Intergovernmental transfers and municipal finance in Colombia[*]

Fabio Sánchez[†]
Michael Smart[‡]
Juan Gonzalo Zapata[§]

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1 Introduction

For the past fifteen years, Colombia has been engaged in a grand experiment in decentralization. Since 1986, subnational government spending has increased dramatically, as the regions have assumed greater control of health and education programs and other local services, and an increasing fraction of national revenues have been earmarked for transfer to lower-level governments.

Decentralization has been envisioned in Colombia as a means to increase to improve management and accountability in government, to encourage development of local fiscal resources, and to aid in targeting social expenditures to regions and individuals most in need. In view of these objectives, the success of the reforms has been mixed at best. Subnational tax capacity remains extremely weak, and many governments ran unsustainable fiscal deficits during the 1990s. While local program spending has increased dramatically since the 1993 reforms, improvements in service quality and coverage rates have not met expectations, and there is widespread belief that corruption is endemic and local accountability poor. Finally, de-

[†]Universidad de los Andes
[‡]University of Toronto
[§]Fedesarrollo

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centralization may have contributed to the deteriorating fiscal position of the national government: more than 40 per cent of government revenues is now earmarked for the major subnational transfers,[1] leaving little room to maneuver in the current fiscal crunch.

To some observers, these problems represent not a failure of decentralization, but rather a failure to decentralize properly. Subnational tax capacities generally remain small, despite devolution of expenditures, and so transfers must be large to fill the resulting fiscal gaps. While transfers have become increasingly transparent and formula-driven in recent years, the very high dependence of most governments on transfers has the potential to reduce local fiscal effort, to distort spending priorities, and to undermine accountability of local officials for the fiscal consequences of their decisions. These problems are especially acute given that the national government still appears to have ill-developed capacity to observe local fiscal needs and monitor local performance. In part due to such concerns, Colombia has proceeded cautiously in devolving actual decision-making responsibilities to the regions: The use by municipalities of transfers is subject to tight conditions, and a large fraction of the money must in any case be spent to satisfy national mandates. This is particularly true since the advent in 1997 of the "traffic light law" to control indebtedness of regional governments. In effect, then, reforms in the decentralization process during the 1990s have been pulling in two very different directions, with increases both in local spending powers and in oversight from the center. Which is the right direction, and what are the effects of the complex set of restrictions and incentives now tied to national transfers?

This paper seeks to shed light on some of these questions. We examine fiscal data for a large number of Colombian municipalities for the 1985-99 period. Our first goal is to describe the effects of the transfer system on both horizontal balance among municipalities. By our estimates, the fiscal capacities of Colombian municipalities differ substantially, which is a major challenge to designing an effective system of decentralization. Because national transfers are large relative to local revenues and are allocated in part on an equal per-capita basis, however, transfers have a substantial equalizing effect on the ability of local governments to deliver comparable local service levels. Nevertheless, important horizontal imbalances persist among municipalities: the equalized fiscal capacity of the richest quintile of municipalities exceeds that of the poorest quintile by about 60 per cent.

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[1]These are the departmental *Situado Fiscal* and *Participaciones Municipales*, now consolidated into a single fund.

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The gap is even larger when differences in expenditure need are accounted for. This suggests to us that the major national transfers should be tied more directly to measures of fiscal capacity and fiscal need than they are at present.

Our second goal is to draw some inferences from the data about how the current system of transfers has affected the level of local taxation and spending, and the pattern of spending across functional categories. Our data cover a period that straddles the major reform in the allocation of municipal transfers that resulted from Law 60 in 1993. This permits a more accurate assessment of the effects of transfers than has been possible in previous research. The topic is large and our answers are necessarily incomplete and of course somewhat speculative. In brief, our conclusions are:

- There is some evidence that transfer growth has discouraged tax effort by the municipalities. This is true even of the formula-driven *Participaciones Municipales* (PM) which should not in itself create a "soft budget constraint" problem. Thus the current system of decentralization may be acting as an impediment to the mobilization of local fiscal resources.

- Despite the attenuation of tax effort, transfers have had a pronounced effect on local program expenditures during the 1990s. Most of the additional funds have been allocated by local governments to direct program spending, rather than government administrative costs.

- National legislation imposes tight restrictions on how the PM transfers can be spent. There is evidence that the rules do indeed constrain "poor" municipalities (those with below-average fiscal capacity). Rich municipalities, on the other hand, are able to reallocate their own-source revenues to undo the effects of conditionality, and there is considerably more fungibility in grants than a strict reading of the law would suggest. This inequity is surely an unintended consequence of the current rules, and it strengthens the case for increased local flexibility in the allocation of spending.

- Other transfers, particularly those associated with resource royalties, appear poorly allocated among municipalities and among spending priorities within the recipient municipalities.

The rest of the paper is organizaed as follows. Section 2 describes municipal fiscal arrangements and their evolution over the past three decades.

Section 3 assesses the horizontal equalization component of municipal transfers. Section 4 provides evidence on how transfers have affected the tax and spending decisions of municipal governemnts. Section 5 concludes.

2 Municipal fiscal arrangements

The key aspects of the current fiscal arrangements in Colombia were determined as part of the 1991 constitutional reforms. In brief, the national government retained control of most major tax bases but was committed to transferring an increasing share of revenues to departmental and municipal governments; in exchange, the regions were assigned greater control over social spending at the local level. Law 60 of 1993 laid out the specific parameters of the revenue sharing arrangements, since revised in Law 715 of 2001.

2.1 The current situation in brief

The bulk of municipal own-source revenues is derived from two tax bases, the local property tax (*predial*) and the industry and commerce tax (ICA). The average shares of these two bases in local revenues for the 1993-99 period is presented in Table 1 for four size categories of municipalities.[2] The table shows reliance on the property tax is greatest in small municipalities, while the ICA is concentrated in the large cities.

Property taxes are levied in the the basis of a nationally administered cadastral assessment system in all municipalities except for Bogotá, Cali, and those in the department of Antioquia, which maintain their own assessment systems. Minimum and maximum mil rates are specified in national legislation, and most municipalities have chosen rates near the bottom of the permissible range (see Leibovich, 2002).

Own-source revenues finance less than half of the municipalities' total expenditures (see below). The main source for the balance of spending has been the system of transfers from the central government generally known as *Participaciones Municipales* (PM). This was a revenue sharing program, which assigned to the municipalities a share of total current revenues of the national government which rose over time to reach 22 per cent in 2001. In 2001, the revenue sharing arrangement was converted to a block grant known as the General Shares System (SGP) that is scheduled to grow at a a constant rate in real terms. This reform has the potential to stabilize finances of the national government in the long run, though over a shorter

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[2]The data set from which these and subsequent figures are derived is described in an appendix and discussed further below.

Table 1: Shares of major municipal tax bases, 1993-99

Municipal population	Property tax	ICA	Other taxes
		-per cent-	
Less than 30,0000 inhabitants	51.7	23.4	24.9
30,000-100,000	38.8	34.7	26.5
100,000-500,000	38.9	38.5	22.6
More than 500,000	31.6	42.2	26.1
All municipalities	34.5	39.8	25.7

Source: Authors' calculations based on a sample of 802 municipalities.

horizon the poor performance of national revenues suggests that transfers will be higher under the new system than the previous one.

The next section documents changes in the major municipal transfer arrangement over the last 30 years.

2.2 The evolution of municipal transfer arrangements

The process of decentralization in Colombia must be understood from the perspective of its long history as a unitary state, in which national agencies have controlled much of local spending programs, often with little input from local actors. Dissatisfaction with this approach grew, given the slow process of development that resulted: Colombia was far behind in public services coverage and in quality of local infrastructure compared with countries with a similar level of economic development. This gave legitimacy to the demands of local officials for greater control over spending in the early 1980s, when the process of political, administrative, and economic decentralization began.

