



Decentralization in Colombia

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Abstract

In the 1990's decentralization in Colombia, a process which had begun a decade earlier, was sharply accelerated. The percentage of current Central Government revenues that are automatically transferred to the regional governments quickly jumped from about 20% to over 40%. Many analysts attribute the sharp fiscal deterioration experienced in the country to this decision. Regional governments, indeed, accumulated substantial amounts of debt and currently face serious financial difficulties. This paper is policy oriented. After a discussion of the central issues associated with decentralization in general, we turn to the specific case of Colombia. Our analysis highlights three aspects: (a) the rules that govern how a particular region's transfers are defined. (b) the rules that govern how these resources must be spent and (c) the rules governing a regional government's ability to issue debt. Rules governing how a region receives transfers from the central government have several problems. Firstly, they are not linked to any explicit and simple consideration of its contribution to total central government revenues, they lack simple redistributive criteria (from richer to poorer regions) and they do not sufficiently reward regional fiscal performance. Our proposals seek to correct these three deficiencies. Second, the rules that govern expenditures by the regional governments are too tight. We propose sharply reducing the constraints that face mayors and governors. Third, the ability to run deficits and issue debt, in a context that includes moral hazard, has already become a source of problems. We propose a balanced budget rule for regional governments. We also argue in favor of reelection of the regional authorities (mayors and governors) as an incentive mechanism that enhances the effects of these reforms.

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I. Introduction

The allocation of responsibilities between central and local governments and their fiscal relationship is one of the most important and complex issues of public finance. The general tendency around the world in the last decade has been toward more decentralization, that is delegation of more fiscal prerogatives to local governments even in countries that, traditionally, have been rather centralized. The main motivation of this tendency is that local governments are supposed to be "closer to the people", therefore have better information on how to choose policies that fit the local needs.¹ Whether this process has been a success remains to be seen.

Decentralization in practice can take many different forms. A particularly important distinction arises from the degree of correspondence between the revenues raised at each level of Government, on the one hand, and their weight in total spending decisions, on the other. While in a centralized system, all revenues are raised by the national authorities and all spending decisions are made by the central government, in decentralized countries, one can think of two polar cases. At one extreme are systems in which all revenues are collected nationally, they are transferred to the regional governments and all spending decisions are taken locally. At the opposite extreme are systems where a large fraction of revenues are collected locally and local governments can exercise expenditure decisions, only to the extent that they are able to obtain revenues.

Another important difference concerns whether or not local governments can run deficits and borrow freely in the financial markets. The main potential problem of local borrowing is moral hazard: local governments have frequently been bailed out by central government and this possibility can seriously distort incentives. Banks will be willing to finance unreasonable projects, knowing that the central government will eventually step in. Local governments will borrow even at high rates knowing that the central government will bail out. A challenging problem is how to avoid this distortion of incentives without curtailing too much flexibility of local budgets and the financing of long-term investment projects.

Critics of decentralization have argued that delegation of fiscal responsibilities to local governments have often been associated with fiscal problems at either the local level or, most often, transmitted from the local to the national level.² That is, a lack of fiscal discipline at the local level has generated large national deficits and debts, even when central governments were running tight finances at the national level. Two important examples of this phenomenon in Latin America are Brazil and Argentina³. While it is not a necessary feature of decentralization to create national deficits, if the design of the fiscal relationship between central and local governments is not careful, decentralization may become a major source of fiscal imbalance.

With the Constitutional reform of 1991, Colombian public finances became quite decentralized, sharply accelerating a decentralization process that had started earlier. In terms of public spending allocated by sub-national governments, Colombia ranks first after the two federal countries in the region, namely Argentina and Brazil. In Colombia, over 40 percent of total government spending is

¹ The economic literature on this point is on the so-called "fiscal federalism". For a recent survey, see Bates (1999), for a broad discussion of policy issues see Ter Minassian (1999).

² See Tanzi (1996) for some critical views about federalism and Ter Minassian (1999) for a broad overview.

³ For an interesting discussion of public finances in Latin America with a focus on the relationship between central and local governments, see Gavin and Perotti (1997). For an insightful discussion of Argentina, see Jones, Sanguinetti and Tommasi (2000).

allocated by sub national governments, against an average of 15 percent in Latin America. The bulk of tax revenues (over 80) are collected at the national level and, along with other minor current revenues, are then transferred to the regional governments according to a set of rules. Local governments receive these transfers and must spend them in rather tightly defined items. Local governments are allowed to run deficits and issue debt.

We argue below that these features of decentralization systems fail to impose tight budget constraints at the regional level and are prone to create fiscal imbalances, transmitted to the central government. In fact, the fiscal stability of Colombia was jeopardized soon after the 1991 reform, largely as the result of problems with the decentralization process. Furthermore, given the rigidity of the rules about the allocation of government spending at the local level, it is not clear to what extent the fiscal decentralization of 1991 has reached the goal of tailoring spending to local needs and improving efficiency in the delivery of social services. The chapter on the delivery of social services (Perotti (2000)) argues, in fact, that the excessive imbalance of social spending on health and education has interfered with an efficient use of resources to reduce poverty.

This chapter focuses on four issues: i) The rules of allocation of fiscal resources to different localities; ii) The rules concerning how localities can spend fiscal transfers from the center; iii) The rules concerning the balance of local governments' budgets; iv) Issues concerning incentives for local politicians.

This chapter is organized as follows: Section II describes the current situation and problems related to fiscal decentralization in Colombia. Section III discusses the policy issues related to fiscal federalism with an "eye" focused on those more relevant for Colombia. Section IV illustrates our proposal for re-forms. The last Section concludes.

II. Fiscal Decentralization in Colombia

A. Introduction

In sharp contrast to the historical record until the nineties, recent fiscal performance in Colombia has been troublesome. For the first time ever, Colombia has signed a formal agreement with the IMF, late in 1999, in an attempt to halt erosion of domestic and international confidence, which permeated markets in 1998 and 1999. This deterioration was largely due to fiscal unbalances originating in local/central government relationships.

While the share of Central Government expenditure in GDP has increased by 9 percentage points, the share revenue has increased by only 4. Consequently (in terms of GDP), the stock of debt has doubled and interest payments have tripled (See Table 1).

With unchanged legislation, public finances appear in even worse shape in the long run, given the expected evolution of the social security system and of the projected public intervention in the financial sector.⁴ Furthermore, the tax code has been changed very frequently (9 tax law reforms in the last six years), seriously compromising the stability of the system and, thus, the incentives to invest.

Many observers agree that a permanent resolution of the increasing problem of fiscal imbalance in Colombia requires a revision of the arrangement concerning the relationship between Central

⁴ The pension system is currently very distorted; it is very generous for a small fraction of the labor force, especially public employees. Amongst the latter, teachers receive an extremely generous treatment, relative to others. At the time of this writing the government is preparing a reform proposal for the pension system.

Table 1. Colombia: Central Government Finances (GDP ratios)

	Revenue	Expenditure	Surplus	Total Debt	Interest
1990	8.9	9.7	-0.8	14.9	1.1
1991	10.4	10.6	-0.2	12.9	1.2
1992	10.8	12.5	-1.7	13.6	1.0
1993	11.6	12.3	-0.7	13.4	1.1
1994	11.4	12.8	-1.4	12.0	1.2
1995	11.3	13.6	-2.3	13.2	1.2
1996	12.0	15.7	-3.7	13.9	1.9
1997	12.6	16.3	-3.7	17.5	2.0
1998	11.9	16.8	-4.9	21.6	2.9
1999	13.4	19.3	-5.9	29.6	3.3

Source:

Government and the local Governments. In fact, an increasing share of Central Government outlays are in the form of transfers to the regional governments (departments and municipalities), as mandated by the 1991 Constitution. In 1999, for instance, transfers to the regions amounted to over 27 of total central government expenditures.

B. The Current Rules

1. Background

The 1991 Constitution establishes the three most important guides as to how decentralization currently functions in Colombia:

- The Central Government retains its prominence in terms of taxation and is mandated to transfer a significant share of these resources to the regional Governments (Article 356). Law 60 (1993) develops this mandate and introduces the specific mechanisms now in operation, as discussed below.
- The aim of decentralization is to make social expenditures (mostly health and education) more efficient. Specifically, it establishes that health and education expenditures should account for the bulk of the transferred resources. Local governments, however, have little discretion regarding the allocation of the transferred funds. Colombia has the highest conditionality of this type among decentralized countries in Latin America⁵.
- It establishes a general, albeit very vague, mandate (Article 364) wherein local governments may not "spend beyond their means". Only six years later, through Law 358 (1997) are some specific parameters introduced.

2. The specific arrangements: local taxes

Departmental taxes are levied mostly on consumption of liquor, beer and tobacco. The sum of these three taxes is about 70 percent of the total. Of the remaining 30 percent, 20 is a tax on motor vehicles and the rest are small taxes (Figure 1).

⁵ IADB (1997).

As for municipalities, they are concentrated on property, industry, and commerce, basically sale taxes (Figure 2).

Local taxes, as mentioned, account for about 19 of total taxes in the country. The projections for 2000 are shown in Table 2. Regional authorities do, in fact, have instruments available that can be used to enhance their current revenues and there are many examples in which this has occurred since the 1991 Constitution. In Medellin, for example, the ratio of transfers to total current income de-creased from 43 in 1997 to 22 in 1999, reflecting sharp fiscal effort implemented locally, while in Barranquilla it has increased from 43.4 to 48.7 in the same period.

