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FISCAL DECENTRALIZATION AND GOVERNMENT SIZE IN LATIN AMERICA

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This paper explores the link between fiscal decentralization and government size in Latin America. While most related work attempts to test Brennan and Buchannan's "Liviathan" hypothesis, here the emphasis is placed on a different channel: the potential for decentralization to aggravate the common pool problem. In addition to the degree of expenditure decentralization, we consider the importance of vertical fiscal imbalance, as well as some institutional variables related to the nature of intergovernmental relations which can affect the ability of some jurisdictions to shift the cost of their local programs onto others: the degree to which intergovernmental transfers are discretional, and the degree to which subnational governments have borrowing autonomy. We find that decentralization tends to produce larger governments, but this effect is particularly important in cases where vertical imbalance is high, transfers are discretional and the degree of borrowing autonomy of subnational governments is large.

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I. Introduction

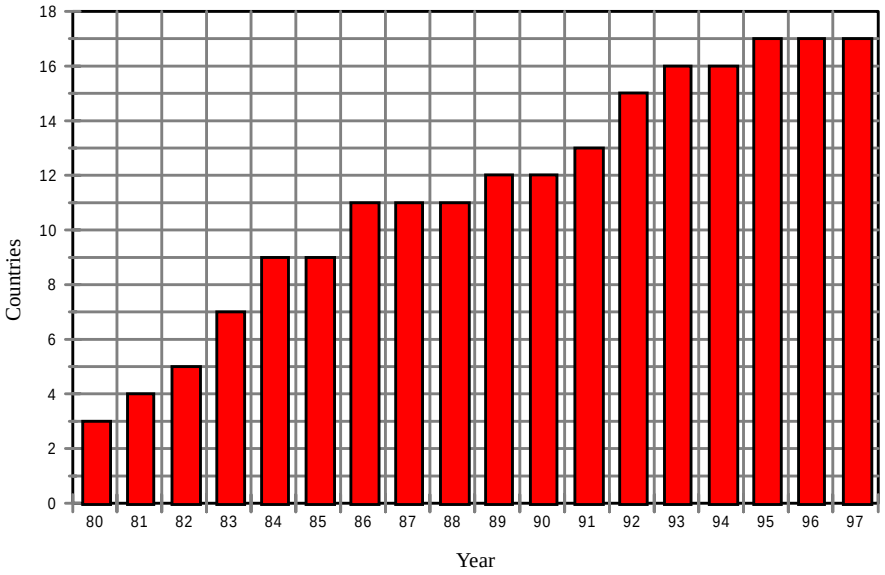
Latin America has had a long tradition of centralization, which dates back to the period of colonial administration. After the independence movement, centralized fiscal structures remained in place, partly due to colonial inheritance, and partly to the need that countries had to keep distant provinces together under one power. Even today, when compared with the industrialized world, the region as a whole remains highly centralized. While, on average, subnational levels of government are responsible for over 35 percent of total government expenditure in industrialized countries, in Latin America the corresponding figure is less than 15 percent.

However, during the past decade, together with the widespread return of democracy, several countries in the region have been going through significant processes of political and fiscal decentralization. The increase in political autonomy of subnational governments is reflected in Figure 1, which shows the number of countries in Latin America in which the local government executive authorities (mayors) are elected by the local population, as opposed to appointed by the central authorities. This number has grown from 3 in 1980, to 17 in 1995.[1] The trend toward fiscal decentralization is illustrated in Figure 2, which shows the unweighted average and the median of the degree of expenditure decentralization for fourteen Latin American countries, for which data was available for 1985, 1990 and 1995. The degree of expenditure decentralization, measured as the proportion of total government expenditures executed by subnational governments, increased by 4 percentage points during the last decade.

These figures suggest that, although the region remains highly centralized, the tendency toward decentralization is quite strong: not only is a larger portion of the general government budget executed from the subnational government levels; the autonomy that these governments have in deciding

[1] In six other countries, mayors are elected by the municipal councils, which in turn are elected by the population.

Figure 1. Number of Countries with Elected Mayors



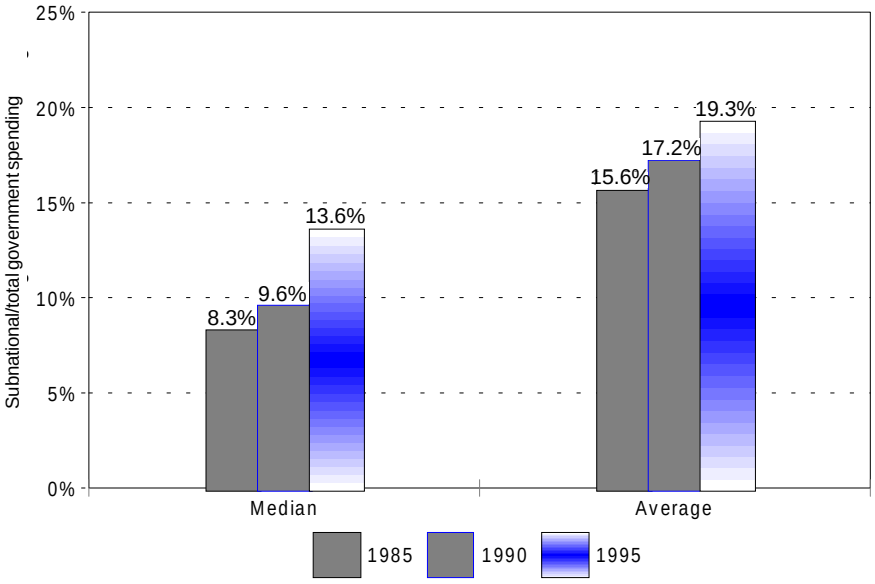
Source: Inter-American Development Bank (1997), based on survey and on constitutional texts.

how much to spend and what to spend on is increasing as well. In this context, a very important question is that of the possible effects of the move toward decentralization on fiscal performance. In particular, in this paper we will concentrate on the effects on government size.[2]

In contrast to the OECD countries where government size has experienced continuous growth in the last 35 years, reaching on average 49% of GPD in 1995, its evolution has been uneven in Latin America. After very rapid growth through the seventies and early eighties, the size of governments in Latin America declined significantly in the late eighties following the debt crisis,

[2] We could have focused, instead, on the effects of decentralization on government deficits, rather than the size of government. As we will see, however, the main channels we identify below through which decentralization can affect fiscal performance variables are more naturally linked to the size of government than to deficits. Nonetheless, we also tested for the effects of decentralization on deficits, but failed to find any significant effects.