A series of reforms implemented in 1983 and 1984 made possible local election of mayors, which began in 1986. The rise in transfers to the municipalities has largely developed in response to these political reforms, rather than as a result of any coherent vision of the appropriate set of fiscal arrangements for the nation. A brief summary of the changes gives a sense of the ad hoc nature of many past reforms.

In the early stages of decentralization, municipal transfers were defined as a percentage of the national sales tax. In the 1970s, municipalities received around 30 per cent of the revenues, from which near 7 per cent went to "*prestaciones*" of public school teachers (see Table 2). This arrangement remained in place until 1986, although the percentages earmarked for spe-

Table 2: Municipal revenue sharing, 1968–2001

Reform	Aggregate funding	Allocation and restrictions
Law 33 of 1968	30 per cent of sales tax	30 "tax points" to regions (departments, municipalities and Bogotá), allocated in a similar way to *Situado Fiscal*, on basis of population and land area. Transfers to municipalities were unconditional.
Law 10 of 1979	30 per cent of sales tax	22.08 points to regions; 4.92 points to Ministry of Education (*prestaciones*); 3.00 points to *intendencias and comisarías* (new departments). Transfers were unconditional.
Decree 232 of 1983	30 per cent of VAT	25 points to regions; 1.5 points to *intendencias and comisarías*; 3.5 points to *Cajas de previsión social* of departments. Transfers were unconditional.
Law 12 of 1986	VAT shares: 1986: 30.5 per cent 1987: 32.0 per cent 1998: 34.5 per cent 1989: 37.5 per cent 1990: 41 per cent 1991: 45 per cent 1992: 50 per cent.	Tax point assignments increasing annually in the following ranges: 25.8–28.5 points for regions; 3.5–4 points for *intendencias and comisarías*; 0.4–16.8 points for municipalities with population less than 100,000.
National Constitution Article 358 and Law 60 of 1993	14 per cent of total national revenue in 1994, growing to 22 per cent in 2001	Mainly transferred to municipalities on basis of population, NBI, fiscal and administrative efficiency. Transfers tied to expenditure categories: 30 per cent education, 25 per cent health, 20 per cent water utilities, 5 per cent sport and entertainment and 20 per cent unconditional. Small municipalities received 15 per cent unconditionally.
Legislative Act 01 and Law 715 of 2001	Block fund of 11.9 trillion pesos, to grow at 2 per cent plus inflation until 2005, then 2.5 per cent plus inflation until 2009.	General Shares System (SGP) is established for transfers to regions for health and education, plus unconditional block grants (17.5 of total, for municipalities only). Allocated on basis of population, NBI, relative poverty, fiscal and administrative efficiency.

cific spending programs changed in order to increase the resources for the Regional Education Funds (FER). This meant unconditional transfers were smaller, and more resources were earmarked for financing education. Law 12 of 1986 produced a significant increase in the municipalities' share of national revenues. It determined a future share of 50 per cent in the newly introduced value added tax. (The VAT was the second largest revenue source for the national government.)

Due to the amount of resources it generated and the reallocation of responsibilities among levels of government, Law 12 of 1986 can be seen as the beginning of modern decentralization in Colombia. Decrees 77 through 80 of 1987 transferred a group of national responsibilities to the municipalities and abolished various national agencies and divisions of the Ministries charged with management of social spending programs at the local level. This process covered a broad range of functional categories of spending, such as water utilities, health, education, agricultural technical assistance, use of unoccupied fields, urban development, and local infrastructure. This law also modified the local budget process, transferred the management of public transport and the administration of police offices and created the National Technical Assistance to the Municipalities. At the end of the decade, the health and education ministries joined the decentralization process, under the demands made by the recently elected mayors.

The 1991 reforms transformed the decentralization process, and formalized the new institutions in the Constitution. Articles 356 and 357 of the constitution laid out a schedule for progressive increases in the major transfers to departments (*Situado Fiscal*) and the municipalities (the PM), so that ultimately they were to comprise 46.5 per cent of the total revenue of the national government. The PM grew from 14 per cent to 22 per cent of revenues by 2002. This level of transfers is high by international standards and is comparable to federal countries. Largely as a result of these changes, total public expenditures nearly doubled in relative terms during the 1990s, going from 20 per cent of GDP to 38 per cent. Transfers grew in real terms by more than 10 per cent annually, due in part to the phase-in of reveneue sharing, and in part to growth in national revenues, which is in turn attributable to the five major tax reforms approved during the decade.

Transfers under the PM (and its successor the SGP, described below) come with tight conditions imposed by the national government on how the funds are spent: 30 per cent is to be devoted to health, 25 per cent to education, 20 per cent to water and sewage projects, 5 per cent for sports and entertainment, with the remaining 20 per cent for unconditional spending.

PM transfers are allocated among municipalities according to a complex

formula. The share of each municipality in the national fund is determined as a weighted average of various indicators, as follows:

- 22 per cent based on population shares in the 1993 Census;
- 40 per cent based on shares of population living with "unsatisfied basic needs" (NBI);
- 20 per cent based on the NBI index itself; and
- 18 per cent based on measures of fiscal and administrative efficiency, and on progress in reducing local poverty.[3]

A notable feature of this system is that population receives a fairly small weight, so that transfers differ among municipalities in per capita terms far more than is common for major block grants in other countries. Instead, the Colombian system places far greater weight on the NBI index, which is intended as a measure of local poverty rates. In fact, NBI is more a measure of urbanization and development than of poverty, and it is based on many factors that are under the control of local governments, including the extent of health and local infrastructure.[4]

Because the rapid growth of transfers in the 1990s was considered to be unsustainable, a further reform was undertaken in 2001 to convert them to a block grant, not linked to actual revenues of the national government. Legislative act 01 and Law 715 of 2001 created the General Shares System (SGP), which combines the *Situado Fiscal*, the *Participaciones Municipales*, and other transfers into a single fund. The SGP will grow at a fixed rate in aggregate, equal to CPI inflation plus two per cent in the next four years and 2.5 per cent in the four years after that. The goal is that transfers in 2010 will once again equal 46.5 per cent of the national government revenues.

With this reform, the central government will receive all incremental revenues from tax reforms in the next two years. But, because national revenues are currently falling, the level of transfers is in the short term likely to be higher under the new rules than under the previous arrangements.

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[3]This last criterion is apparently measured as the annual change in the NBI index.

[4]The problem of moral hazard for local governments this implies may however have been absent in practice: it appears that the DNP continues to use the 1993 values of NBI to calculate annual transfers. This fact, if it was anticipated by local governments (and whether it was intentional or not), leaves the municipalities with high-powered incentives to improve local infrastructure. On the other hand, since NBI may have changed substantially in some communities since 1993, the grants are likely to be poorly targeted under the current system.

3 Horizontal imbalance

While issues of vertical fiscal balance—the appropriate sharing arrangements for national taxes and the aggregate size of transfers—have been extensively discussed in Colombia, relatively less attention has been paid to horizontal equity among municipalities.

Horizontal fiscal balance, or equalization as it is usually called, is a concept with many different interpretations. In the simplest approach, horizontal balance implies that transfers be set to equate revenues (including transfers) and the actual expenditures of each local government. Such "fiscal dentistry," as this approach has been called by Rao and Chelliah (1991), makes no sense. Equalizing the actual outlays of local governments in per capita terms (raising all to the level of the richest local government) in effect ignores differences in local preferences and hence one of the main rationales for decentralization in the first place. It also ignores local differences in needs, in costs, and in own revenue-raising capacity. Equalizing actual outlays would discourage both local revenue-raising effort and local expenditure restraint, since under this system those with the highest expenditures and the lowest taxes get the largest transfers.

