td>21.2</td>
<td>4.8</td>
<td>N.A.</td>
<td>N.A.</td>
<td></td>
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<tr>
<td>6. Formula grant for construction and rehabilitation based on N&lt;sub&gt;3&lt;/sub&gt;</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>160.0</td>
<td>9.8</td>
<td></td>
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