Figure 2. Decentralization Trends in Latin American



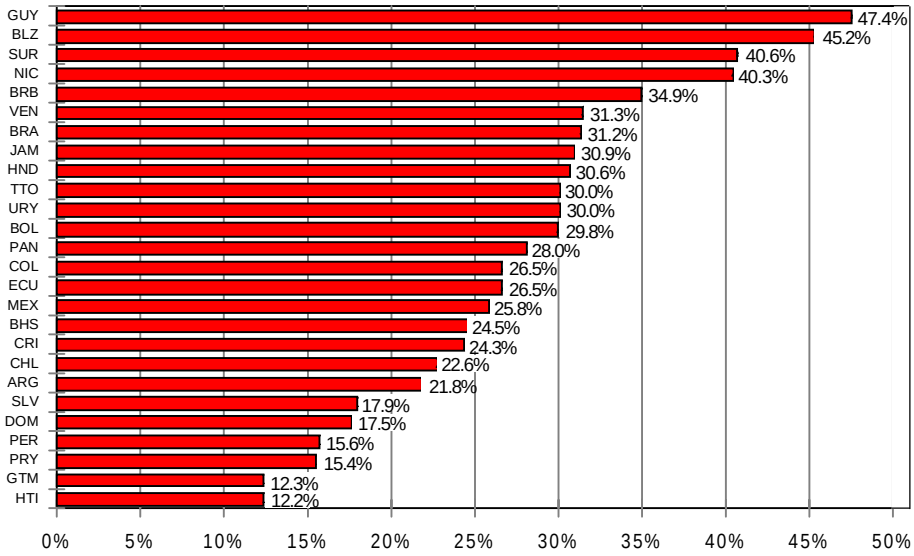
Note: The median and the average in the figure correspond to a set of 14 countries for which data was available for 1985, 90 and 95. Source: Inter-American Development Bank.

and has remained fairly stable since the beginning of the nineties. The average size of government —as measured by the expenditures of the consolidated public sector— stands today at 28% of GDP. There are, however, very wide differences across countries in this respect. Government size ranges from 12% of GDP in Guatemala and Haiti to numbers in excess of 40% of GDP in Belize, Guyana, Nicaragua and Suriname. The average government expenditure of the consolidated public sector for each country in 1990-95 is presented in Figure 3.[3]

In understanding the links between decentralization and the size of

[3] Given the lack of coverage of existing sources for public sector data, we use a database which was constructed based on the Recent Economic Development reports of the IMF, for 26 countries in Latin America and the Caribbean (See Stein, Talvi and Grisanti (1997) and Inter-American Development Bank (1997)).

Figure 3. Government Expenditures in Latin American (Consolidated public sector, in % of GDP); 1990-1995



Note: In the case of public enterprises, only capital spending was included. Source: Stein, Talvi and Grisanti (1997), based on Recent Economic Development Reports of IMF.

government, it is important to realize that the concept of decentralization is a complex one, involving a variety of dimensions: the assignment of expenditure and revenue responsibilities among different levels of government, the degree of political autonomy enjoyed by lower levels, the nature of intergovernmental transfers, and the degree of borrowing autonomy granted to lower level governments. It is not only the degree of expenditure decentralization, the most used decentralization variable, that may have an impact on aggregate fiscal performance. Other dimensions of decentralization, and the way in which the different dimensions are combined, may have an impact as well.

The rest of the paper is organized as follows: section 2 discusses the main channels through which decentralization could affect the size of government. Section 3 presents data on the different dimensions of

decentralization in Latin America, which will be used in the empirical analysis of section 4. Finally, section 5 concludes.

II. Potential Links between Decentralization and Government Size

The rationale for decentralization is not generally one of improving fiscal discipline or reducing the size of government. Out of the three functions into which government activities are typically divided for conceptual purposes —the stabilization function, the redistribution function, and the allocation function— it is in the last one where most benefits of decentralization emerge. Most authors agree that there are serious limitations regarding the ability of subnational governments to provide stabilization and redistribution services. With regard to allocation, decentralization can allow a closer match between the preferences of the population and the bundle of public goods and services chosen by government. If preferences are heterogeneous across jurisdictions, the decentralized decision maker can tailor the bundle of goods and services, in particular those whose benefits are geographically concentrated, to better suit the preferences of the population, instead of providing a "one size fits all" bundle for the country as a whole.[4] While this effect of decentralization may have a very important impact on the efficiency with which public monies are spent, it does not have a clear effect on aggregate fiscal performance variables such as government size and deficits. Decentralization, however, can potentially have important effects on aggregate fiscal performance, because it can affect the degree to which government decisions are subject to agency problems, and to coordination problems.

A. Decentralization, Agency, and Government Size

Decentralization can contribute to contain agency problems through different channels, by introducing elements of competition which increase

[4] See Oates (1972) for a very comprehensive treatment of the case for decentralization.

the incentives of governments to do the right thing. If there are democratic institutions at the subnational level, and these work fairly well, decentralization increases the visibility and accountability of government actions, and endows voters with more power to discipline public officials when they are acting according to self-interest.[5] To the extent that local services are financed by the jurisdiction's own revenues, so there is a close link between the benefits provided by these services and the costs to the local tax-payers, citizens will have strong incentives to monitor the local authorities closely. Thus, decentralization can lead to higher civic participation, and to better citizen control over the actions of the public officials. If in fact public officials have a preference for large governments, then decentralization could, through this channel, lead to smaller governments.