To avoid such problems, most countries which have formal equalization transfers avoid revenue-pooling and generally aim either to equalize the capacity of local governments to provide a certain level of public services or the actual performance of this level of service by local governments (Bird and Smart, 2002). The performance criterion, which adjusts the transfer received in accordance with the perceived need for the aided service (and which may also allow for cost differentials) is generally more attractive to central governments because the level of service funded is then in effect determined centrally, and transfers can be made conditional on the provision of that level of service. Unfortunately, unless adequate adjustment is made for differential fiscal capacity, with this system once again that government which tries least will receive the most.

A better alternative is a system of capacity equalization, in which the aim is to provide each local government with sufficient funds (own-source revenues plus transfers) to deliver a centrally-predetermined level of services. (Differentials in the cost of providing services may or may not be taken into account.) Transfers are based on a measure of each jurisdiction's potential revenue-raising capacity (such as assessed values for property taxes or measured tax bases for other taxes) and not on actual revenues. Provided revenue capacity is measured accurately—often not an easy task—such transfers will create no disincentive for local governments

to raise revenues because at the margin the local government still bears full fiscal responsibility for expenditure and taxing decisions—essentially because transfers are lump-sum (inframarginal) in nature.

In the Colombian case, the notion of capacity equalization has received little attention, and the present transfer system is only very weakly related to measures of local fiscal capacity and fiscal needs. In what follows, we examine the extent of imbalances in municipal own-source revenue capacity and fiscal needs, and we show how successful the transfer system has been in redressing them.

3.1 Fiscal capacity and equalization in Colombia

As the foregoing discussion suggests, the key to assessing equalization is to have a measure of local revenue capacity, as distinct from actual tax revenues. A region whose revenues are low because of inadequate tax effort should not be compensated, whereas transfers may be appropriate for regions with below-average tax bases. Information on local revenue capacity is sadly lacking in the Colombian government, which is in itself a significant impediment to transfer reform. For local property taxes, information on cadastral valuations (*avalúos*) is available on a consistent basis from IGAC for all municipalities but the three largest cities and the Antioquian municipalities.[5] No such tax base information is available for the other major municipal revenue source, the ICA, which is a local business tax that appears highly insensitive to business profits. We therefore assume that the effective tax base for the ICA and all other local revenue sources is proportional to property assessments in each municipality, and we use the property base alone as the basis for our measure of capacity. This assumption probably results in an underestimate of true differences in capacity.

The next step in comparing local capacities and transfers is to establish a benchmark level of revenues that each municipality is deemed to be able to raise from its estimated tax base. We adopt the "representative tax system" approach (see, e.g., Boadway and Hobson, 1993), which simply assumes the observed average effective tax rate among municipalities is the appropriate benchmark. We sum all own-source tax revenues in all municipalities in our sample[6] for the 1999 fiscal year and divide it by the

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[5]In these places, assessment is done locally and so may be inconsistent with valuations elsewhere. It is in any case probably best to omit the largest (rich) cities from the analysis, since even countries with well-functioning equalization systems typically do not "tax" the own-source revenues of local governments with above-average capacity.

[6]We use data on the 624 municipalities in our sample for which cadastral data were available.

corresponding sum of cadastral assessments to arrive at our benchmark tax rate. Each municipality's estimated fiscal capacity is then defined as its per capita assessment, multiplied by the benchmark tax rate. Thus, if B_i and R_i are tax base and own-source revenues per capita and P_i is population in each municipality i, fiscal capacity is defined as:

$$FC_i = B_i \frac{\sum_j P_j R_j}{\sum_j P_j B_j}$$

To assess the equalizing effects of the transfer system, we then added per capita transfers to the municipality from all sources TR_i to obtain *equalized fiscal capacity*:

$$EFC_i = FC_i + TR_i$$

The relationship between FC_i and EFC_i then indicates the degree of equalization in the transfer system. There is, however, an important caveat to our methodology. Two key inputs to our analysis, municipal population and property values, are measured with considerable error. If the magnitude of measurement error is roughly the same in all regions, our procedure is likely to mis-classify low-capacity regions as high-capacity and vice versa, and as a result we will underestimate the degree of horizontal imbalance, both before and after transfers. More seriously, transfers per capita are also affected by errors in population estimates, which causes our calculated transfer and capacity measures to covary positively. To the extent this is so, there will be some bias in our estimates of the equalizing effects of the transfer system.

To present the results in an accessible form, we graph the tax and transfer variables for quintiles in the distribution of fiscal capacity. In Figure 1, the leftmost bar depicts the equalized fiscal capacity of the 20 per cent of municipalities that have the lowest FC_i, the second bar the municipalities in the 20-40 percentile group, and so on. The rightmost bar depicts the average for all municipalities. Each bar is divided into four components: own-source fiscal capacity, transfers under the PM, other transfers, and non-tax revenues. For convenience, all variables have been inflated by CPI growth and are measured in thousands of 2000 pesos per capita.

Our analysis leads us to the following conclusions about equalization in Colombia:

- The average equalized fiscal capacity in 1999 was about 250,000 pessos per capita. Of the total, around 60 per cent is derived from the

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formula-driven PM transfers, 20 per cent to other transfers, and a further last 20 per cent to own resources. Thus the municipalities are indeed highly dependent on transfers.

- Own-source fiscal capacity is extremely unequally distributed among municipalities. Average FC in the top quintile is ten times that of the bottom quintile. PM transfers are not at all sensitive to measured capacity differences: they are virtually equal in per capita terms for all five quintiles. However, because transfers are large relative to own-source capacity, they do exert a substantial equalizing effect in percentage terms. For example, the average EFC of the top quintile exceeds that of the bottom quintile by only about 60 per cent. Put differently, EFC in the bottom two quintiles is about 20 per cent below the national average EFC, which is in turn about 20 below EFC in the top quintile.

- Figures 2 and 3 repeat the calculations for the subsamples of municipalities with small and large populations. Average transfers are much higher among small municipalities, despite small differences in fiscal capacity. This reflects the strong dependence of PM transfers on measures of local poverty rates. For the same reason, the transfer system is far more effective in equalizing fiscal capacity in the cities than in the small municipalities, where poverty rates vary more.

- The story that emerges is somewhat different when the graph is drawn for quintiles in the distribution of EFC, rather than FC: see Figure 4. (That is, in this case we examine the post-fisc distribution rather than the pre-fisc distribution.) In this case, the depicted inequality in EFC must by construction be greater than in Figure 1, but the large difference between the two measures of inequality is rather surprising. Observe that EFC in the top quintile is about double the average, while the other quintiles are clustered between 50 and 100 per cent of the average. This suggests a relatively small number of municipalities are the main beneficiaries of the current transfer arrangements.

These findings highlight the way transfers vary widely among municipalities with similar own-source fiscal capacities. In this respect, the transfer system increases horizontal inequality. This effect of transfers is to be expected, given the complicated system of transfers and allocation formulas that is currently in place. Of course, to some extent differences in transfers that are unrelated to fiscal capacity may be serving other social goals, including differences in perceived fiscal need among municipalities that are not represented in Figure 1. The next section addresses fiscal need.

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3.2 Adjusting for fiscal need

To measure differences in fiscal need among municipalities, we obtained data on a new measure that may better represent the costs of providing local services in each area. The index, constructed by the *Misión Social* of the DNP, is a weighed sum of four measures:

1. the existing quality of life index (ICV);
2. percentage coverage rate for the subsidized health care system;
3. percentage of school enrollment that is in rural areas;
4. the extent of local public infrastructure, proxied by the number of public libraries in the municipality.

The need measure was constructed as:[7]

$$\text{Need} = 1 - 0.695 \times \text{ICV} - 0.205 \times \text{health coverage}$$
$$+ \, 0.690 \times \text{rural enrollment} - 0.0064 \times \text{libraries}$$

The index was normalized by dividing by its maximum value, so that resulting index lies between zero and one, with one representing the highest level of need. For example, Bogotá's index value is 0.09, while Providencia (Nariño) has a score of 0.73, the highest among all 977 municipalities for which the index was calculated.