Figure 1. Departmental Tax Composition

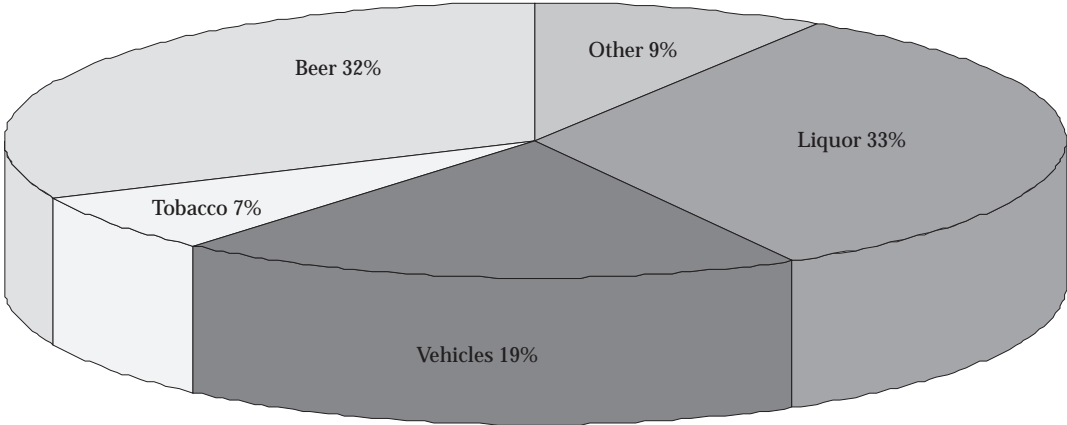
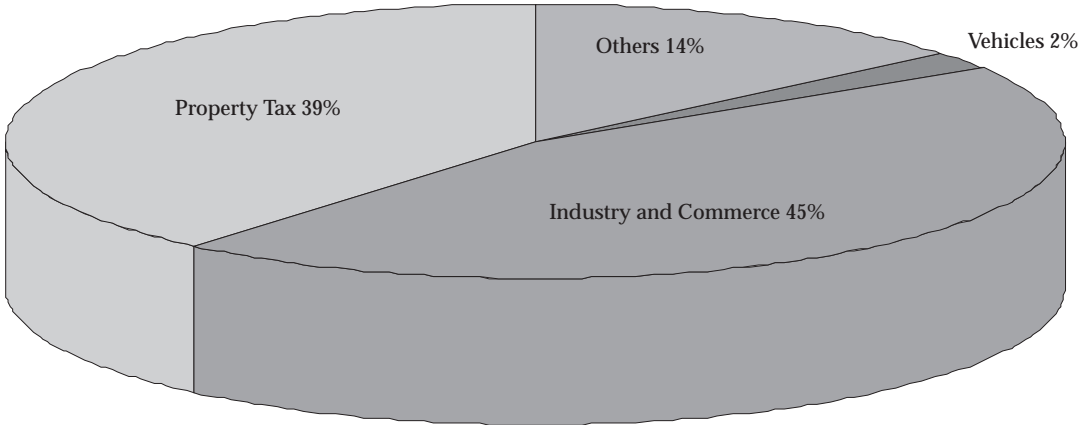


Figure 2. Municipal Tax Composition



Soruce: Calculations Authors.

Table 2. Distribution of Taxes (Projected values, 2000)

	Amount (billion Pesos)	Share
Local	4,682	19.8
National	18,933	80.2
Total	23,615	100

Source:

3. The specific Arrangements: Transfers

The basic workings of decentralization, with respect to the transfer of resources from the central to the regional governments, are contained in Law 60 (1993)⁶. There are three types of regional governments: departments (32), special districts (3), and municipalities (1080). Transfers are defined as a function of the Central Government's current revenues and allotted according to the nature of each regional government. According to articles 356 and 357 of the Constitution, and to law 60, transfers must increase from 26 in 1990, to 46 in 2002. However, see below for proposed changes to this rule. Transfers are divided into three categories: (see Table 3).

- The Situado Fiscal, SF, which is transferred to the 32 departments and the 3 special districts. The SF has risen from 13.8 of current Central Government revenue in 1990, to 24.5 at present.
- The "municipal participation" MP which has its origin in the transfer of the value added tax. MP outlays have risen from 12.2 of current revenue in 1990, to 21 at present and 22 in 2001, producing companies (oil and coal account for the bulk of resources). According to Law 141 (1994) which implements Articles 360 and 361 of the Constitution, the revenue from royalties is divided as follows: 47.5 are transferred to the departments where the minerals are produced, 12.5 to the producing municipalities 8 to municipalities where ports operate and 32 to a Fund (The National Royalty Fund, FNR). The total amount of royalties distributed in 1999 represents about 7 of current revenues.

Table 3. Rules

	Departments	Municipalities
How much is transferred?	24.5% of Current Central Government Revenue	20% of Current Central Government Revenue
With what criteria?	Formula with 4 components (per capita expend. (82%), equal share 15%)	Formula with 10 components (fixed 15%, % poor (31%), UBN (15%))
To what purpose?	60% Education 20% health	30% education, 25% health 45% other social expenditure

Source:

⁶ Law 60 of 1993 summarizes the state of the art in regard to transfers and consolidates all previous legislation. Previous legislation is made up of two pieces, each dealing with one sub national government (departments -or states- and municipalities). These are: Law 46, 1971, which introduced the "Situado Fiscal", or transfers to the Departments, and Law 12 of 1986 that regulated the participation of municipalities in the value added tax.

4. How are the Resources Allocated?

a. *The Situado Fiscal*

The SF (transfers to departments and special districts), is divided into two parts. The first part (15) is transferred by equal shares to each of the 32 departments and three special districts. The second part (85) is allocated according to the following rules:

- Each departmental and special district receives a share, which is a function of "current" targeted population, (i.e, the number of students in public education and the number of patients in the health care system). This accounts for 82.8 of the total SF resources transferred.
- In addition, these local governments receive resources according to "potential" users of the education and health care systems (i.e school-age population lacking school and population not in the social security system). These resources account for 2.2 of total SF transfers.
- Lastly, these governments receive some resources as a function of their "fiscal effort", roughly defined as their ability to raise revenue locally. This accounts for a tiny 0.02 of total SF transfers.

b. *The Municipal Participation*

In the case of the MP transfers to municipalities, the rules are very complex. Firstly, the total amount that is to be transferred (22 of total Central Government revenue in 2002) is divided into two portions. The first portion is called «special allotments» and encompasses about 6.7 of the total. These resources are transferred on a special basis to small municipalities (4.2), Indian reserves (1.3) and other minor components. The remaining portion of total transfers are transferred according to the following components:

- 40 of this total is transferred as a function of population living under «unsatisfied basic needs».
- An additional 20 is transferred according to the municipalities relative standing (Vis a Vis national averages) with respect to poverty.
- Another 22 is allocated according to population size.
- The last 18 of this portion of MP transfers (16.5 of total) is a complex mix of several components that attempt to introduce efficiency criteria. One third is allotted according to "fiscal" progress (per capita taxation), one third to "administrative" progress and one third to "performance" in generating gains in quality of life.

c. *The Royalties*

The Central Government imposes a tax on the production of oil and coal and then transfers the receipts to the regions. Royalties are divided in four parts: i) 47.5 go to the departments that produce the mineral (oil and coal account for well over 95 of the total), ii) 12.5 to the municipalities that produce it, iii) 8 to the municipalities that act as ports and iv) 32 to the National Royalty Fund (FNR). The total amount of royalties represent around 1 of GDP.

There is an important caveat. In an attempt to distribute resources derived from "extraordinary" outputs of oil more equitably, these rules apply only up to certain ceilings in production levels. From then on, the share of resources that are transferred diminish substantially. In the case of transfers to the oil producing departments, transfers are the established 47.5 when production does not exceed

180 thousand barrels per day. After that, transfers fall to 10 (for production levels that reach 600 thousand and to 5 after that. In the case of transfers to municipalities, on the other hand, transfers fall from 12.5 to 10 for production levels in excess of 100 thousand barrels/day. The residual is allotted to the FNR (65) and to non producing departments in the same region (in the case of transfers to departments). In the case of municipalities, 60 of the residual goes to the FNR and the rest to non-producing municipalities in the same department. Table 4 shows the current amounts of the three types of transfers.

5. How are the resources spent?

Rigid rules establish how localities can spend the transfers received by the Central Government. In the case of SF, 60 of transfers must be spent on education, 20 on health and the remaining 20 is discretionary. For municipalities, 30 of the MP resources must be spent on education, 25 in health, 20 on water and sewage projects, and the remaining 25 on other projects that Law 60 contemplates (see Table 3).

Finally, in the case of R the basic issue is the allotment of the resources that are transferred to the (non-mineral producing) regional governments by the FNR. The Law is quite «loose» on this front, the important point being given by the idea that these resources should be spent in investment projects. There is no specific rule such as those that govern expenditures of the other types of transfers. Overall, then, about 80 of all transfers are allocated by rules to education and health expenditures.