A counter-argument on the potential effect of decentralization and increased participation on government size is provided by Oates (1985). If decentralization leads to a better match between the population's preferences and the public services made available by government, particularly when civic participation is high, then it makes sense for people to entrust the government with more tax resources, since they know these resources are going to be spent in a way that closely matches their preferences.[6] Under this public-interest view of government, then, decentralization would lead to larger governments, although in this case the increase in the size of government would obviously not be welfare-reducing.

How can these contrasting arguments be combined? Let us assume that public officials have a preference for larger government. In this case, a higher degree of participation (the highest possible being direct democracy) could have two different effects: on the one hand, it would increase the control of the population over the actions of the public officials, reducing the agency

[5] If local democracies do not work well, however, decentralization could lead to capture of the local governments by special interest groups, clientelistic relationships between elected officials and powerful minorities, and other forms of corruption (See Prud'homme (1995) and Tanzi (1995)).

[6] Oates actually attributes this argument to John Wallis.

problem. This ensures that the actual size of the government will be closer to the population's desired size. But at the same time, it may increase the population's desired size, as suggested by Oates. Therefore, the effect on actual government size of an increase in political participation will be ambiguous.

There is some evidence, however, that suggests that increased political participation is associated to smaller governments. Pommerhenne and Schneider (1983) have explored the impact of direct democracy on government size for a sample of Swiss Cantons. Cantons that practice direct democracy, as opposed to representative democracy, have other things equal smaller governments This suggests that, at least in this case, the effect of participation on the control of the agency problem is more important than its effect on desired spending.

But there are other ways in which decentralization, by inducing competition, may reduce agency problems. Brennan and Buchanan (1980) have depicted the government as a monolithic "Leviathan" seeking to maximize revenues by exploiting its monopoly power over the tax base. Under decentralization, mobility across jurisdictional borders assures some degree of competition for the tax base among governments, who compete to lure taxpayers into their territory by providing a more attractive fiscal bundle. This competition imposes constraints on the fiscal appetite of governments. In this way, mobility of individuals across jurisdictions brings the market for public goods and services closer to the "perfectly competitive" outcome. An important implication of the Leviathan hypothesis, then, is that "total government intrusion into the economy should be smaller, *ceteris paribus*, the greater the extent to which taxes and expenditures are decentralized" (Brennan and Buchanan, 1980, p.15). Naturally, this argument should be more powerful in societies where mobility of individuals across jurisdictions is high (as is the case in the U.S.), and less so in societies where mobility of individuals across jurisdictions is smaller, as is probably the case in most of the Latin American countries considered in this study.

Several authors have tested the "Leviathan" hypothesis, with diverse

results. The original test was performed by Wallace Oates (1985), who explored the relationship between decentralization and government size for a cross-section sample of 43 countries, as well as for the U.S. states, finding no support for the Leviathan hypothesis. More recent studies such as Marlow (1988), Grossman (1989), and Ehdaie (1994) do find support for the Leviathan. While Marlow and Grossman use a time-series approach for the US, Ehdaie explores the hypothesis in a cross section of 30 countries.[7]

The studies by Grossman and Ehdaie are particularly interesting, since they explicitly explore Brennan and Buchanan's caveat that the possibility of collusion among different units of government should be included among "other things equal."[8] Collusion, in this framework, is given by tax-sharing arrangements among different units of government. Consider a country where expenditures are fairly decentralized, but the central government collects all the taxes, which are then shared with lower level governments. This form of decentralization would not be constraining the monopoly power of the taxing authority, since it introduces no competition for the tax base. To control for the possibility of collusion, Grossman includes in his analysis a variable which captures the degree of vertical fiscal imbalance of state and local governments: the share of grants-in-aid in their total receipts. He finds that the larger the share of grants, the larger the government, lending support to the hypothesis that decentralization can restrain the behavior of revenue-maximizing governments, but tax-collusion can weaken this restraint. In contrast to Grossman's findings, in Ehadie (1994) the collusion variable does not have significant effects.

In summary, there are two potentially important channels through which decentralization could lessen the effects of agency problems, thus reducing the size of government.[9] The first one involves increased political competition

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[7] Forbes and Zampelli (1989) and Zax (1989) studied the Leviathan hypothesis at the county level in the US. Here, again, the evidence is mixed.

[8] See Brennan and Buchanan (1980, p. 1985).

[9] As we mentioned in the introduction, neither of these channels should be expected to affect deficits.

and participation. The second one involves tax competition. Interestingly, while through these two channels decentralization will presumably have constraining effects on the size of government, these effects could disappear if the degree of revenue decentralization is much smaller than that of expenditure decentralization, i.e., if there is a large degree of vertical fiscal imbalance. In the first case, because the incentives for the population to closely monitor the performance of the local public officials will be much greater if the local government expenditures are financed through local taxation. In the second, because the degree of tax competition does not really increase if expenditures are decentralized, while revenues stay concentrated in the hands of the central government, who then shares the taxes with lower level governments via transfers.

B. Decentralization and the Problem of the Commons

The control of the Leviathan has been the most widely studied link between decentralization and the size of government. Another important way in which decentralization could affect government size is through its effect on the problem of the commons. This problem arises due to an important characteristic of many government programs: while they tend to generate benefits that are concentrated, they are often financed from a common pool of resources. Under some institutional arrangements regarding the process of fiscal decision-making, this can lead to overutilization of the common pool of resources, as those who benefit from the programs fail to internalize their full cost. Weingast, Shepsle and Johnsen (1981), for example, have studied the commons problem at the level of the legislature, showing how it can lead to excessive spending due to the geographical interests represented by the legislators. Concentrating fiscal decisions in one central figure such as the Finance Minister, who typically responds to general interests rather than to geographical or sectoral interests, should reduce the extent to which fiscal decisions are subject to the commons problem.[10]

[10] For models of the commons problem at the level of the cabinet, see Velasco (1994) and von Hagen and Harden (1995).