This is less than ideal as a measure of local fiscal need, as some components of the index may be more indicative of the actual performance of local government, rather than the unit cost of providing additional services. Nevertheless, we use the index to give some indication of how our measures of fiscal capacity can be adjusted for local needs, and what qualitative implications this would have for our conclusions about the redistributive effects of the transfer system.[8]

To use the index, some assumptions about the link between differences in index values and differences in actual costs is required. We arbitrarily assume that costs are proportional to the square root of need. We therefore calculate a cost index equal to the square root of need, divided by its mean value in the sample of 624 municipalities for which we have both fiscal and

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[7]The weights in the sum were chosen to match the first principal component of the four series. That is, the need index is the normalized linear combination of the data with maximal variance.

[8]At the municipal level, the need index is quite similar to the existing ICV index (the correlation coefficient for the two variables is 0.91) but less closely related to NBI, on which transfers are currently based (The correlation coefficient is 0.64).

needs data, so that cost is equal to one for the municipality with average need. The decision to use the square root of the need index, rather than the index itself, makes our resulting measures less sensitive to inequality in need. Clearly, further research on actual need and expenditure differences among municipalities would help make this a less speculative exercise (e.g., Shah, 1996).

We then divided equalized fiscal capacity by the resulting figure for each municipality, to obtain a measure of need-adjusted equalized fiscal capacity equal to:

$$NAEFC_i = \frac{EFC_i}{COST_i}$$

The average value of $NAEFC$ for each quintile in the distribution of fiscal capacity is shown in Figure 5.

4   Transfers and fiscal behavior

The overriding characteristic of the Colombian system of decentralization is the very high dependence of most municipalities on transfers from the center to finance local spending, in place of local tax revenues. Many observers have expressed concern that transfer dependence may have dulled incentives for local officials to increase taxes and control borrowing, and may have resulted in a misallocation of local spending. The debate on these issues has for the most part been hampered by a dearth of evidence on the actual response of municipalities to changes in transfer arrangements. In this section, we attempt to fill this gap. We focus on the effects of transfers on local taxation and the allocation of spending.

4.1   Tax effort, borrowing, and soft budget constraints

A recurring theme in debates over decentralization in Colombia has been the tax effort exerted by local governments. Since the earliest stages of the decentralization process it has been argued that the regions do too little to mobilize the fiscal resources at their disposal. Initially, decentralization was seen in part as a mechanism to induce greater local tax effort. With the 1993 reforms, however, concern shifted to the possibility that increased transfers would instead discourage fiscal effort.[9] Initially, decentralization was seen in part as a mechanism to induce greater local tax effort. With the 1993

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[9]In the 1990s, there was a related concern that excessive borrowing by the regions could be linked to transfers and, in particular, that the failure of the national government to commit to a stable transfer system had softened local budget constraints. We do not address borrowing here, which has principally been an issue for the departments. See Dillinger and Webb (1999), Alesina et al. (2000), and Echavarría et al. (2002), *inter alia*.

reforms, however, concern shifted to the possibility that increased transfers would instead discourage effort. This contention has been the subject of a number of empirical studies.[10] In what follows, we offer a different view of the issue.

A preliminary look at the data is suggestive. Figure 6 graphs total transfers and total own-source tax revenues as a percentage of GDP for the 802 municipalities in our sample. The figure shows that local revenues have grown faster than GDP throughout the 1984–2000 period, and especially since the 1993 reform, when transfer growth accelerated. This might be interpreted as good news: local revenues have been moving in the right direction, in spite of transfer growth.

But the correlation between aggregate taxes and transfers cannot, of course, be construed as evidence of a causal relationship between the two, nor can it indicate how local revenues would respond if transfers were reduced in the future. Local revenues may have increased because of other decentralization reforms that were contemporaneous with, but otherwise unrelated to, the increase in transfers. As well, it is likely that both municipal and national revenues (upon which transfers are based) respond in the same direction to other, unobservable changes in the economy over time, such as changes in the size of the informal sector, disruptions due to the internal conflict, and so on.

An alternative approach that deals with some of these problems is to examine data on the finances of individual municipalities over time. Using panel data allows us to separate the effects of a change in transfers for a particular municipality from other, unobservable changes affecting all municipalities simultaneously. To do so, we estimate the linear relationship:

$$TAXTOT_{it} = \alpha_i + \delta_t + \beta \cdot TRPM_{it} + \epsilon_{it} \tag{1}$$

where $TAXTOT_{it}$ and $TRPM_{it}$ are real own-source tax revenues per capita and real transfers under the PM per capita, respectively, α_i and δ_t are fixed effects for municipality and year that are to be estimated, and β is the parameter of interest.[11] Thus our approach allows for the possibility that per capita tax revenues vary from year to year in all municipalities, and consistently differ among municipalities, in ways that are unrelated to the effects of the transfers. In effect, our estimate of β, the effect of PM transfers on

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[10]See, e.g., World Bank (1996), Zapata et al. (2000), and Núñez (2002).

[11]We use PM transfers rather than total transfers as the explanatory variable because grants under the PM are formula-driven and so less likely to respond to other economic and political changes that also affect tax revenues. All real variables are deflated by CPI and measured in millions of 2000 pesos.

Table 3: Transfers and tax effort

| | | OLS | 2SLS |
	(1)	(2)	(3)
TRPM	0·01*	0·01*	−0·26**
POP	·	0·11**	0·06**
GDP	·	0·01	0·01
NBI	·	−0·12*	−0·59**
FARC	·	−0·26*	−0·49**
ELN	·	0·46*	0·24

Notes: All specifications include year and municipality fixed effects.

*: Significant at the five per cent level.

**: Significant at the one per cent level.

revenues, measures the impact of changes in the transfers received by one municipality, *relative to the others at a point in time*, on the municipality's relative tax revenues. Note that, since our sample covers the period before and after the 1993 reforms, which implemented major changes in the transfer allocation formula, there is substantial variation in transfer shares of municipalities from which to identify tax effort effects.

Table 3 reports the estimated effect of transfers on tax effort using this approach, based on annual data for 802 municipalities during the 1985–99 period. The first column of numerals reports the estimate of β for the simple specification of equation (1), which is 0.01. Thus we find a small (but statistically significant), *positive* effect of per capita transfers on per capita local tax revenues. This lends some further support to the view, suggested by Figure 6, that transfers have done nothing to discourage fiscal effort of municipalities.

However, it remains possible this result is explained by trends in economic and demographic factors facing municipalities that are correlated with the change in shares of PM transfers. To allow for this, we add to equation (1) controls for the estimated population of the municipality (POP); the per capita gross domestic product of the department in which the municipality lies (GDP); the municipality's index of unsatisfied basic needs (NBI), a measure of local economic and social development; and the recorded number of attacks in the municipality by the two major guerilla groups

(*FARC* and *ELN*).[12] Results for this specification are reported in column 2 of the table. The estimate of β in this case is essentially unchanged: an increase in transfers of 1000 pesos per capita leads to an estimated increase in tax revenues of about 10 pesos per capita. Estimated coefficients for control variables are generally of expected sign and plausible magnitude. Municipal population (measured in thousands) is positively related to revenues; departmental GDP has a small and insignificant impact. Revenues are smaller in municipalities with higher NBI and more FARC attacks. Revenues are however *positively* related to the number of attacks by the ELN.