A related problem concerns the confusing division of labor between levels of government on spending programs. Table 5, reproduced from Echavarría, Rentería and Steiner (1999) highlights the complex web of responsibilities of different levels of governments. In health and education (where most of the money goes) the three levels of government interact in ways in which are far from clear and transparent. Despite the fact that the 1991 Constitution seemed to imply that health and education spending had to be delegated to localities, the Central Government retains much responsibility in this area as well.

The confusing allotment of expenditure responsibilities has been highlighted as a substantial problem by several authors⁷. On the one hand, educational and health institutions receive their funding from too many sources and, on the other, there is no clear way to make anyone really accountable for quality. In the case of education, the process is the following.

Table 4. Compositin of Transfers 1995-1999 (Billions of pesos)

	MP	SF	R
1995	1.2	1.7	0.4
1996	1.6	2.3	0.6
1997	2.0	2.7	0.9
1998	2.6	3.3	1.0
1999	3.0	3.6	1.0
Average Growth	17.0	21.0	27.0

Source:

⁷ For example, Castañeda. T. (2000), Garay (1995) and Wiesner (1997).

Table 5. Allocation of Public Expenditure Decisions

Public service	Amount	Structure	Execution	Supervision
National Defense	N	N	N	N
Natural Resources (Oil)	N	N		N
Education				
Elementary	N,D,M	N,D	N,D,M	N
High School	N,D	N,D	N,D	N
Universities	N	N	N	N
Health	N,D,M	D,M	N,D,M	N
Housing	N,M	N,D,M	M	M
Hospitals	N,D,M	N,D,M	N,D	N
Water Service and Sewerage	M	M	M	N
Public Transportation	M	M	M	M
Streets	M	M	M	M
Waste Disposal and Cleaning	M	M	M	N
Public Lighting	N,M	N	N,M	N
Highways	N,D	N,D	N,D	N,D
Telecommunications	N,M	N,M	N,M	N
Ports	N,M	N,M	N,M	N

Source:

- The central government transfers resources to the regional governments.
- The departmental government spends the educational portion of this money paying some of the teachers and transferring the rest to the school.
- The municipal government spends this money paying another group of teachers, building infrastructure and transferring the rest to the schools.
- The school, then, receives money from two different sources and has little say in the hiring, firing and salaries of its teachers.
- In the case of health, matters are even more complex.
- The central government transfers resources to the departments and municipalities.
- The departmental government spends the health component of these resources (tightly defined, as discussed above) in two ways. First, a share goes to the hospitals directly. Second, another share goes to institutions that manage demand based expenditures.
- The municipal government spends the money in the same manner: some goes to hospitals directly, the rest to the EPS that manage demand.
- Additionally, the central government also spends additional money on the hospitals.
- Any given hospital, at any particular time, receives funds from two different sources: the regional government and the EPS. The EPS, on the other hand, gets its money from three sources: the central, departmental and municipal governments.

Obviously, this system leads to frictions and duplicating functions, low accountability, and waste of resources.

6. Debt and Deficits at the Regional Level

Regional governments in Colombia may (and actually have) run large budget deficits. The Government is currently estimating that, as a whole, the regional governments will run a deficit of 0.7 of GDP in 2000, up from 0.4 in 1999, equal to 26 of total local taxes. Obviously, this number underestimates the

effect of decentralization of the fiscal imbalances, since much of the central government budget deficit is due to the increasing transfers to localities. The stock of debt grew rapidly since 1992, in the context of a more general credit boom, which doubled the size of the banking sector balance sheet (in real terms) between 1992 and 1997 (see Table 1). A rule, established in 1986 stated that regional governments were creditworthy when debt service did not exceed 30 of current income. The constraint was made much softer as the decentralization process proceeded.

Law 358 of 1997 defines the concept of operational savings as the difference between current income and current expenditures, net of interest payments. It then defines three types of circumstances in which a particular regional government may find itself, according to the ratio of interest payments to operational savings (see Table 6). The first, when the ratio of interest payments over operational savings (i / OS) is less than 40, while at the same time the stock of debt is less than 80 of current income. Under these circumstances, the regional government is allowed to borrow without any Central Government intervention or monitoring. This is called "green light" status. The second scenarios is when the $[i / OS]$ ratio lies somewhere between 40 and 60 while at the same time the stock of debt is less than 80 of current income. Under these circumstances -dubbed yellow light status- the regional government can autonomously negotiate debt contracts but must obtain authorization from the Ministry of Finance or from the Governor of the department, in the case of municipalities in order to do so. The third and last possibility is that the $[i / OS]$ ratio is greater than 60, and the stock of debt exceeds 80 of current income. Under these conditions, the regional government cannot autonomously negotiate debt contracts and must submit an adjustment program to the Central Government. This circumstance is dubbed red light status.

Overall, this system of warning lights is relatively relaxed, since the red light status is reached only when the fiscal situation is in rather critical shape. One may argue that while the stock of existing debt is a good indicator of the state of local public finances, the ratio of interest payments over savings may be too volatile as an indicator. Short run (perhaps cyclical) fluctuations in the denominator may generate large swings in this indicator. Table 7 shows the relationship between interest payments and operational savings between 1997 and 1999.

Decree 2187 of 1997 establishes that in terms of risk weights, banks must value all regional government debt at 100 if it is in green light status and at 130 if in either yellow or red light status. In 1998, in the midst of financial turbulence affecting many regional entities, the Central Government took a step back and set the weight at 100 for regional governments in yellow or red light status, provided they had a "program" of adjustment spelled out. Furthermore, in the case of loans that are guaranteed by the Central Government, the 1998 decree stipulates that the guarantee may be written off the relevant weight.

The results are worrisome. As of 1997, out of 27 departments for which data is known at this writing, 18 (67) are in red light status and a further 8 are in yellow light status. A total of 56.2 of departmental debt as of 1998, is in red light status. In the case of municipal debt, 28.7 (0.4 of GDP) was in this situation.

Table 6. The "Warning" Rules

Variable	Green light	Yellow light	Red Light
Interest/Operational Savings	< 40%	40% < 60%	> 60%
Stock/Current Income	< 80%	< 80%	> 80%

Source:

Table 7. Interest Payments a Fractions of Current Saving

Type	1997	1998	1999
Departments	84.7	147.0	-50.0
Municipalities	49.2	45.7	56.5

Source:

The Central Government has bailed out regional governments and, at least, a portion of the regional government debt that is in red light status may well be subject to bailout, furthering the moral hazard problem. Indeed, the Central Government has a program, with a capital totaling US\$72 million granted by multilateral agencies, known as the PASFFIET (loosely translated, it is the "program for the support of fiscal enhancement and institutional strengthening of regional entities") which was activated in 1993 in the bailout of two departments under severe financial stress. Since then the Central Government has received a continuous flow of requests for bailouts.

C. Efficiency in the Provision of Public Services

A very important point in the discussion of the decentralization process in Colombia is whether the provision of social services (especially in health and education) has improved with decentralization. A thorough examination of the efficiency level in the delivery of health and education would require an entire volume in itself. We cannot even begin to provide a complete treatment of this matter.

The chapter on the provision of social services (Perotti (2000)) argues that the almost exclusive concentration of spending in health and education has failed to tackle problems of extreme poverty. Welfare spending is for the very poor chaotic and broken down in myriad of small uncoordinated programs. Spending on education is almost exclusively used to pay salaries (and pensions) for teachers. This is relatively normal, but the regional distribution of teachers and their productivity has been widely questioned, as the chapter on public employment makes clear. In other words, it would seem that, given limited resources to combat extreme poverty, it is not clear that the marginal benefit of a tax dollar spent on education, is higher than the benefits of other programs. However, the rigidity of the parameters setting nationwide standards for salaries and pensions of teacher, combined with rules about spending shares of transfers to local governments, make it very difficult to alter the composition of local spending.

D. Summary

- Decentralization, a process that was occurring gradually since at least the early 80s, is accelerated notably by the 1991 Constitution.
- Decentralization is set up within the framework of centralized taxation (80 of all tax revenues are national) and then a system of transfers, currently encompassing well over 42 of all Central Government current income.
- Transfers are governed by a tight set of rules that heavily underweigh incentive schemes.
- Expenditure of these resources, which currently represent about 5.4 of GDP, is governed by a tight set of rules that seek to enhance the quality of social spending (education and health). It is highly questionable whether these rules, and, more generally, the process of decentralization has indeed increased efficiency.

- Regional governments have run large deficits and have accumulated substantial amounts of debt. Issues of bailouts are the forefront of the discussion.

III. Fiscal Federalism: Issues and Problems

A vast literature has studied the optimal arrangement concerning the fiscal relationships between level of governments. In what follows in this section, we highlight a few points, which are especially relevant for Colombia.

A. Which Level of Governments Should do What?

Consider a country subdivided in several regions. A few public functions clearly belong to the Central Government. One is the redistributive function across regions, which can be achieved in a variety of ways. A second one is national defense and the provision of law and order, where economies of scale are critical. A third one is the implementation of projects for which separate regions acting alone could not internalize externalities. Beyond these important tasks, everything else could (in principle) be delegated to sub-national levels of governments in our example the "regions". The regions themselves could also choose to delegate various functions to sub-regional levels of governments, say municipalities. The motivation for this system of delegation is that the smaller the size of a jurisdiction, the more tailored to individual preference policies can be, at least in principle.