How does decentralization affect the degree to which an economy is subject to the commons problem? Consider first a country where all government programs with national benefits (such as defense and foreign relations) are centralized, while all programs with local benefits are decentralized. Assume also that all local programs are financed with local revenues. In such an ideal case, decentralization would reduce the problem of the commons to a smaller local game, since there are no programs with local benefits financed with national resources. Local authorities would not have incentives to overexpand the budget, since they cannot shift the costs of their programs onto others outside their jurisdiction.

However, the ideal case depicted above is quite far from the reality of most countries: decentralization is typically much higher in the expenditure dimension than in the revenue dimension. Inherent to the decentralization process is the following asymmetry: on the expenditure side, there are a large number of important "local" public goods and services which are in principle better provided by lower level governments. On the revenue side, however, finding good tax bases for state and local governments is a difficult task, due to mobility of tax bases, equity considerations, and economies of scale in tax administration.[11] This asymmetry between expenditure responsibilities and revenue capacity at the subnational level generates a gap, known as vertical fiscal imbalance, which is typically bridged through the use of transfers from the central government.

The problem is that heavy reliance on transfers, unless these are very clearly defined, with resources allocated according to objective criteria which cannot be easily manipulated by recipient governments, and with little room for discretionality and bargaining between the different levels of government, may weaken the budget constraints of the subnational governments. When this happens, there is scope for lower level governments to shift the cost of local programs onto others outside the jurisdiction, which constitutes the

[11] On the problem of tax assignment among levels of government, see for example Musgrave (1983), Shah (1994), Oates (1994) and Norregaard (1997).

basis of the commons problem. This problem may become even more serious in cases where subnational governments have a large degree of borrowing autonomy, in particular if the central government finds it difficult to commit not to bail them out in case of financial trouble. In this case, subnational governments may overborrow and overspend, and then shift the burden onto the central government.

The problem of the commons for the fiscal federalism case, where there are multiple layers of government, and the related problem of bailouts of lower level governments has been receiving increased attention in recent years, in part as a result of the advance toward monetary integration in the European Union. In fact, one of the most important arguments in favor of the controversial fiscal constraints included in the Maastricht criteria is the potential for bailouts (or inflationary financing of deficits) by a European Central Bank.

There are several versions of the problem, which introduce different forms of interaction between the central government and the lower level jurisdictions, or among these jurisdictions, which result in different sources of coordination problems. For example, Canzoneri and Diba (1991), who study the effects of financial integration in the European Union and explore the rationale for fiscal constraints, assume that countries decide on their expenditures independently, and do not take into account the effect of their own spending on the common interest rate. This leads to overspending. Under certain conditions, they show that governments may also compete for Central Bank seignorage, which exacerbates the incentives to overspend.

Sanguinetti (1994), who studied the problem of the commons associated to decentralization in Argentina, compares the uncooperative (decentralized) solution with the cooperative (centralized) solution, where all externalities are internalized. In his uncooperative case, he assumes that each jurisdiction can in effect decide over the size of the transfer they receive from the central government. This assumption, which at first sight may seem unrealistic, is similar to the one made by Weingast, Shepsle and Johnsen (1981) in their

influential paper about pork barrel projects. In their work, each jurisdiction defines the size of their project, and the Congress validates these demands. This feature of the model is justified by the authors on the basis of evidence on the prevailing practices of universalism (by which every jurisdiction receives a project) and reciprocity (by which even those who do not benefit from a program support it in exchange for reciprocal support by other districts).

Persson and Tabellini (1994) present a different kind of model, but with similar results.[12] They assume, following work on political economy of trade policy by Grossman and Helpman (1994), that instead of being able to completely control transfers sent to them, the jurisdictions will bribe the federal decision-makers to obtain a larger amount of common resources. As a result, the size of government ends up being too large.[13] As we discuss the different variables that characterize the nature of intergovernmental relations in Latin America, including the nature of transfers, the degree of borrowing autonomy enjoyed by the lower level governments, and the commitment capacity of the federal government in terms of a no- bailout rule, we will see that while the Persson and Tabellini (1994) story seems more appropriate for some intergovernmental arrangements the Sanguinetti (1994) story seems more appropriate for others.

[12] For other formalizations of coordination or bailout problems applied to decentralization see Gamboa (1995), Wildasin (1997) and Barrow (1986).

[13] Different authors endow different meanings to the centralization and decentralization labels. Persson and Tabellini (1994) use the term "centralization" to depict the situation where revenues are centralized, and local programs for each jurisdiction (which one could also interpret as transfers) are chosen by the federal government, as a function of the "compensation" schedule offered by the different jurisdictions. In their "decentralized" case, all expenditures are decentralized, and are financed with local revenues. The main difference among these two situations is given by the centralization or decentralization of the revenue sources. In Sanguinetti (1994), in contrast, the revenue sources in his cooperative and uncooperative regimes are national, and the difference pertains to which level of government determines local expenditure.

III. Decentralization in Latin America[14]

In this section, we will characterize the extent and nature of decentralization in Latin American countries, based on the following four variables: a) the degree of expenditure decentralization; b) the degree of vertical fiscal imbalance; c) the degree of discretionality in the system of intergovernmental transfers; d) the degree of borrowing autonomy of state and local governments. Most of the data was obtained from a decentralization survey conducted at the Inter-American Development Bank, which was responded by government officials in 20 countries in the region. Where data needed to calculate expenditure decentralization or vertical imbalance was missing from the survey, we relied on a variety of country studies to fill in the blanks.