A remaining problem with this approach is that, since 1994, the formula for PM transfers has depended to some (small) extent on measures of administrative and fiscal efficiency of municipalities. Thus the positive estimate of β could indicate that revenue increases cause transfer increases, rather than the converse. Because of this possibility, and given that our goal is to estimate municipalities' response to changes in block grants, it is preferable to examine the effect on revenues of the 1993 transfer reform alone, which changed the distribution of grants in an arguably exogenous way, rather than based on the annual changes in transfers thereafter. This suggests the use of a two-stage least squares (2SLS) estimator, in which transfers to each municipality before and after the reform are predicted based on fixed municipal characteristics, and β is estimated by regressing tax revenues on the predicted level of transfers and the control variables. Since the 1993 reforms introduced NBI into the transfer formula, and tilted it in favor of the small municipalities, we predict post-1993 PM transfers in the first stage using each municipality's NBI index in 1993, a dummy variable equal to one if 1993 population is below 30,000, and the interaction of the two. Column 3 of Table 3 reports the second-stage estimates of the effects of transfers using this approach. The estimate of β is now significantly negative: an increase in transfers of 1000 pesos per capita as a result of the reform is estimated to lead to a reduction in own-source revenues of 250 pesos per capita. The estimated effect of controls is however similar to the OLS estimates, except that the positive effect of the ELN on revenues becomes insignificantly different from zero.

If transfers discourage tax effort, are municipalities responding by decreasing expenditures or increasing borrowing? To answer this question, we next estimated the effect of PM transfers on total per capita spending by municipal governments, using the same approach as for the tax revenue regressions. Results for the OLS and 2SLS estimators are reported in the

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[12]The data on guerilla attacks are taken from Sánchez and Nuñez Mendez (2000).

Table 4: Transfers and local spending

	Total spending		Administrative spending	
	OLS	2SLS	OLS	2SLS
TRPM	0·91**	1·05**	0·18**	0·01
POP	0·17**	0·19**	0·07	0·03
GDP	0·11	0·11	0·02	0·01
NBI	−0·86**	−0·62**	−0·32**	−0·62*
FARC	−1·34	−1·22	0·12	−0·02
ELN	0·35	0·46	0·78	0·64

Notes: All specifications include year and municipality fixed effects.

*: Significant at the five per cent level.

**: Significant at the one per cent level.

first two columns of Table 4. The OLS estimate of β is 0.91, and the 2SLS estimate is essentially the same at 1.05; both are significantly different from zero at the one per cent significance level. This is consistent with a "flypaper" effect of transfers (see, e.g., Hines and Thaler, 1995): transfer increases are fully passed through to spending, and any reduction in tax effort is compensated by an increase in municipal borrowing.

4.2 Transfer conditionality and the allocation of spending

Colombia's transfer system tightly regulates the ways in which municipalities may spend the grants they receive from the center. Under current rules, PM transfers are to be spent on *gastos de inversiones* rather than *gastos de funcionamiento*. Despite the terminology, this has meant in practice that funds have been earmarked not for capital investment, but for any direct program expenditures, including wages and salaries of education and health care workers. The functional allocation of program expenditures is also subject to tight conditions: 75 per cent of all PM transfers are tied to spending requirements for health, education, and water and sewage projects. Conditionality of this sort is often criticized by public finance economists. Permitting local governments more discretion might allow spending to be targeted better to meet local needs. Furthermore, it is sometimes contended that greater local contol can have knock=on benefits in the political sphere, as greater involvement of local interest groups in spending decisions may

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Table 5: Effects of conditionality

| | Functional category: | | |
	Education	Health	Water
	- per cent-		
Legislative minima	30	25	20
Average shares, 1999	25	27	14
Estimated marginal effect of transfers:			
All municipalities	20*	14	6
Low-tax municipalities	29*	23**	22*

Notes: Rows 3 and 4 are instrumental variables estimates
analogous to those reported in Tables 3 and 4.
*: Significant at the five per cent level.
**: Significant at the one per cent level.

enhance accountability.

There is a further difficulty with conditionality in grants: it may simply be ineffective in constraining governments. Money is fungible within the local government budget, and governments with access to other sources of funds may simply reallocate other revenues to "undo" the effects of transfer conditionality (Bird, 1993).

To look for evidence of real effects of conditionality under the PM, we estimated the impact of transfers on specific expenditure categories for municipalities, using the same methodology as described above for tax revenues and total spending. First, to examine whether transfers were associated with higher administrative expenditures, as is suspected by many observers in Colombia, we regressed *gastos corrientes* (which is essentially administrative expenditures of governments, as distinct from program spending) per capita on PM transfers per capita and control variables. In this case, we restrict our sample to the 722 municipalities for which we have accurate expenditure data for the full 15 year period. The last two columns of Table 4 report results for the OLS and 2SLS specifications. The OLS estimates indicate a fairly small but statistically significant positive effect of transfers on administrative expenditures; evidently, the effect of transfers is to decrease the fraction of the budget consumed by overhead. When the 2SLS approach is used, however, the relationship between the two variables disappears. In either case, the evidence is consistent with the notion that most transfers are passed on by local officials to finance program spending of

one kind or another.

Next, we examined the effectiveness of conditions on the functional allocation of spending. Under Law 60 and its successor, 30 per cent of municipal transfers are earmarked for education programs, 25 per cent for health, and 20 per cent for water and sewage projects. Our data set records actual expenditures in these categories in all years since 1991 for a subsample of 164 municipalities (the other data are missing). In Table 5, we report the actual percentage of 1999 program expenditures (*gastos de inversiones*) in these three categories. The percentages are fairly close to the legislative targets in all cases, though somewhat lower for education and water projects. (Note that this does not imply the municipalities are in violation of the Law 60 thresholds, since these apply only to the portion of expenditures financed through PM transfers.)

While average spending is close to targets, however, incremental transfers might be allocated quite differently, if municipalities reallocate own-source revenues and other transfers in response to changes in PM transfers. To investigate this possibility, we regressed total per capita expenditures in each of the three categories on per capita PM transfers and the control variables, using the 2SLS methodology described above. The third row of Table 5 reports the resulting estimates of the transfer effects for each spending category. (Coefficient estimates for the other variables are omitted in the interests of readability.) The estimates are indeed consistent with the reallocation hypothesis: changes in transfers are associated with much smaller changes in spending on the sanctioned categories than Law 60 requires. This is particularly true for health and water projects, for which estimated marginal spending is not significantly different from zero.

If reallocation is occurring, its effects should be greatest among municipalities with above average own-source revenues, which are financing a greater share of spending with their own funds and so have greater scope for substitution. To check this, the fourth row in Table 5 records estimated transfer effects for the subset of municipalities which had below-average own-source revenues per capita in 1993. Consistent with the hypothesis, incremental transfer effects are much larger for all three expenditure categories, and are in fact remarkably close to the legislative thresholds.

Thus, a further difficulty with conditionality is that it appears in practice to have been applied asymmetrically. Low-revenue municipalities that are highly dependent on transfers are constrained by the rules, while those with greater own-source revenues have been able to go their own way in determining expenditure priorities.

4.3 Resource royalties

Royalties from extraction of natural resources are an important source of revenues to a small number of municipalities—and a great source of controversy for the rest of the country. The aggregate amounts, most of which are derived from oil, gas, and coal, are large: total royalties in years of high prices and production can exceed US$1 billion, and they have averaged around US$600 million in the last five years. This represents about 35 per cent of transfers under the PM over the same period, and about 75 per cent of unconditional transfers.

Under current arrangements, royalties are allocated in normal years as follows: (i) 47.5 per cent of the total goes to producing departments; (ii) 12.5 per cent to the producing municipalities; (iii) 8 per cent to municipalities with ports; and (iv) 32 per cent is retained in the National Royalty Fund (FNR). This formula applies only up to certain production thresholds; when the ceilings are exceeded, the marginal share of producing regions is much lower, and the residual is allocated to the FNR. Use of municipalities' own-source royalties is unrestricted, while the FNR is earmarked for local electricity and environmental infrastructure projects, which may be in any municipality in the country, and which are approved on a case-by-case basis by central officials.