There are however, limits on how small a jurisdiction can be because of economies of scale in the production of public goods. For instance, even though a street lamp serves only one section of a street, it would be costly and inefficient to delegate the function of street light provision to communities of the size of a few houses. Thus, economy of scale and administrative costs pose limits on how small a jurisdiction can be. The "theory", however, has to face reality. Especially in a middle income country with large regional inequalities, local governments (especially those in poor regions) may lack the technical competence to carry out efficiently complicated tasks. Corruption at the local level may be at least as widespread than at the national level and often even more so. Also, an imprecise definition of goals and functions may lead to a multiplication of agencies doing the same things, adding waste and confusions.

B. Who Should Tax?

Two very different arrangements are feasible and occur in practice. In the first, revenues are collected nationally, distributed through some formula to the regions, and the latter administer the spending. The other arrangement is one in which taxes are collected locally and regions can tax and spend as much as they want. In reality, most arrangements are in between these two extremes.

The first system has the disadvantage that if appropriate rules are not set, the localities do not internalize the fiscal costs of their spending programs, since revenues are raised nationally. This point has been widely discussed in the academic literature, with specific reference to the organization of legislatures⁸. The idea is that locally elected politicians can channel spending toward a geographically

⁸ See Weingast, Shepsle and Johnsen (1981) for an early contribution, Alesina and Perotti (1999) for a survey, and Milesi-Ferreti, Rostagno and Perotti (2000) for recent empirical evidence.

specific area, while taxes are collected nationally, there is a tendency to overspend. The reason is that a politician with a geographically defined constituency does not fully internalize the costs of a project that benefits only his constituency, because taxes are levied nationally. This is an example of the idea of «concentrated benefits/diffuse costs» that leads to sub optimal policy choices. A similar argument applies to regions, if the latter can spend, but do not collect taxes, and it is especially critical (as we discuss below) if localities can run budget deficits. As we have described in Section II, the Colombian case is very close to this extreme since almost all revenues are collected nationally.

While the first system has the disadvantage of creating skewed incentives toward spending and deficit, the second system has shortcomings too. In particular, it does not allow for explicit cross-regional redistributions. In addition, national governments may have a comparative advantage in tax collection and tax administration, particularly in developing countries where poor regions may have very inefficient local administrative units.

C. Simple rules

In order for the system of vertical transfers to function efficiently, all its underlying rules must be simple and transparent. Rules mandating transfers on the basis of variables that are difficult to measure and/or vary substantially from year to year, are prone to generate arbitrary decisions, to generate perverse incentives for regional authorities and to reduce the reliability and fairness of the system. This is even truer for rules based on contingencies that are difficult to verify.

Complicated rules that attempt to use decentralization in order to achieve a multitude of goals, that are unstable and that are based on the measurement of too many contingencies are self-defeating in the sense that they do not generate the desired outcomes. For instance, Colombia's complex set of rules has led to wide ranging differences in per-capita public expenditure in health and education: per capita expenditure in education in Bolivar, for example, is less than half of that observed in Cundinamarca and about one fourth of that observed in San Andres.

D. Should Local Governments be Allowed to Run Deficits?

The chapter on fiscal institutions (Ayala and Perotti (2000)) has highlighted the pros and cons of balanced budget rules for national governments. Arguments against it include the necessity of using deficit and surpluses as a "buffer stock". Therefore, imposing a balanced budget rule at the national level would interfere with the implementation of an intertemporally optimal fiscal policy. On the other hand, a vast literature has emphasized how political incentive may lead politicians toward running excessive deficits.⁹ A balanced budget rule, if enforced, may reduce this problem. Thus, one would have to trade-off the costs of lack of flexibility of fiscal policy, with the benefits of lower political distortions.

An argument against balanced budget rules is that they may create incentives to engage in creative accounting practices to circumvent them. In many cases, including Colombia, lack of transparency of the budget is often the main problem of fiscal institutions and procedures.¹⁰ If one consider muni-

⁹ See Alesina and Perotti (1995) for a survey.

¹⁰ This point is convincingly made by the chapter on fiscal institutions, Ayala and Perotti (2000).

icipalities, additional arguments weigh in favor of balanced budget rules. Localities know that they will be bailed out by the center, and that, somehow the costs of excessive deficits will be spread out over the entire country.

The bottom line is that in many of the arguments, which suggest that a balance budget law for the national government may not be a good idea, do not apply to local governments. On the contrary, localities have specific incentives (that national governments do not have) to run excessive deficits. For these reasons, one should look favorably to laws that prohibit or severely limit the ability of local governments to borrow.

The evidence drawn on countries, which have these type of laws is comforting. A particularly interesting case is that of the US, where different states have different regulations and laws about whether or not they can ran deficits. That is, some states have a stringent balance budget law, some have looser laws, other have none. A vast literature has shown that states with stringent balanced budget laws have had a superior fiscal performance, in terms of having stable finance and no deficits.¹¹

IV. Proposals

Our discussion is divided into 4 issues:

- The amount of resources that ought to be transferred and the rules used to assign a transfer to each regional government.
- The rules that should govern how the transfers are spent by the regional governments.
- The manner in which debt and deficits at the regional level should be regulated.
- The issue of accountability for regional government, in particular the possibility of re-election of mayors.

A. How Much Should be Allocated?

The discussion of how far to push decentralization in Colombia is very important. Some commentators argue that decentralization has gone too far, has caused fiscal imbalances and has delegated complex tasks to localities that do not have the technical expertise to implement them.

A recent government proposal reflects this preoccupation and implies a moderate reduction over time of the share of transfers to localities. In fact, this proposal calls for an increase of 1.5 percent per year in real terms of these transfers, so if real GDP growth is higher than 1.5 percent, the share of transfers over GDP will decline. Especially if growth is high, this change of policy may lead in the medium/long run to sizeable reduction, as a share of GDP, of the amount transferred to localities. This shift in policy is the result of a preoccupation that decentralisation has gone too far, and that regional governments are transmitting fiscal stress to the center. The real problem, in our view, is not «how much» it is transferred to localities (say 30 percent of tax revenues rather than 40), but «how» these transfers occur and to what incentives they are associated. That is, more than the size of the transfers, we feel that the way in which fiscal responsibilities are allocated is the source of the problem. Thus, more than on the size of the programs we focus on the way they are allocated and spent.

¹¹ See, for instance, Poterba (1994), Alt and Lowry (1994) and Alesina and Perotti (1999) for a survey.

B. How Should Resources be Allocated?

A good allocation rule should have three goals i) it must be simple; ii) allow some redistribution from rich to poor regions; iii) create incentives for efficient local tax collection.

Often these goals may conflict with each other. For instance, a possible system is to link transfers to the performance of localities in terms of their output (i.e the quality of local public goods). This idea has excellent incentive properties; However, it may be very complicated to implement, even in an OECD country, and even more so in a middle income country. How can one verify, say, the quality of education provided in different municipalities? Or the purity of water? Or the health services provided? Difficulties in implementation of output-based rules seem prohibitive. In fact with the possible exception of New Zealand and the UK, this type of system is almost non-existent even in OECD countries. In principle, one should try to extend the use of these schemes. However, they seem rather unrealistic for today's Colombia. Rather than devoting a lot of intellectual energy in coming up with the perfect scheme, it is worth trying to be realistic. For instance, a system of "matching grant" may be more feasible.

A similar point applies to criteria for redistribution. Ideally, an interregional redistributive system may try to take into account a complex set of indicators that identify relative poverty, relative income and relative use of public services of targeted populations. However, excessively complicated rules may increase abuse of the system, corruption and lack of transparency.

1. Basic Principles

Currently the rules that allocate funds to department and municipalities are very different. It is not obvious why that should be the case. We think that uniformity of allocation rules, compiled with more flexibility on the spending side may increase transparency and make localities more responsive to local needs.

The rules for allocation of transfers to localities are, overall, quite complex and not very transparent, particularly in the case of MP and R. These rules seem to be trying to achieve a multitude of goals, creating confusion and leading to undesirable outcomes, such as an unjustifiably large regional dispersion of per-capita expenditures. Our proposal would lead to a drastic simplification of the allocation rules. The rules should be based on three simple components:

- A fixed percentage of the region's contribution to total national government current revenue.
- A redistributive component, flowing from rich to poor regions, whether relative richness and poverty are measured by income per capita.
- An efficiency component linking the regional government's taxation effort to transfers.

In our proposal all additional elements currently contemplated, and discussed in section II, disappear, as does the distinction between MP and P.

Our proposal can be sketched as follows: Define T the total amount transferred to all regions. Currently, this amount is equal to 46 of current revenue and the governmental proposal would define it as a given real increase over the previous year. Each regional government (j) received transfers equal to $R(j)$ that are a fraction of total transfers.

$$R(j) = A(j)T$$

The proposal is the following: $A(j)$ is the sum of three factors:

- A fixed percentage of the region's contribution to total national government current revenue $b(j)$;
- A redistributive component;
- An efficiency component linking the regional government's taxation effort t to transfers $d(j)$.

The share that regional government j receives out of the total transfers is thus:

$$A(j) = b(j) + c(j) + d(j)$$

2. The Fixed Percentage ($b(j)$)

The first part of our proposal consists of establishing the fraction of fiscal revenues collected in each department or municipality. This evaluation delivers the baseline for allocation of fiscal transfer to each department and municipality. In other words, if a region contributes b percent to the total tax revenues, the baseline should be that it receives b percent of the total transfers.