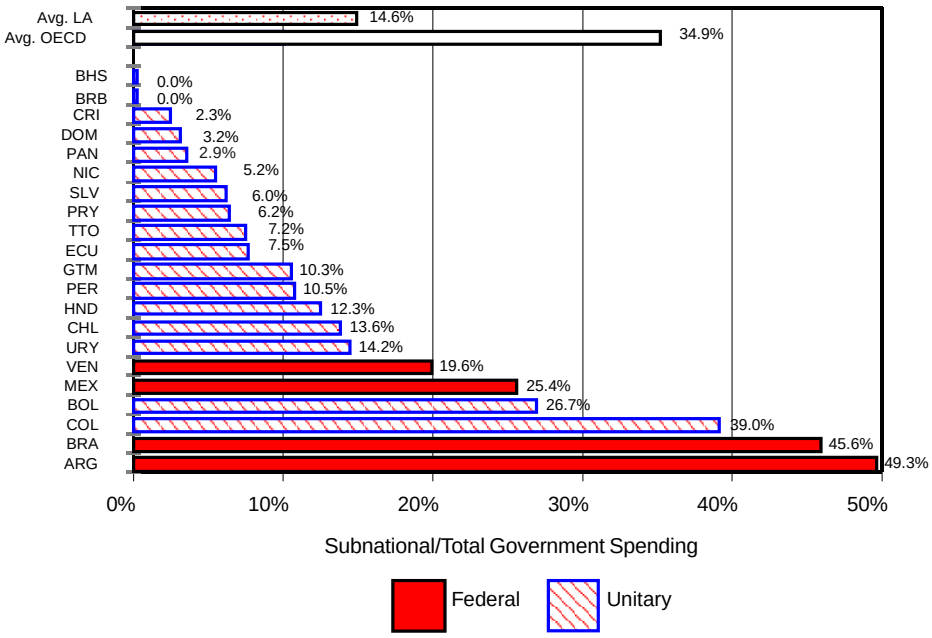
A. The Degree of Expenditure Decentralization

In spite of recent trends toward decentralization in several countries, Latin America is still characterized by a high degree of centralization. Figure 4 shows the degree of decentralization, measured as the percentage of total government spending executed by state and local governments, in countries in Latin America and the Caribbean. For the sake of comparability, we included in the figure the average degree of decentralization for the countries in the OECD. As we mentioned in the introduction, the difference between the two sets of countries is substantial. Perhaps more important for the purposes of our paper, the figure also shows the wide variety of experiences in the region regarding the degree of decentralization. While in most countries less than one government dollar out of ten is spent by subnational governments, there are others, particularly Argentina, Brazil and Colombia, that are quite decentralized.[15]

[14] This section draws heavily on Stein, Talvi and Grisanti (1997)

[15] Probably the most important determinant of decentralization is country size. The political organization of government (unitary or federal) is also important. Federal countries are

Figure 4. Expenditure Decentralization in 1995



Note: The table includes all countries in Latin American for which decentralization information was available. Source: Inter-Development Bank (1997) based on survey and various country studies.

B. The Degree of Vertical Fiscal Imbalance

The problem of decentralization goes beyond the assignment of expenditure responsibilities among the different levels of government, according to the level which, given the characteristics of each public good or service, will be in a better position to provide it efficiently. How the provision of these services by each level is financed is a crucial dimension

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typically more decentralized than unitary ones. Ethnic fractionalization has also been found to be an important determinant of the degree of expenditure decentralization (see Paniza, 1997).

of decentralization. The literature on fiscal federalism offers important guidance on the issue of tax assignment. In a nutshell, subnational governments should avoid collecting taxes on mobile tax bases, redistributive taxes, taxes which are liable to be exported to other jurisdictions, taxes on unevenly distributed tax bases, those subject to large cyclical fluctuations, and those that involve significant economies of scale in tax administration, or that require information at the national level. All these taxes, for efficiency or equity considerations, should ideally be left to the central government.

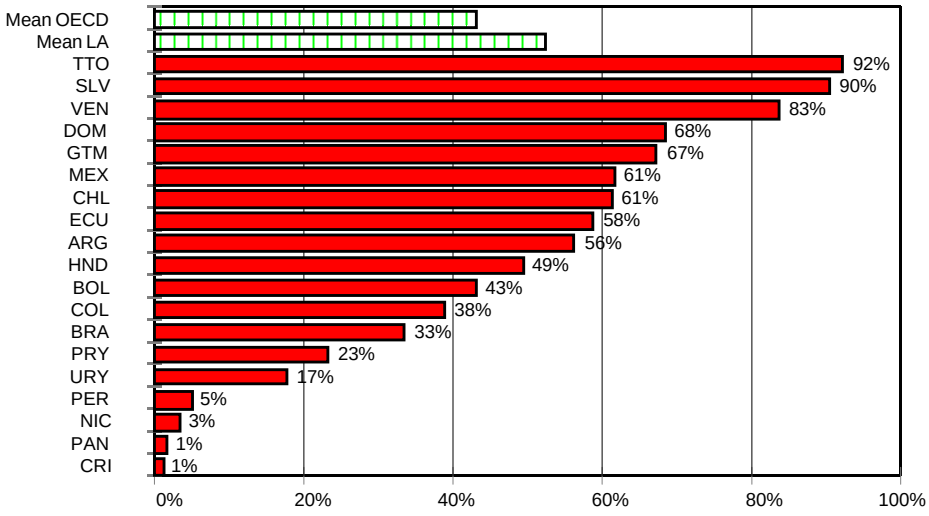
It should be clear from the above list that the conditions for a tax to be a "good" local tax are rather restrictive. As a result, the potential revenue from the tax bases that can efficiently be exploited locally, which include property taxes, vehicle taxes and user charges, is more limited than the spending obligations typically assigned to subnational governments in decentralized economies. For this reason, decentralized countries often end up having a large degree of vertical imbalance. Figure 5 presents the degree of vertical imbalance for each country in Latin America. For comparison, we included in the figure the average for the OECD countries.[16] Two things can be concluded from the figure. First, vertical imbalance in the region is higher than that in industrialized countries. While the average for countries in Latin America is 52%, that in OECD countries is 42%. Second, within our region vertical imbalance varies substantially from country to country.[17]

The high degree of vertical imbalance in decentralized countries in the region creates potential for a commons type problem to develop, in particular

[16] The measure of vertical imbalance is defined as the ratio of intergovernmental transfers from the central government, including tax sharing, over total revenues (own plus transferred) of the subnational level.