Because resource production is concentrated in a small number of regions, the allocation of royalties is extremely unequal. About 250 municipalities receive some royalties, but most of the amounts are very small. Around 60 per cent of the total accrues to 6 municipalities and departments, which are in turn among the richest areas of the country. The resulting allocation has been criticized, not only because of its regional inequality, but also because the funds often appear to be poorly spent by the recipient governments.

A recent series of case studies on the use of royalties have highlighted a number of problems with the current arrangements:

- Royalties are used to finance local spending that is extremely volatile from year to year, and extremely unequally distributed among regions of the country. Much of the marginal expenditure occurs in regions in which spending would in any case be high. For example, Casanare, an oil-producing department, has a level of infrastructure spending than other departments with 10 or 15 times its population.

- The projects funded by royalties appear to have lower value than others in terms of stated national objectives. The case studies suggest:
    - Initially, royalties were used to finance health, education and

other social programs, but more recently a high proportion of funds have devoted to non-priority areas like entertainment, sports and local fairs, and so on.
  – Many capital projects financed through royalties are behind schedule and have remained uncompleted.
- In many cases, auditors have found irregularities in procurement procedures and have initiated investigations of local officials involved in the projects. This suggests that the level of corruption associated with the use of royalties is greater than for other areas of local finance.

On the other hand, use of FNR resources has also been criticized. Initially, these resources were administrated by a public commission with delegates appointed by governors and mayors, which induced a high concentration of spending in a few municipalities and an extreme lack of transparency in the process. This commission was subsequently abolished, and the National Planning Department (DNP) and the Ministry of Finance now administer FNR funds. While this change may have some advantages, FNR resources continue to be managed in a non-transparent fashion, in which central officials have a great deal of discretion. The national government is now trying to reform the FNR to redirect funds towards a goal of increasing school enrollment nationally, among other programs. Some critics as well have called for the funds to be earmarked towards meeting the national government's unfunded pension liabilities.

In summary, the main problem in the fiscal arrangements for royalties is the allocation of windfall gains that come during the production booms. One recommendation worthy of consideration is to end the earmarking of FNR funds for local projects, and to allow funds to revert to the national government's general revenue fund, as was the case in the 1980s. A further option for reform is to apply hard caps to the amount of royalties that the municipalities and departments can receive.

5 Conclusion

Subnational transfers have long been a subject of active debate in Colombian public policy circles. Given the current fiscal position of the national government, further reforms in transfers appear likely in future, and so it is important to understand what effects transfers have on local service provision and spending in the municipalities, and on the taxation decisions of local governments. Our analysis provides some preliminary steps in this direction.

Because own-source fiscal capacity is extremely unequally distributed among municipalities, and current transfer formulas are only weakly linked to fiscal capacity, future attempts to curb the growth of transfers are likely to increase horizontal imbalance in undesirable ways. Furthermore, our analysis suggests that cuts in transfers would for the most part be passed through as reductions in program spending, with only small offsetting effects on local own-source revenues and administrative expenditures.

That being said, the prospect of reform raises the possibility that transfer formulas be adjusted to make them simpler, more transparent, and better targeted to redressing differences in fiscal capacity and compensating differences in fiscal need. As a step in this direction, central government agencies will require more accurate measures of fiscal capacity and fiscal need. For the municipal property tax system, this requires as a first step an updated assessment of property values, performed in a consistent way for the entire nation. Our analysis also suggests that the tight conditionality of PM transfers under current rules has had unintended consequences and is inequitably applied in practice. Thus future reforms might usefully be contemplated to relax conditionality, for example through a reduction in the minimum shares of transfers that must be devoted to health, education, and water projects.

One reform that has been proposed is to make transfers more dependent on measures of local fiscal performance and thus, possibly, to improve fiscal incentives at the local level. Our analysis does not lead to specific conclusions about the likely effects of such a reform; it should be noted, however, that such a reform would almost surely increase horizontal imbalances. This problem is likely to be most acute for municipalities with population under 30,000, and future transfer reforms should likely continue to emphasize the special situation of small municipalities..

Appendix: Data description

Fiscal data. The "Contraloria General de la Repuublica" (CGR) has a fiscal information database for 1069 municipalities between 1984 and 2000. This is, for the moment, the largest municipal fiscal information database available, with a high level of detail. The database has around 913 different accounts, 250 in average for every municipality. Cali, the municipality with most accounts, has 426.

The database has two main characteristics: one, the lack of information is high, therefore it has been necessary to complement this information with other databases. Two, the accounts classification procedure does not correspond to IMF or international accounting standards (in Spanish, Operaciones Efectivas de Caja), an therefore it has been necessary to reorganized the accounts. The followed procedure is now described:

In the first place, three fiscal municipal databases were used: a) Bank of the Republic 1987 - 1995, b) Bank of the Republic 1980 - 1986 and c) National Planning Department (DNP) 1996 - 2000 in order to complement as possible the lack of data in the CGR database. First of all, a relation between the accounts of the three databases and the CGR database was established. The related accounts were total income, current income, tax income, predial, ICA, non-tax income, rates, transfers from national, departmental and municipal entities, cofinanciacin (matching grants), National Royalties Fund (FNR), Total expenditures, current expenditures, administrative expenditures, public payroll expenditures, general expenditures, debt interest, investment and debt.

The result of this process was a database in which the accounts were organized in similar format to the IMF standards. Although, the number of municipalities with complete information up to this point was 230. To fill keep filling the information blanks, the following procedure was used. If the information blank was between 1985 and 1999, the growth rate from another of the three related databases was used upon the year without information in the CGR database. If the blank information was between two or five years, the same process was applied in a recursive way.

At the end, because this procedure could only be applied on the main accounts mentioned above, it was necessary to distribute the resulting value among the sub accounts. For example, distribute the tax income among all taxes. For this the relation between the main account and its sub accounts for the closest year with information was used.

At he end of the process the final database has information in its main accounts for 802 municipalities.

Other data. Departmental GDP data were obtained from the Department of National Statistics (DANE). Municipal population data are derived from the national censuses of 1985 and 1993. For intercensal years prior to 1993, population is interpolated assuming a constant growth rate in each municipality. This appears to be the procedure used by the Department of National Planning (DNP) to calculate actual transfers under the PM. Data on the NBI index was obtained from the DNP and the cadastral valuations from IGAC.
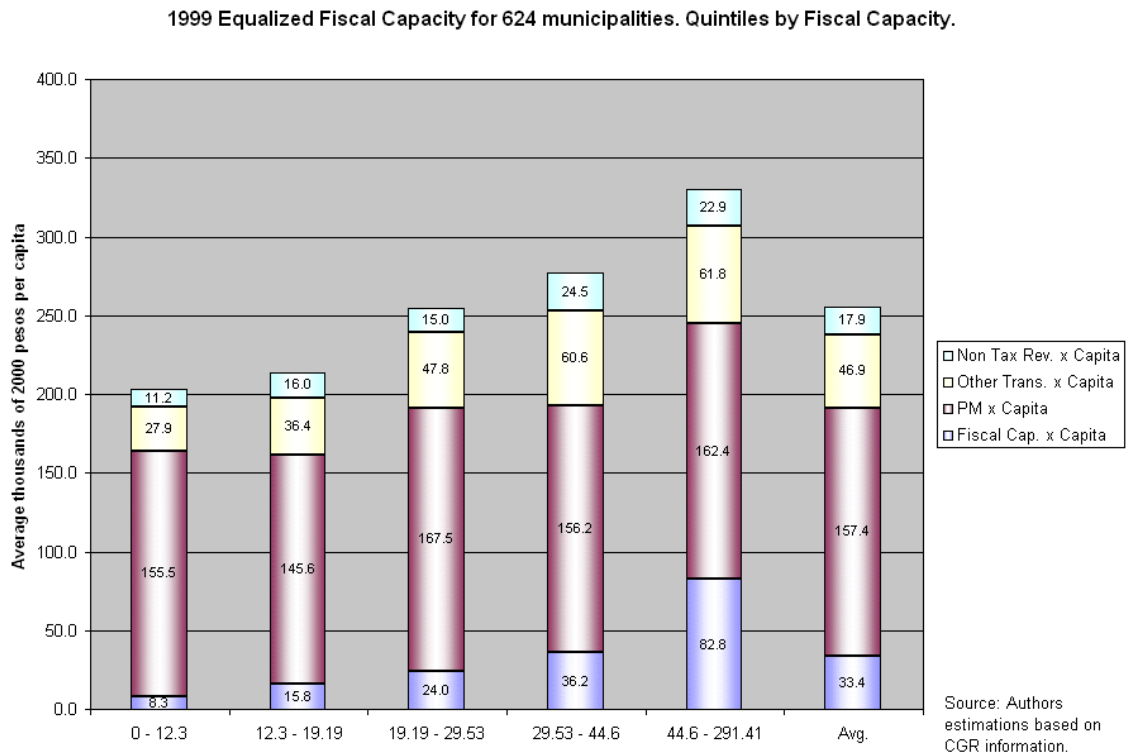
Figure 1:

1999 Equalized Fiscal Capacity for 624 municipalities. Quintiles by Fiscal Capacity.

Figure 2:

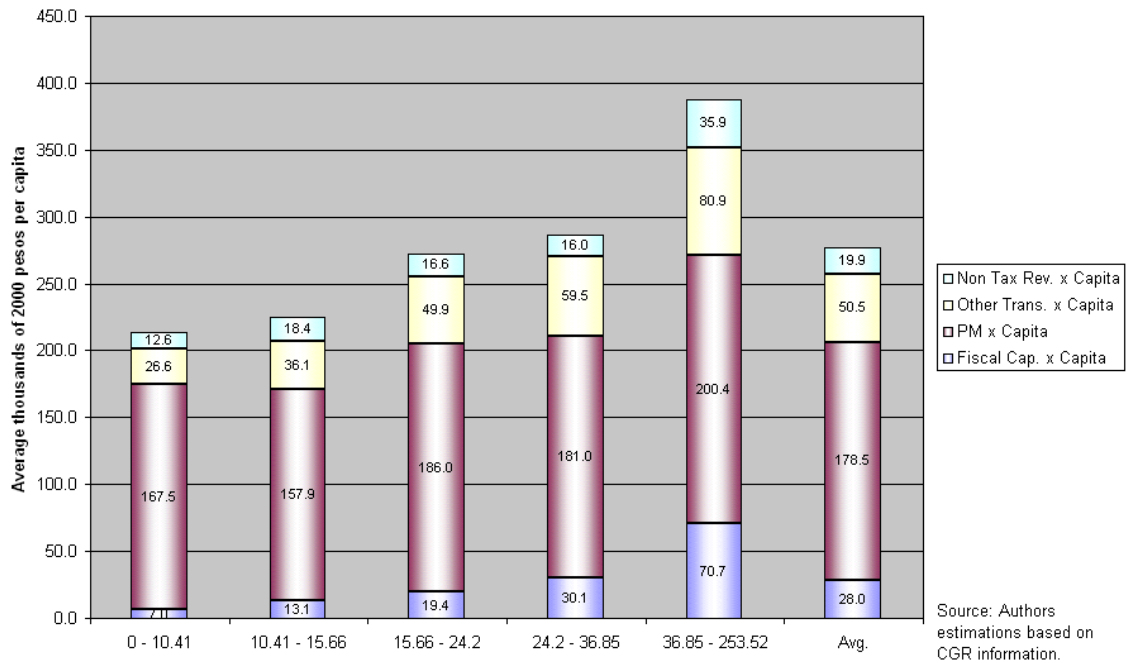**1999 Equalized Fiscal Capacity for 496 municipalities with less than 30.000 residents. Quintiles by Fiscal Capacity.**
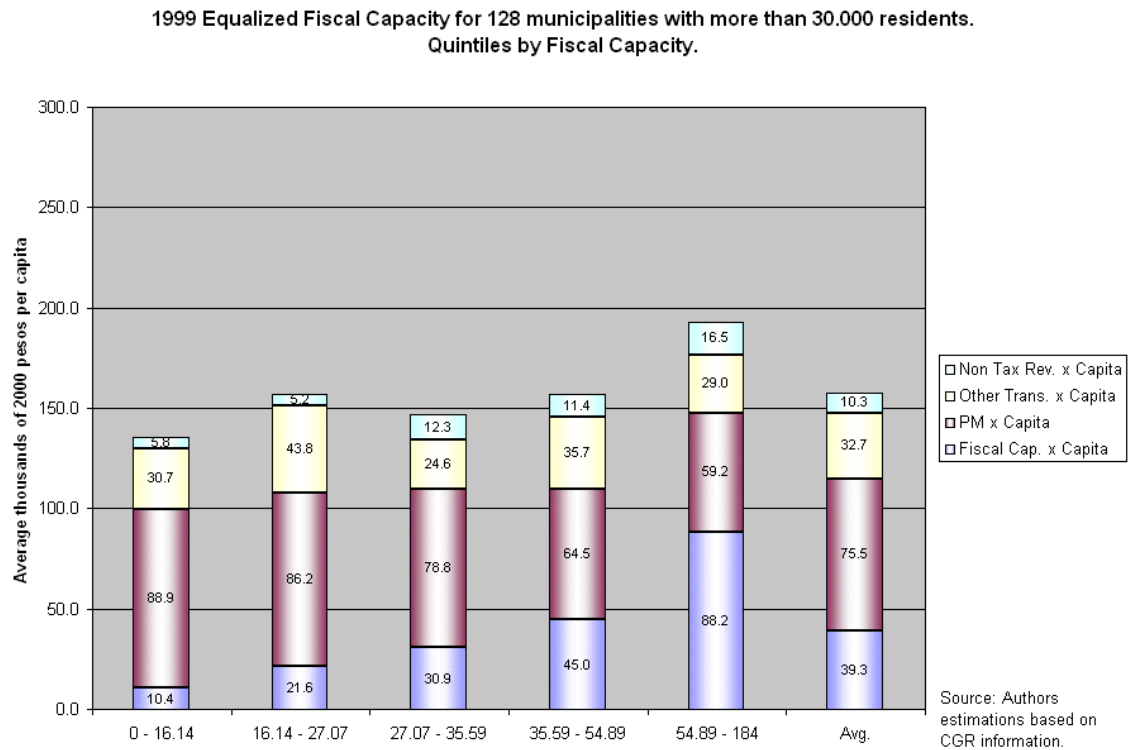