The motivation of this fraction is simple. Suppose that each locality were identical. Then each locality should get back from the government an equal amount, proportional to the (identical) revenues raised in each locality. Obviously if this were the only component, then each locality might as well collect and use its own revenues. However, this does not quite follow, if the central government has a comparative advantage at raising revenues.

Taxes make up almost 85 percent of government current revenues. There are two ways of calculating the contribution of each region to the national tax pool. One is to look at national data and establish how much of the income taxes and value added taxes (the overwhelming majority of all tax revenues) are collected in each region. These computations are far from trivial. Consider an exporter operating in a coastal region whose main office is in Bogota. In which region should his tax revenues be accounted for?

The second approach starts from information about local tax collections. The share of local-level taxes collected in any particular region within total local-level taxes collected is a good proxy for its share in total national-level taxes collected. Say, for instance, that all local taxes collected in the country amount to \$100. Then one proxy for each region's contribution to national taxes would be the share of the \$100 that is collected by each specific regional government. This would be a mistake because regions differ in the amount of effort that they exercise in collecting taxes. The correction that we introduce is to estimate what the "normal" effort is in each region. To do it, we regress local taxes to local population and assume that "normal" effort is given by the regression line. Explicit calculations are shown in the Appendix 1.

One serious criticism would arise if local taxes reflected the composition of output. Differences in the ratio of each region's local tax to the national total would then be linked not to effort, but rather to output composition. Regions where low-tax activities are dominant would exhibit lower ratios. However, since local taxes are essentially property taxes and consumption taxes, we feel that the procedure does not produce results that have this damaging bias. It is true that this system would "punish" regions that are intensive in the production of activities that have low tax rates (such as agriculture) and "privilege" the regions intensive in highly taxed activities (such as oil). This is the reason why we include the two other criteria, in particular the redistributive one.

A third and even simpler criterion would be to set $b(j)$ equal to the fraction of the region j 's share of total national GDP. Again the problem is the data: municipal level GDP is not calculated and must be estimated in order to make the scheme operational.

3. The redistributive component, c(j)

Having obtained the fixed proportion allocation, implicitly assigning transfers as a function of the contribution of each region to the national totals, the second task is to redistribute from rich to poor regions.

Our proposal is to define a zero sum reallocation of resources wherein resources are "taken" from departments in which income per capita is above the median and "given" to regions where income per capita is below the median. A similar system can be applied to municipalities, although the computation for this level of government may be more problematic. The size of this redistribution is a political decision. The point we want to make is that this zero-sum system of redistribution should be clear and transparent.

a. Departments

GDP data for the department is available only until 1995. This is not a big problem, since there is little reason for one to expect substantial change in 5 years. However, statistical agencies should increase their effort to produce and disseminate more up to date local information.

Table 8 shows our calculations. The first column shows the department. The second and third columns show, in each case, the percentage deviation of the departments' per capita gdp with respect to the national median, respectively, for rich and poor regions. Bogota, for instance, has per capita

Table 8. Redistribution of Transfers: Departments

Dept	%devp	%devm	levyplus	levymin	%plusgdp	%mingdp	adjustedp	adjmin
Amazonas	2.89	-	0.20	-	0.45	-	1.74	-
Antioquia	0.38	-	0.03	-	19.09	-	9.76	-
Arauca	0.61	-	0.04	-	0.48	-	0.39	-
Atlántico	-	(0.18)	-	0.04	-	14.70	-	12.73
Bogotá	0.96	-	0.07	-	32.42	-	41.93	-
Bolívar R.	-	(0.12)	-	0.02	-	12.79	-	7.17
Boyacá	-	(0.09)	-	0.02	-	11.36	-	4.94
Caldas	0.15	-	0.01	-	3.33	-	0.68	-
Casanare	4.38	-	0.31	-	3.04	-	17.92	-
Cauca	-	(0.33)	-	0.06	-	6.38	-	10.01
Cesar	-	(0.27)	-	0.05	-	4.63	-	5.96
Chocó	-	(0.58)	-	0.12	-	1.35	-	3.79
Córdoba	-	(0.46)	-	0.09	-	5.94	-	13.13
Cundinamarca	0.51	-	0.04	-	8.29	-	5.71	-
Guainía	-	(0.63)	-	0.13	-	0.04	-	0.13
Huila	-	(0.02)	-	0.00	-	7.87	-	0.69
La Guajira	0.39	-	0.03	-	1.53	-	0.80	-
Magdalena R.	-	(0.33)	-	0.07	0.00	6.62	-	10.54
Meta	0.62	-	0.04	-	2.61	-	2.16	-
Nariño	-	(0.46)	-	0.09	-	6.04	-	13.32
Norte de Santander	-	(0.26)	-	0.05	-	6.56	-	8.19
Putumayo	-	(0.39)	-	0.08	-	1.04	-	1.96
Quindío	0.59	-	0.04	-	2.14	-	1.71	-
Risaralda	0.12	-	0.01	-	2.75	-	0.46	-
San Andrés	1.56	-	0.11	-	0.03	-	0.00	-
Santander	0.12	-	0.01	-	5.65	-	0.92	-
Sucre	-	(0.58)	-	0.12	-	2.56	-	7.22
Toima	-	-	-	-	-	11.98	-	-
Valle	0.65	-	0.05	-	18.16	-	15.82	-
Vaupés	-	(0.34)	-	0.07	-	0.14	-	0.24
Vichada	0.23	-	0.02	-	0.04	-	0.00	-
	14.18	(5.03)	1.00	1.00	1.00	1.00	1.00	1.00

Source:

income 96 higher than the median, while Sucre has per capita income 56 lower than the median. The fourth and fifth columns present the following calculation: out of the total deviation from median, how much is explained by the deviation in this particular department? In the case of the rich departments, for instance, the total deviation from median sums 14.2, of which 20 are explained by the deviation observed by Amazonas. In the case of poor departments, the sum is 5, of which 33 are explained by Cauca, for instance. These calculations, however, do not take into account the size of different departments. The fifth and sixth columns show the percentage of total rich and poor regions GDP, explained by each department. Rich department's output adds up to about 75 of total GDP and column 5 shows what percentage of this subtotal is explained by each rich department.

The last two columns derived in the following manner. In the case of rich regions, we weigh relative richness by size. In practical terms, we multiply column 4 by column 6. In the case of poor regions, we also weigh relative poverty by size, multiplying column 5 by column 7. This gives us a number that levies a larger surcharge for relatively richer regions, but also takes into account the fact that there are size differences among regions.

Our proposal is the following. We start from the numbers that we calculated in the previous subsection. Departments are divided into two groups, poor and rich according to the previous table.

- We add up the total «fixed proportion» [b(j)] transfers in the case of the rich regions. This gives us the base upon which we then estimate the total amount of resources which will be redistributed to the poor regions.
- We assign a percentage of total rich region's a(j) transfers, say 10, to redistribution. This is made up of the sum of all positive deviations from the median. This gives us specific amount of money that will be redistributed. Each rich region contributes to the total fund as a proportion of their transfers. The figures produced in the table correspond to the case in which redistributions amount to 10 percent of total transfers to the rich regions.
- We then impute a "levy" on each rich region's fixed proportion transfers according to the calculation above. Rich region x will contribute to the fund that will be redistributed according to its contribution to the sum of all positive deviations from the median. For example, Antioquia would contribute 9 of the total fund.
- We similarly assign these resources to the poor regions according to their standing, shown in column 6. For instance, Atlantico would get 12.7 of the total fund. An interesting and valuable feature of this system is that it makes very transparent the amount of redistributions. Changes in how redistributive the system is would be summarized in one parameter, b.

4. The efficiency component (d(j))

Transferring a certain percentage of total funds in proportion to the regions own efforts has several desirable features, most prominently:

- It punishes regions that fall behind in tax efforts and encourages regions that make advances in this respect.
- It is an incentive for the population to monitor performance and punish bad administrators.

The problem is this: the ratio of transfers to local taxes has been increasing in departments and falling in the municipalities (see Table 9). While all regional governments have access to the same

Table 9. Ratio Transfers/Local Taxes

Type	1997	1998	1999(P)
Departments	51.4	58.7	62.6
Municipalities	30.0	27.7	24.5

Source:

taxes, this reveals an incentive problem that is not given much weight in the current setting.¹² One could create a fund, which allocates a certain amount of transfers in proportion to the fiscal effort of different departments and municipalities.

- Define a desired degree of incentives, as a percentage of T. Suppose this amount is 10 of T.
- This sum would be collected lump sum, i.e. every region would contribute 10 of its estimated transfers (after adjusting for redistribution) and a fund would be formed.
- The fund would distribute resources in zero sum manner. The median "effort", measured as a deviation from the regression that we used above, divides the sample into two groups, and transfers would occur from the fiscally "lazy" to the fiscally "active" regions.

The appendix shows estimates of local effort along with our estimates of «normal» effort. The proposal is to use this data in order to calculate a zero sum incentive scheme which rewards regions that are fiscally active and punish regions that are fiscally lazy. Each region would contribute (say) 10 of its total transfers into the fund and would then draw from the fund according to its relative standing in the effort scale. A very active region (the effort measure is positive) could draw more than the 10 it contributes and a very lazy region would be «taxed» and could conceivably end up not drawing anything from the fund.