[17] While we do not find a clear association between decentralization and vertical imbalance in our sample of Latin American countries, other authors have found a positive association for developing countries. Using a larger sample of developing countries, Kim (1995) finds that vertical imbalance increases with decentralization. Bahl and Linn (1992) find a similar pattern in a sample of city governments. Their evidence suggests that, in the developing world, vertical imbalance may worsen as countries advance in their decentralization processes.

Figure 5. Vertical Fiscal Imbalance



Note: Barbados and Bahamas had up to 1995 a single level of government. Thus, the concept of vertical imbalance does not apply to these countries. Source: Inter-American Development Bank (1997) based on survey and various country studies.

when combined with highly discretional transfer systems, or a large degree of borrowing autonomy at the subnational level.

C. Discretionality in the Transfer System

Vertical imbalances are mostly covered through transfers from the central government. There are many important angles to the design of intergovernmental transfers. Given the scope of our paper, here we concentrate on just one which, we believe, may have an important impact on aggregate fiscal performance: the degree to which transfers are discretional. The issue is potentially important, since more than a third of the transfers in Latin America are discretional in nature.[18]

[18] See Inter-American Development Bank (1997), table 3.4, p. 169.

Transfers can be discretional in terms of the determination of the total amount to be transferred, or with respect to the allocation. Transfers which are discretional in both dimensions leave the central government a lot of flexibility to direct resources to the jurisdictions with the greatest needs. But for the same reason, they are more likely to result in soft budget constraints for the subnational governments, and thus do not provide adequate incentives for fiscal responsibility. Our view is based on the belief that, under discretion, transfers will tend to be allocated to those jurisdictions that are in financial strain, or simply have a gap between their expenditures and their available resources.

A subnational government could spend excessively, declare that it has no money to pay salaries of public employees, and ask the central government for a bailout. They could cast the blame on the central government, claiming that they did not get their fair share to begin with. It may be more difficult for the central government to commit not to extend supplementary transfers when they have the discretion to do so, compared to a rules-based approach given by predetermined formulas. If commitment on the part of the central government is weak, the different jurisdictions will feel that they can spend beyond their means and shift part of the costs of the programs they undertake onto the rest of the country. This can lead to excessive aggregate spending.

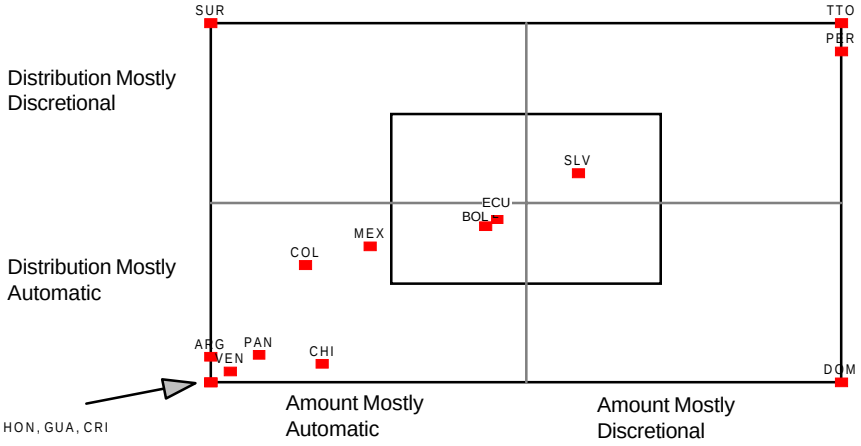
Alternatively, discretional transfers could be allocated according to political considerations. For example, they could be used as retribution for favorable votes by the district's representatives in Congress, or simply reflect the different political skills of local public officials in appropriating a large share of the common pool of resources. In this case, a system with discretional transfers would correspond quite well to what Persson and Tabellini (1994) consider the "centralized" case, where districts have to bribe the federal authorities in order to obtain a larger transfer.

In some cases, the total pool of the transfer is defined in an ad-hoc way, but the allocation follows a pre-specified formula. In such cases, the different jurisdictions will probably bargain with the central government for an

increased pool, but the expected returns from this process are smaller than under full discretion, as they will only receive a small part of any increase in the total transfer. In very few cases, discretionality applies to the allocation, but not to the total amount. If these transfers are small, the consequences for aggregate fiscal performance will not be too large. However, they may not generate the right incentives for fiscal discipline, at least in the smaller jurisdictions, as the transfer may still be large compared to the budgets of some of them.[19]

Figure 6 shows the extent to which the transfer system in each country is characterized by discretionality, both in the determination of the total pool, and its allocation. The source for this information is our survey, which provided us with data on the most important transfers, including the method

Figure 6. Discretionarity in the Transfer System



Source: Inter-American Development Bank (1997) based on survey. Brazil, Paraguay and Uruguay did not report amounts transferred, and thus were excluded from the figure.

[19] An example of these are the Aportes del Tesoro Nacional in Argentina. They are a small portion of total transfers, but represent la large share of the revenue sources of some of the smaller provinces.

of determination of the total pool, of the allocation among the different jurisdictions, and the total amount corresponding to each transfer in 1995.[20]

While there are many countries where discretionality does not play a role, there are several where discretional transfers represent a significant part of total transfers, and a few, in particular Trinidad and Tobago and Peru, where all transfers are discretional. An index of discretionality of the intergovernmental transfer system, which simply adds the degree of discretionality in both dimensions (determination of total pool and allocation) will be later used in the regressions for the size of government, as part of a measure of soft budget constraints.

D. Subnational Government Borrowing Autonomy

The rules regarding borrowing by subnational governments in Latin America vary considerably from country to country. Borrowing autonomy, like discretional transfers, can potentially lead to soft budget constraints for the subnational governments. At the heart of the issue is a commitment problem: it is often very difficult for central governments to commit not to bail out state and local governments when they are in financial trouble.