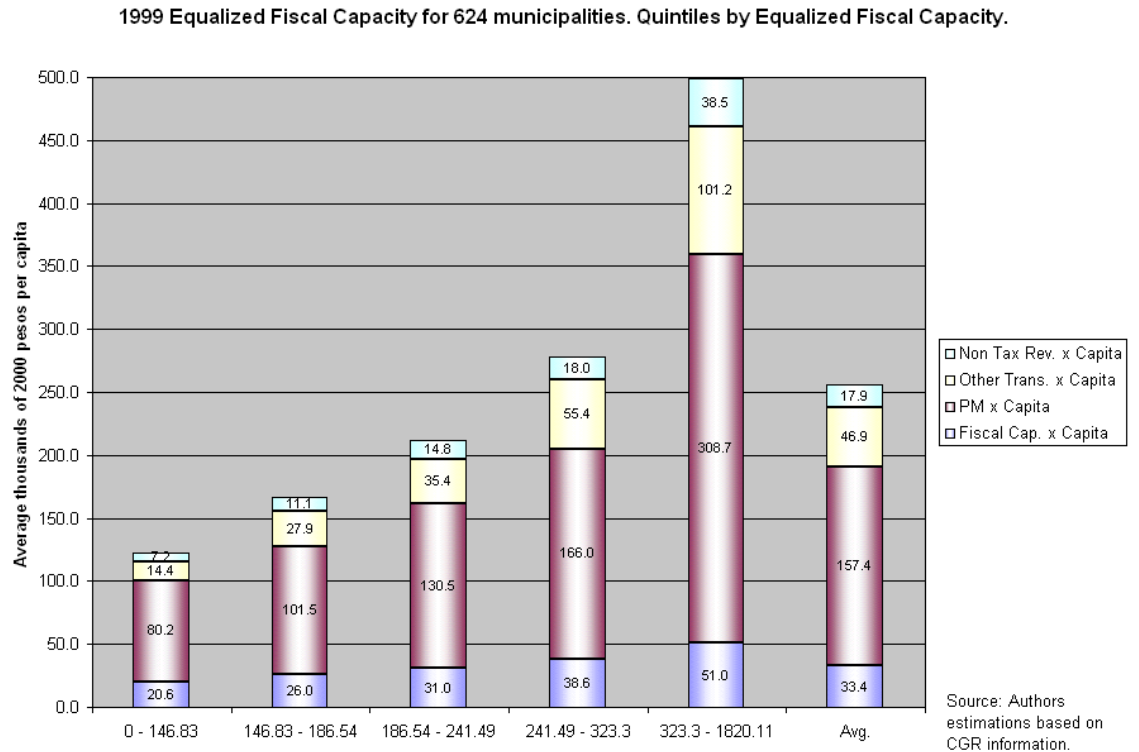Source: Authors estimations based on CGR information.

Figure 3:

1999 Equalized Fiscal Capacity for 128 municipalities with more than 30.000 residents.
Quintiles by Fiscal Capacity.

Source: Authors
estimations based on
CGR information.

Figure 4:

1999 Equalized Fiscal Capacity for 624 municipalities. Quintiles by Equalized Fiscal Capacity.

Source: Authors
estimations based on
CGR information.

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Figure 5:

1999 Need Adjusted Equalized Fiscal Capacity for 624 municipalities. Quintiles by Fiscal Capacity.

Source: Authors estimations based on CGR information.

Figure 6:

Municipal Tax Revenue and Total Municipal Transfers
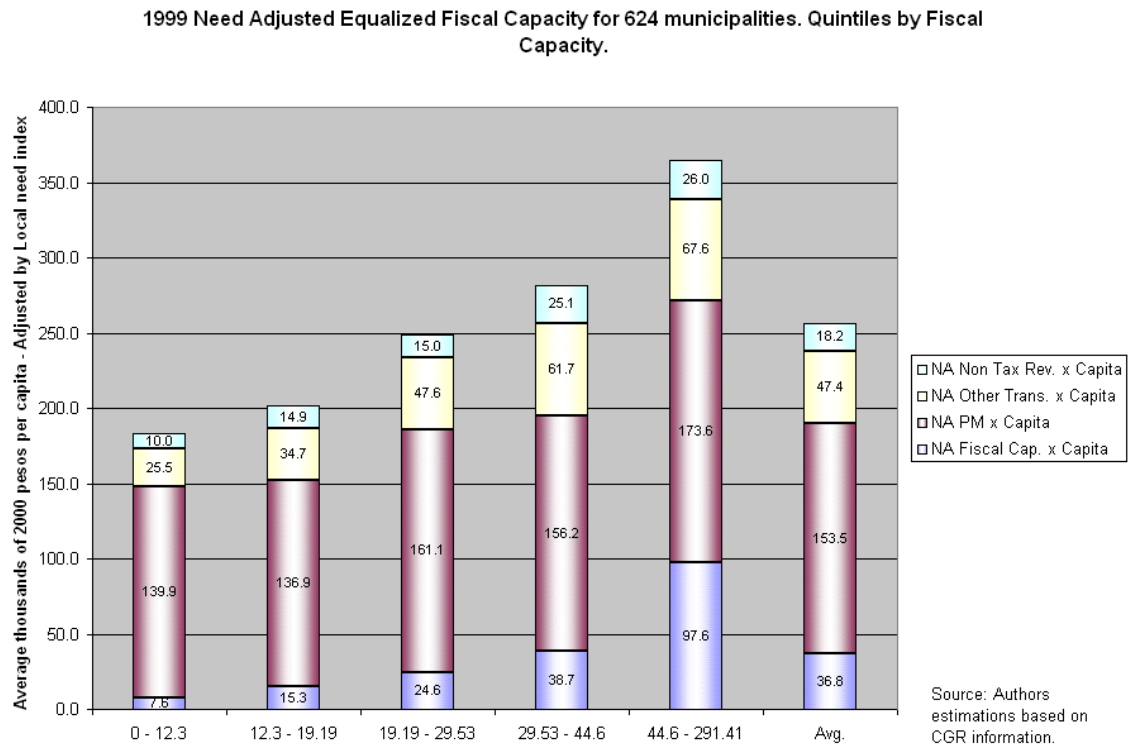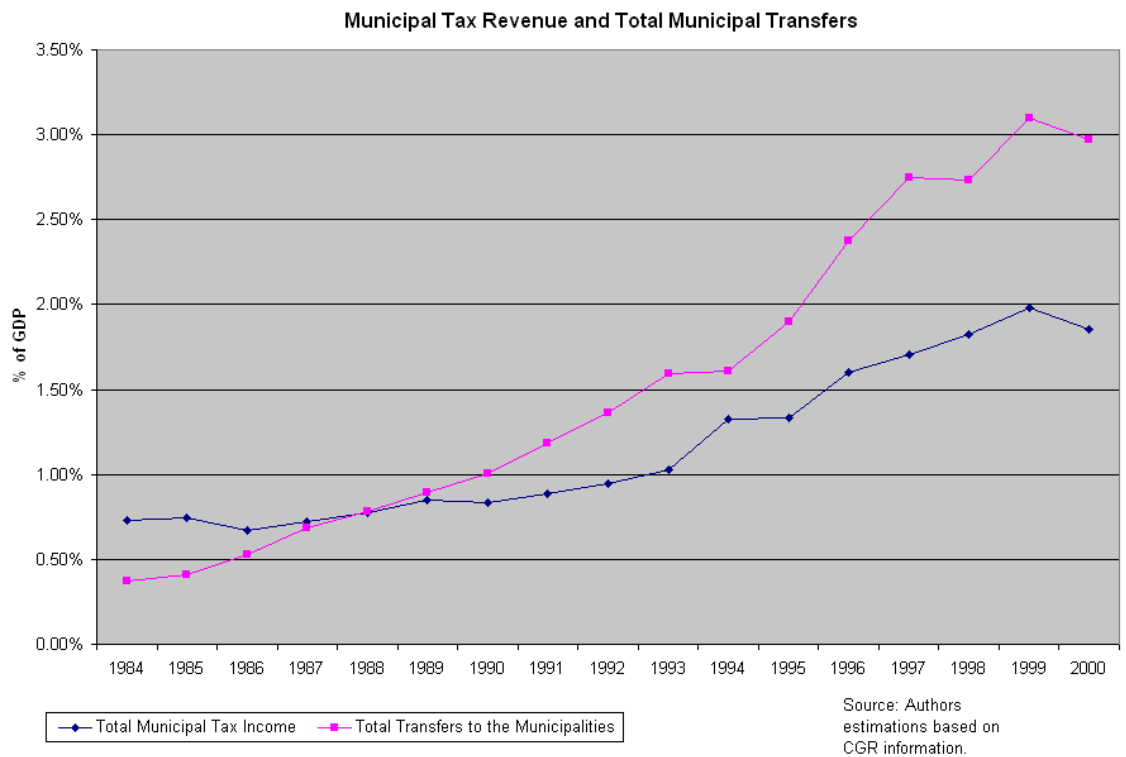
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