C. How should expenditure be regulated?

The current system tightly regulates how localities can spend the transfer that they receive. Leaving a larger margin of discretion in local allocations may create a better matching of spending to local needs. More discretion may generate more arbitrariness and corruption in the allocation of spending, even though the latter can certainly find its way even in the current system. By allowing a larger margin of discretion, local politicians may face more incentives to deliver "good policies" particularly if they are accountable to the voters. An important related point concerns the definition of "poverty" and "needs". We have summarized in one indicator, income per capita, our measure of "poverty". Even with the same level income, different departments and municipalities may face very different needs depending on characteristics of the populations, geography, economic structure etc. Rather than trying to allocate transfers based on these features and then channel spending with rules, we suggest to let each locality decide how to spend. Thus, simplification of transfer rules go hand in hand with more flexibility of spending. In other words, take two "poor" departments. In one, low enrolment rates and poor quality of education may be the problem. In the other, extreme rural poverty may be the more pressing issue. The latter may prefer to spend less in education than current rules permit.

¹² Wiesner, E (1995) emphasizes this problem and calls for the introduction of more incentives.

In fact, currently localities are bound to spend a very large fraction of their revenues on health and education and there is evidence that this is not efficient (Perotti, 2000).

A related problem concerns the allocation of responsibilities on the spending side between central and local governments. As we have mentioned, all levels of governments participate in social expenditure, duplicating functions and making the system non-transparent. There are two polar possibilities that may resolve the problem. Take the case of education. The first possibility is to bypass regional governments altogether and allocate the funds directly at the schools (some 60,000 all over the country). The problem is that monitoring is crucial and not very easy in such a centralized system.

The second possibility is to have the regional governments implement a decentralisation of their own by allowing them to design rules that allocate funds to the schools. The amount of transfers that they receive would be based on the rules outlined above, but the decisions as to how to allocate them among different expenditure programs would be their own.

The important thing is that one and only one level of government should be involved in each function, paying teachers for instance. Concerning this particular example, it should be emphasized that to the extent that teacher's salaries are fixed nationally and since they make up 80 percent of total spending in education, there is very little discretion for departments, municipalities, and schools to tailor spending to local needs. The chapter on public employment develops this point in much detail.

D. Should Borrowing be Allowed?

On balance, the risk of allowing localities to borrow from the markets, and, in particular, from banks outweighs its benefits. Localities should be allowed to spend more than allocated every year, only by borrowing against future transfers from the central government itself. So if in one particular year a locality needs to spend more, it can "borrow" from the central government. The latter will curtail future transfers in the appropriate amount. Obviously localities are free to accumulate surpluses. Localities should not be permitted to borrow from banks or to issue bonds.

If we had to pick the one proposal which we think is the most important, this is the one. The problem of excessive borrowing of local governments from private and public banks is so obvious and critical, (not only in Colombia but in many other Latin American countries) that it is worth for the Central Government to spend much of "political capital" to achieve this goal.

An important question concerns the financing of large investment projects in infrastructures. Theoretically, one could think of allowing local governments to borrow from the markets for investment projects. In practice, this is a very dangerous idea. First, for the same reasons discussed above, localities may have an incentive to over borrow and overspend in local infrastructures.

Second, it is well known that what is defined as «investment» in public budgets is open to strategic manipulations. The chapter on budget procedures (Ayala and Perotti (2000)) shows how a disproportionate amount of spending items that should be classified as "current" are labelled investments. If this strategic mislabelling occurs at the central level, where budgets are occasionally scrutinized by international organizations, it is even more likely to occur at the local level. For all these practical and political reasons, large public investment projects should be decided and implemented by the central government.

E. Should Local Governments be Re-elected?

Two striking features of local politics in Colombia are i) the fact that mayors and governors cannot be re-elected and ii) the fact that they have a very short tenure (3 years). The motivation of this rule has to do with avoiding the entrenchment of special interests and corruption of individuals.

An active debate in the US concerns the pros and cons of term limit for governors,¹³ precisely on these grounds. While term limits avoid the entrenchment of incumbents, they may imply, however, short-termism in the behaviour of politicians and they may make it difficult to effectively implement a system of accountability with respect to the voters. In general, Latin American countries seem to have adopted very stringent and short-term limits, both for nationally elected officials and for local ones. The case of mayors and governors in Colombia is particularly striking, since a term limit of one term is coupled with a short electoral cycle. With such a very short horizon and no possibility of re-election, mayors and governors are likely to focus on short term problems, without addressing reforms and progress that may have legs in the production of results. Lengthening the term of office to four or five years and allowing at least one possibility of reappointment seems reasonable and more in line with international standards.

This proposal is especially relevant because it complements the idea that local authorities should be endowed with much more decision making ability than is currently the case.

V. Conclusions

The decentralization process of the last decade in Colombia is at the center of the political debate for several reasons. Politically, it is the battlefield for national versus local interests and political entrepreneurs. As for the efficiency in the delivery of social services, questions have been raised about how successful this process has been. From a macroeconomic point of view, the decentralization process has been a major source of fiscal imbalances.

We have used economic theory and political economy to examine some of the decentralization issues for Colombia and made several concrete proposals. The topic of fiscal federalism is an immense one, and we could not explore every aspect of it. For instance, we did not address is the structure of taxation, namely whether reforms in the tax structure may make it more feasible to increase the share of local spending which is covered by local revenues.

We focused on four issues: vertical transfers, the allocation of responsibilities in expenditure, the issue of local debt and deficits and accountability of regional authorities. The current system in Colombia is weak in all four fronts and this paper has attempted to propose ways to improve it.

¹³ See for instance Besley and Case (xxxx).

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Annexum

The calculation of the "fixed proportion" of fiscal transfers.

The first component of transfers from the central government to regional government x would be linked to region x's contribution to total national taxes, T. If all regions contributed equally, they would all get the same transfers.

One way to estimate each region's contribution to national taxes is to use the data on regional taxes collected. Roughly, all regional taxes add up to about 2.8 of GDP and is derived chiefly from consumption and property taxes. Region x's "share" of this 2.8 of GDP is our proxy for region x's contribution to national taxes.

We know the regional distribution of these resources. However, region x's share of the 2.8 of GDP includes "effort". In order to filter this out, we estimate the following regression:

$$x = a + bPOP + e$$

where POP is the region's population. The observed value is made up of two parts: the regression line and the residual. We take the fitted value as the "normal effort" and the residual as the "own effort" estimation. The sum of "own effort" should be equal to zero. Table A.1 shows the results for departments. Results for municipalities are available upon request.

Table A.1

Dept.	Actual	Fitted	Effort
1	20.26	20.76	-0.50
2	25.52	24.93	0.59
3	21.34	21.59	-0.24
4	24.35	24.16	0.19
5	26.92	25.08	1.84
6	23.89	23.98	-0.09
7	24.03	23.85	0.18
8	23.63	23.56	0.07
10	22.31	22.15	0.17
11	23.03	23.61	-0.57
12	22.81	23.26	-0.44
13	23.43	23.73	-0.30
14	25.49	24.12	1.37
15	22.04	22.67	-0.63
16	19.08	19.81	-0.73
18	23.45	23.46	-0.01
19	21.36	22.73	-1.37
20	23.26	23.64	-0.38
21	23.37	23.06	0.31
22	23.27	23.75	-0.48
23	22.64	23.55	-0.91
24	21.62	22.12	-0.50
25	22.75	22.90	-0.15
26	23.51	23.42	0.09
27	22.63	18.84	3.79
28	24.26	24.05	0.21
29	22.68	23.23	-0.55
30	23.76	23.81	-0.05
31	25.52	24.73	0.79
32	18.79	20.33	-1.54
33	19.48	19.62	-0.14
Totals	710.49	710.49	0.00

APPENDIX
DESCENTRALIZATION AND THE IMPACT OF LARGE EXPENDITURES ON EDUCATION*

Juan José Echavarría**

I. Introduction

It is widely accepted today that education has a positive and significant effect on growth, that female education enhances economic growth via its strong negative relation with the fertility rate, and that more years of school accelerate *convergence between* GDP levels.¹ That is why high rates of return have been consistently found in the area of education (mostly in primary education). The role of education will be even more crucial in the era of the "new economy" when knowledge, the Internet, and the creation and adoption of new technologies accelerate growth in quantities unknown in the past (Borensztein, et al, 1999).

We also have strong evidence on the impact of education on growth and income distribution in Colombia. According to Cardenas and associates, education explains a large part of regional growth in the country, and close to 40% of the deterioration of income distribution during the 1990s.² Fajnzylber, et al. (1997) find a strong correlation between the distribution of education (more important than the distribution of income) and violence, and some studies suggest that the quality of education varies widely in the country, being specially poor for low-income groups and the rural areas.³ We argue in the Chapter that there should be more flexibility on how regions distribute expenditure, but it is likely that education (and health) will continue receiving strong attention given its vigorous impact on growth and distribution.

It is very important, then, to present a preliminary balance of the evolution of expenditure, enrollment and the quality of education in the country. We show in Section B that expenditure increased markedly in Colombia during the 1990s, and had a large impact on enrollment. Its influence on quality is much less clear, however, as analyzed in Section C: the gap between private and public education has been widening, and expenditure is only one among many relevant variables.

Much remains to be done in those other areas. In particular, we show in the Chapter that large public expenditures could have a much larger impact if schools were better run, using more hours per day (*jornada*), with larger class sizes and more adequate administrative support. Teachers could get more incentives to work and the directors of the schools could spend less time doing tedious and unproductive work. Public schools need much more autonomy.