A case can be made for state and local governments to have some capacity to borrow. Because the benefits of investments such as schools or roads are spread over time, it makes sense to borrow (at least to some extent) so that payments are spread over time as well, rather than have the current taxpayers foot the whole bill today. State and local governments, however, might want to borrow beyond what is socially optimal if they think they can shift part of the cost of repayment onto others outside the jurisdiction. Moreover, when the risk of bailouts exists, markets are clearly not an adequate disciplining device. If a lender expects a central government bailout, they will gladly

[20] The figure excludes those countries for which we did not have complete information on the amounts transferred, such as Brazil, Paraguay and Uruguay.

accommodate the borrower. In this case, constraints on subnational government borrowing may be the right policy.[21]

What determines the ability of central governments to commit not to bailout local governments? Eichengreen and von Hagen (1996) have argued that an important factor is the degree of vertical imbalance. If the subnational governments have robust tax bases available to them, and generate a large part of their revenues themselves, central governments will find it easier to ask them to bear the cost of adjustment in case of financial difficulties. If, in contrast, subnational governments have weak tax bases, and most of their resources are transfers from the central government, it will be very costly for the subnational government to resolve the crisis by itself, and therefore it will become difficult for the central government not to extend a bailout. This idea has been used by these authors to argue against the need for numerical fiscal constraints in the European Union.[22]

Another factor that affects the degree of commitment of the central government is the existence of public banks owned by subnational governments. In cases where the subnational governments own banks, often these banks are the primary source of government debt. Particularly in the case of large jurisdictions, it might be difficult for the Central Bank not to rescue a financially troubled state bank, since failure to do so might result in a widespread bank run. Knowing this, state banks and governments may not be facing hard budget constraints. Central bank bailouts to state banks that are "too big to fail" have been important in some of the larger Brazilian states, such as Sao Paulo and Rio de Janeiro.[23]

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[21] See Ter-Minassian (1995) and Ter-Minassian and Craig (1997) for a description of different types of arrangements regarding subnational government borrowing, and their effectiveness.

[22] Probably what matters is not just vertical imbalance, but also the capacity of subnational governments to decide on issues of tax policy. There are several countries where subnational governments collect important taxes, but do not control tax rates or the tax base. An example is Colombia.

[23] See Wildasin (1997) for a model of bailouts that delivers the “too big to fail” result, in the presence of important inter-jurisdictional externalities.

In cases where subnational governments have a large degree of borrowing autonomy and the federal government cannot commit to a no-bailout rule, subnational governments may overborrow, overspend, and then receive ex-post transfers (bailouts) from the central government. This type of situation actually corresponds quite well to the assumption in Sanguinetti (1994) that subnational governments get to choose their own transfers.

The previous discussion has focused on the conditions for borrowing autonomy to be problematic. We will now focus on the extent to which there is subnational borrowing autonomy in Latin American countries. For this purpose, we obtained through our survey detailed information on a variety of aspects that can affect the degree of borrowing autonomy. The first four aspects relate to constraints on subnational borrowing. Are subnational governments allowed to borrow at all? To what degree is the borrowing decision autonomous, and which level of government has to authorize borrowing operations? Are there numerical constraints on borrowing by subnational governments, and what do they consist of? Are there limitations on the use of debt by these governments? (For example, limits such as the "golden rule", which limits borrowing to investment purposes). The last two aspects relate to borrowing practices which might weaken these constraints: Do subnational governments own banks, and are these important? Do they own public enterprises with liberal borrowing procedures? Table 1 summarizes the information gathered for each country.

Taking into account all the aspects mentioned above, we built an index of borrowing autonomy at the subnational government level for the countries in Latin America and the Caribbean. Obviously, countries where subnational governments cannot borrow have 0 autonomy. Out of the other criteria, higher weights were given to the issue of bank ownership by subnational governments, and the issue of government authorization. The value of the index (which may vary between 0 and 4) for each of the countries is presented in figure 7.[24]

[24] For a detailed explanation of the formula used to construct the index, see Inter-American Development Bank (1997), p. 188.

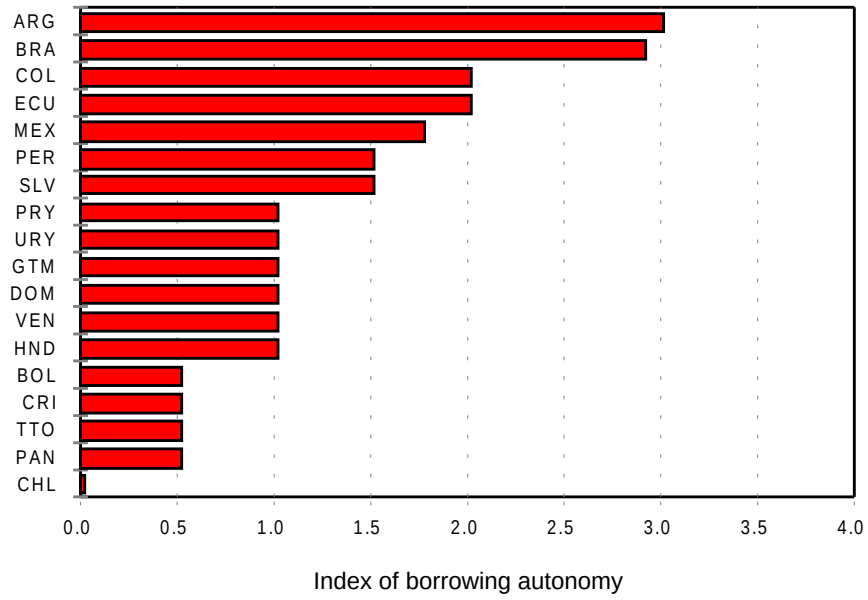
Table 1. Borrowing Autonomy in Latin America

	Borrowing by SNGs not allowed	CG approval required on all SNG debt	Debt cannot be used for current expenditures	Numerical debt limits in all or most SNGs	SNGs own banks	There are important SNG-owned firms with liberal borrowing practices	Tax-sharing used to guarantee SNG debt
Argentina			✓	✓	✓	✓	✓
Bahamas	✓						
Bolivia		✓	✓				✓
Brazil		✓			✓	✓	✓
Chile	✓						
Colombia			✓	✓	✓		✓
Costa Rica			✓	✓			
Ecuador			✓			✓	✓
El Salvador							
Guatemala		✓					
Honduras		✓					
Mexico			✓			✓	✓
Panama		✓	✓				
Paraguay							
Perú			✓				
Dominican Republic		✓					
Trinidad & Tobago		✓					
Uruguay							
Venezuela		✓					

Source: Inter-American Development Bank (1997), based on survey.