* This Appendix is part of a larger project financed by the Planning Department and by Fundación Corona, and will become an individual Chapter of the Project.

** Director Ejecutivo de Fedesarrollo.

¹ See Barro (1997), and World Development Report (1991, Chapter 2). On the impact of education on development see Haddad (1990). On the channels through which education contributes to growth see World Development Report (1998/99, p.40).

² See Cárdenas, et al. (1993), Cárdenas & Ponton (1993) and Cárdenas & Bernal (2000). On the determinants of the deterioration of income distribution see also Ramírez (2000) and Londoño (1990).

³ See DNP, 1999.

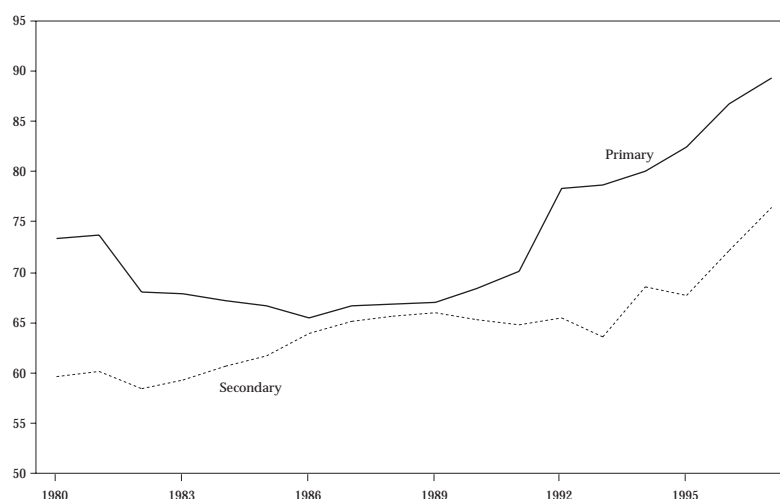
II. Expenditure on Education and Enrollment

Public expenditure in education increased very fast in Colombia during the 1990s, reaching levels higher than in the typical Latin American country at the end of the decade.⁴ That was partially due to the new Constitution of 1991, which ordered that transfers from the central government to Departments and Municipalities should increase year after year, (reaching a peak of 46.5% in year 2003) and that the regional entities should spend a large part of the transfers on education and health.⁵ But it was also produced by increasing central government expenditure.⁶

We know from the outset that not all expenditure went to hire new teachers, enroll new pupils, or increase the quality of education in the country, since it was "captured" by teachers' wages: real wages in the public sector increased 50% during the 1990s (Echavarría, 2000) and the scarce evidence available suggests that teacher' wages increased even faster.⁷ Most increases were totally unrelated to productivity, age being the main variable behind the rises.

Figure A.1 shows that net enrollment increased faster during the 1990s in primary education (though enrollment in secondary also increased fast), but figures are still lower in Colombia (89,4% in 1997) than in Asia (99%) or Latin America (94%).⁸ There is no gap when considering enrollment in

Figure A1. School Enrollment (net) in Colombia



Net enrollment is the ratio of the number of persons of official school age (as defined by the national education system) who are enrollment in school, to the corresponding official school age.

Source: World Bank.

⁴ They represented 2.5% of GNP in 1990 and 4.1% in 1996 in Colombia, compared to 3.1% and 3.6% in the average Latin American country for the same years, respectively.

⁵ Departments should spend all transfers (Situado Fiscal) on education and health; Municipalities should spend on education and health at least 55% of the transfers. Law 115 of 1994 considered that "departments and municipalities should provide a minimum standard in education".

⁶ From 0.8% of GDP in 1990 to 1.6% in 1997.

⁷ See Ayala, et al. (1999) for the case of Bogotá and Echavarría, et al. (2000) on the analysis of the relation between FECODE and teachers wages in Colombia during the 1990s. Ayala finds that teacher's wages increased 8% more than public employer's wages in each year of the period 1995-98, mainly due to changes in the "escalafón" and "pensiones".

⁸ 1997: 89.4%, compared with 94% and 99% for the other two regions).

secondary or tertiary education. Not all are good news, however, since the number of teachers hired expanded much faster than the number of pupils; the relation pupils/teacher moved from 22.7 in 1991 to 19.7 in 1996.

There is some evidence that enrollment increased even faster in poor regions. Thus, enrollment in "non capital towns" expanded at an annual rate of 12.3% between 1993 and 1998, in "capital towns" at 11%, and enrollment in the four main cities of the country (Bogotá, Medellín, Cali and Barranquilla) at 4.2%.⁹ Presumably, towns under the first two categories are poorer than the 4 main cities. A similar result appears when we divide municipalities in "rich" and "poor" according to income per capita.

III. Quality

Based on a cross-country growth decomposition regression, Judson (1998) shows that the correlation of human capital accumulation and GDP growth is not significant in countries with poor allocations but is significant and positive in countries with better allocations. This suggests that the quality of expenditure is crucial. Too often governments have invested in poor quality, done so at high cost, and failed to serve the needs of the poor or other groups whose returns to education are high.

So there is much more to policy reform than simply spending more. Many international studies show that the average result for tests in the less developed countries coincide with those of the lowest 5%-10% students in the rich countries, and this is mainly due to the poor quality of education: the curriculum matters; those plans with unrealistic requirements increases desertion; the selection and quality of teachers, and the design and distribution of didactic materials result essential.¹⁰

We do not know much about the quality of education in Colombia, but the scarce evidence available suggests that results have been rather poor. The gap with other countries is large, and the difference between private and public sector results are widening.

A. International comparisons

In TIMMS (Third International Mathematics and Science Study)¹¹ Colombia's fared worst after South Africa, both in mathematics and sciences, though no other Latin American country was included in the survey; results were relatively similar for all Colombian regions.¹²

The country did much better at Unesco (1998),¹³ partially because the number of countries included was wider, covering most of Latin America. The study concludes that the quality of education in Colombia is close to the average in the region, with very good relative results for the rural areas (specially for mathematics; only Cuba does better, and the average for the rural areas results even

⁹ Each group accounts for 54.8%, 19.7% and 25.5% of total enrollment, respectively.

¹⁰ World Development Report (1980, Chapter 5).

¹¹ The TIMSS test was conducted in 1994-95 in 41 countries, most of them at the OECD. It evaluates the curriculum, the process of teaching it, and the results achieved, in mathematics (6 topics) and sciences (5 topics) for three levels of education: pupils with 9 and 13 years of age, and the last year of secondary. See Beantom et.al (1996).

¹² Tough the best results were obtained for those departments in the Northeast and in the Center of the country.

¹³ See Unesco (1998) at <http://ns.unesco.cl>.

higher than for the urban areas). This surprisingly good result is attributed to the impact of the so called *escuela nueva*, an experiment introduced in the coffee zone of Colombia during the 1970s, with new pedagogies, active and personalized learning,¹⁴ where the pupil can go at his own speed and with enough flexibility to allow seasonal work and study. Average results for *escuela nueva* are higher than for traditional learning (DNP, 1999, p.78).¹⁵

B. The widening gap between private and public schools

Despite large and increasing government expenditure on (public) education, the evidence available suggests that the quality of private schools is much higher. Even worse, the gap between the results for private and public schools seems to be widening, and even more during the 1990s. We base those conclusions on the results of ICFES examinations for the 1980s and 1990s.

Most Colombian universities use ICFES examination as an input for deciding on admissions at the undergraduate level since 1980.¹⁶ The test has close to 500 questions in the areas of biology, chemistry, physics, social studies, language (verbal aptitude and knowledge) and mathematics (aptitude and knowledge). It covers all schools with secondary education in the country (so it is a census) a number increasing from 2563 in 1981 to 6438 in 1998. Schools are fairly well divided between public and private, with a large weight for "mixed" genders and for schools that only operate one "jornada" in the morning.¹⁷

It is not possible (yet) to make comparisons through time since the exam was designed to keep the mean constant (with an average of 50 points, and a standard deviation of 10),¹⁸ but cross section comparisons are perfectly valid. Figure A.2 presents the evolution of the average private and public school, considering only those schools, which systematically provided information during the whole period 1981-1999.¹⁹ We only considered the results for mathematics (knowledge and aptitude) and language (knowledge and aptitude) the exams more relevant for our purposes, and obtained a simple average of the four exams after checking that their individual behavior was similar.

The trend more or less coincides (something we expect, given the characteristics of the exam) but the gap has been widening, and even more during the 1990s: the difference was 3 points (53.1 vs. 50.0)

¹⁴ See *Dinero* (June, 2000).

¹⁵ This model of *escuela nueva* has been adopted by 40% of all those children in rural primary education in Colombia DNP (1999); it covers 14,000 of the 18,000 rural schools. Pilot experiments have been implemented recently in 10 Latin American countries, it has inspired educational reforms in Paraguay, Panama and Chile, and its methodology has been translated to Arab and Portuguese.

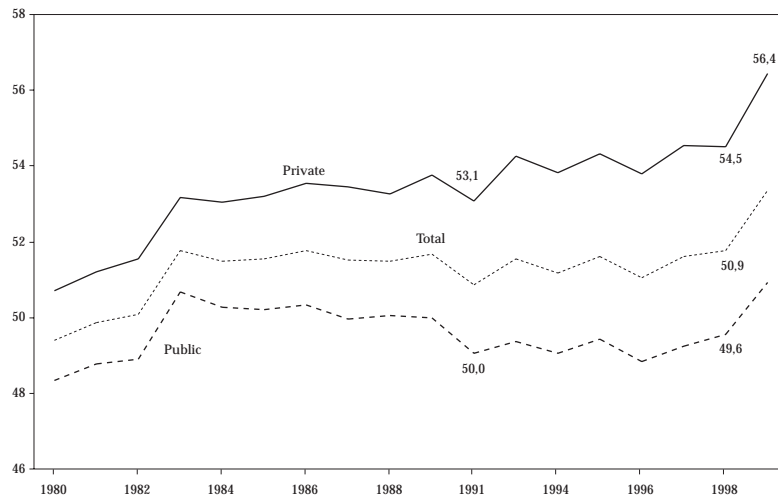
¹⁶ In 1980 the system becomes "national", though there were ICFES examinations since 1968.

¹⁷ 58% of schools and 61% of students were in public - official schools in 1997. By gender, 3.1% of schools and 4.4% of students were in men's schools, 9.6% of schools and 12.9% of students in women's schools. See (ICFES, 1999).

¹⁸ We are working and comparisons through time will be available soon, once we can «compensate» for the awkward design of the examination: If the Colombian population is "learning" and doing better through time, the level of difficulty of the exam will be raised to keep the average close to 50 points.

¹⁹ There are 7915 schools which provided information "at least in 1 year" during the whole period, 3,402 private and 4,225 public. We worked with those 1824 schools which provided information for all years: 1003 private and 821 public. The "total" line in the Graph corresponds to the average for those 1824 schools.

Figure A2. Icfes Results. Private vs. Public



For those school which provide information for all years.
Source: World Bank.

in 1991 and almost 7 points in 1998. The dominance of private schools in the top quintile is today overwhelming. Thus, for those 186 schools in the top decile of the test in 1998,²⁰ 94% were private (91% for the top quintile). The first public school comes out in place 15, and the next one in place 63.²¹

Private schools get better results partially because the socio-economic characteristics of the pupils are better (poor kids go to bad schools; rich kids to good schools according to Sarmiento, 2000) but also because the schools are better run. The number of hours per day (jornada) is larger, both for students and for teachers, the size of the school is larger, administrative support is more adequate, and teachers get more incentives to work (Caro, 2000; Ayala, et al., 1999). The director of the public school spends more time dedicated to produce reports and to get resources, to meetings outside the school, and to "solve" day-to-day tedious administrative issues.

Autonomy is very reduced in the public sector, and decisions on how many teachers should be hired, which installations should be expanded or built, and which pedagogical support is needed are not directly determined in the school, but "mediated" by the Health Secretary (*Secretaría de Salud*). This guarantees homogeneity, but also bad quality in the public sector (Caro, 2000). Public schools have teachers with more experience and years of schooling, but do much worse than private schools.

Indeed, one of the lessons of past decentralizations is that going partway—from the central to the provincial or even the municipal level, for example—may not lead to as many gains as expected. The biggest potential gains come from promoting greater control of decision-making at the school level, typically through greater involvement of parents and the broader community in school management. Evaluations indicate that when local stakeholders rather than the central government do make more

²⁰ Those schools with average result for mathematics and statistics higher than 57.77 in that year.

²¹ The dominance of the private sector seems to be robust, found in most international studies, in TIMSS, in SABER (Parra, 2000), in the analysis of those applying and accepted to the National University, and in the analysis on students in Bogotá (Sarmiento, et al. 2000). DNP (1999) argues that the variance is higher for official schools.

decisions affecting the school, and teachers feel they are better able to influence school operations, students perform better.²²

IV. Government Expenditures and the Quality of Education

We crossed the information available for those 1824 schools that provided ICFES information all years of the period 1981-98, with that of the municipalities where schools were located: GDP per capita, population, unsatisfied basic needs, the amount of money spend by the municipality on education and enrollment. We show that expenditure on education has a positive impact on quality, and that there is a wide room for improvement, particularly in poor regions. However, we do not observe an important trade off between quantity (enrollment) and quality.

Table 1 presents the results of the regression analysis at the school level. The dependent variable is the ICFES examination result (arithmetic average for the 2 scores on mathematics, and the two scores on language - see above) and the independent variables are:

- At the municipality level: Expenditure on education per pupil, GDP per capita, population, unsatisfied basic needs, enrollment growth between 1993 and 1997, and 23 dummy variables for the 24 Departments (Antioquia excluded).
- At the school level: number of pupils per class; the square of that variable; 3 dummy variables for the 4 categories considering if the school operates at day (excluded category), night, afternoon or "unique"; 1 dummy variable for the public - private (excluded) category; 2 dummy variables for gender (women excluded).

A panel data was formed for 1993-98 with 7,589 observations (1824 schools, 6 years, some records missing), and panel data regressions were run allowing random effects and (white) correcting for heteroscedasticity. We report in the Table the beta and the t coefficients. We also report the number of observations for each regression, the Wald coefficient, and the probability of significance of all coefficients considered jointly. In column (1) we included all variables, both at the school and the municipal level, in column (2) only those variables relevant at the municipal level, and in column (3) only those variables relevant at the school level.

Looking first at the results of column (1) we see that all the variables are significant at the 1% level, except the growth of enrollment, and have the expected signs in all cases. For those variables at the municipal level we see that expenditure on education has a positive effect on quality, and those municipalities with the highest scores are rich (both in terms of GDP per capita and unsatisfied basic needs) and large (large populations).

We cannot conclude, however, that some municipalities decided to increase enrollment at the expense of quality, since the coefficient of "growth of enrollment" is not significant. We also see that there are important differences between the departments that are not captured with our variables: most departments have higher scores than Antioquia (the excluded dummy) except Magdalena, Risaralda and Valle. Schools operating at day do best (and at night do worse), and men's schools do better than those for women and much better than those "mixed". For variables at the school level we conclude that quality improves with size, but with decreasing returns (since the sign of the square

²² World Development Report, 1999/2000, Overview.

Table 1. The Expansion of enrollment at the Municipalities, 1993-1998, for Schools with Complete Education (annual growth rate, exponential)

Dependent variable: Average result for Icfes, mathematics and language			
Independent Variables	(1)	(2)	(3)
Constant	51.9	52.4	54.5
Variables at the municipality level	(54.9)*	(57.7)*	(169.0)*
Expenditure on education/pupil	2.2E-03 (2.7)*	2.2E-03 (2.7)*	3.3E-03 (4.2)*
GDP per capita	3.1E-07 (2.2)*	3.3E-07 (2.4)*	
Population	3.0E-07 (3.5)*	3.1E-07 (3.6)*	
Unsatisfied basic needs	-9.0E-02 (-6.5)*	-9.8E-02 (-7.2)*	
Growth of enrollment	-3.8E-04	-3.8E-04	
D_departments, 24 dummies	2/	2/	
Variables at the school level	(-0.1)	(-0.1)	
No. of pupils at each school1	1.1E-02 (3.7)*		1.6E-02 (5.4)*
(No. of pupils at each school)2	-1.6E-05 (-2.7)*		-1.9E-05 (-4.3)*
D_"day-night etc"			
Night	-6.9E+00 (-25.3)*		-4.9E+00 (-19.2)*
Afternoon	-1.3E+00 (-4.7)*		-3.8E+00 (1.2)*
Unique	1.9E+00 (6.6)*		1.1E+00 (3.7)*
D_public vs. private, "public"	-9.8E-01 (-3.6)*		-3.1E+00 (-12.3)*
D_Gender, «men»	3.4E+00 (7.6)*		3.5E+00 (7.4)*
D_Gender, «mixed»	-2.4E+00 (-9.8)*		-2.9E+00 (-11.6)*
No.	7,589	7,589	7,589
Wald Chi^2	3,197.9	3,166.4	2482.57
Prob > Chi2	0	0	0

2/. All departments have a significant and positive dummy compared with Antioquia (the excluded category), except Magdalena, Risaralda and Valle Unsatisfied basic needs for 1985; enrollment: calculated from Icfes information on the number of pupils at the end of secondary and the localization of that school in each municipality; No. of pupils at each school: at the end of secondary education

Figures in parenthesis correspond to the t coefficient; * significant at the 1% level

Methodology: Database: panel data for 1993-97, for all schools with Icfes information for all years of 1981-97 Panel data regressions (white) adjusting for heteroscedasticity, random effect model Excluded variables for the different dummies: D_"day-night etc": morning omitted; D_public vs private, private omitted; D_Gender, women omitted.

of the variable is negative). Private schools do better and the gap has been widening. In fact, in some additional regressions (not shown) the product of the dummy variable (for public vs private) and time gives a negative and significant coefficient.

The results contained in columns (2) and (3) suggest that our conclusions are relatively robust, since most coefficients maintain their signs and level of significance. The results of column (2) are almost identical to those of column (1), though the Wald test is smaller. The only difference between the coefficients of columns (1) and (3) is that the dummy for "afternoon" is not significant. Expenditure on education is even more significant in column (3) than in (1) or (2).

A preliminary analysis of standardized beta coefficients suggests that government expenditures are among the less important variables in the explanation of quality, with much higher (standardized) beta coefficients for private - public (dummy), gender, and for the population and GDP per capita of the municipality.

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