These four variables, expenditure decentralization, vertical imbalance, discretionality in the transfer system and borrowing autonomy characterize the extent and nature of decentralization in the region. In the next section, we will explore the impact that different combinations of these variables have on the size of government.

Figure 7. Borrowing Autonomy



Source: Inter-American Development Bank (1997) based on survey.

IV. Empirical Analysis

Most of the empirical work linking decentralization and government size, starting with Oates (1985) attempts to examine Brennan and Buchanan's Leviathan hypothesis. Instead, the main channel that we have in mind when exploring the relationship between these variables is the potential of decentralization to aggravate the commons problem. We should note, however, that our purpose is not that of testing a well specified theory of

decentralization and government size, but rather to uncover some interesting stylized facts regarding the relationship between these variables.

What impact would we expect our variables to have on the size of government? Let us begin with expenditure decentralization. Our discussion suggests that decentralization could reduce government size if the degree of vertical imbalance is low, but increase it if the degree of vertical imbalance is large. So the theory behind the commons problem does not give us a clear prior of what to expect in terms of the pure effect of the degree of expenditure decentralization on government size.

The expected effects of vertical imbalance are more clear-cut. The larger the degree of vertical imbalance, the larger the potential for a commons problem, since a large vertical imbalance increases the incongruence between those who benefit and those who pay for government programs. However, we do not expect this effect to be the same for countries with different degrees of decentralization. For example, in a country where 95 percent of government spending corresponds to the central government, we would not expect large differences in government size, whether the remaining 5 percent spent at the local level is financed with own revenues, or through central government transfers. In contrast, vertical imbalance is expected to have a larger impact in cases where the extent of expenditure decentralization is larger. For this reason, rather than exploring the effects of vertical imbalance alone, we will instead consider the product of expenditure decentralization and vertical imbalance as an explanatory variable. This product represents the extent to which there are government programs characterized by local benefits (and provided by the local governments) which are financed out of national taxation.

Finally, we also want to capture in some way the effect of having hard or soft budget constraints at the subnational level. We use the product of vertical imbalance and borrowing autonomy as an indicator of soft budget constraints. Notice that this product is large only when both components are large. In other words, a high degree of borrowing autonomy *per se* does not necessarily induce soft budget constraints. It will only do so if the government finds it

difficult to commit to a no bailout rule. This lack of commitment is proxied here by the degree of vertical imbalance, following the arguments in Eichengreen and von Hagen (1996). We expect, then, that the product of vertical imbalance and borrowing autonomy will have a positive impact on government size. This impact, however, should be larger the larger the degree of expenditure decentralization. For this reason, we will explore the impact of the product of these three variables on government size.[25] This triple product, we believe, is the variable which captures more closely the potential for decentralization to lead to a common pool problem such as that in Sanguinetti (1994).

As an alternative measure of the potential for common pool problems to develop, we used the degree of discretionality in transfers in place of borrowing autonomy, interacted with vertical imbalance and expenditure decentralization. If one assumes that political bargaining plays a major role in the total size and the allocation of transfers when these are discretional, the product of these three variables measures the proportion of the total government budget that i) represents the financing of local programs with national resources and ii) is subject to political bargaining. In this sense, the product of these variables captures something closer to the Persson and Tabellini (1994) version of the common pool problem associated to decentralization, i.e. the problem when subnational jurisdictions bribe national authorities to receive a larger amount of common resources. A drawback of using discretionality is that data is available for a smaller set of countries, because a few of them (namely Brazil, Paraguay and Uruguay) did not report the value of each of its transfers, a necessary ingredient to calculate this variable.

Our dependent variable is the size of the consolidated public sector as a share of GDP, averaged between 1990 and 1995. As mentioned in the introduction, data on public sector size is taken from Stein, Talvi and Grisanti (1997), who constructed it based on the Recent Economic Development

[25] More precisely, the variable we use is ED . VI . (1 + BA).

Reports of the IMF. The use of this data was necessary due to the lack of coverage of standard sources of public sector data, such as the Government Financial Statistics of the IMF.

As control variables, we used the level of public debt in 1989, the degree of openness of the economy, measured as the share of exports plus imports over GDP, and the share of the population over 65 years of age.[26] Initial public debt is expected to have positive effects on total public expenditures through its effect on interest payments. Openness is expected to have positive effects on the size of government, following recent findings by Rodrik (1996).[27] The age variable is expected to have positive effects as well, through its effect on the social security sector.

The general specification of our empirical model is:

$$GOVSIZE_i = \beta' X_i + \gamma DEC_i + u_i, \quad (1)$$

where X_i represents the vector of control variables, DEC_i represents our decentralization variables (either expenditure decentralization or the interactive variables described above) and u_i is the error term. Since we only had cross-sectional data for 19 countries in Latin America and the Caribbean, we obviously face a problem of lack of degrees of freedom. For this reason, we added to the sample the countries in the OECD.[28]

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[26] Data on initial level of debt for Latin American countries was constructed by Stein, Talvi and Grisanti (1997) based on the IMF's Recent Economic Development Reports. Data on openness and the share of population over 65 years of age come from World Development Indicators of the World Bank. As an alternative to the age variable, we also performed another set of regressions (not reported here) using per capita GDP as a control variable (see Inter-American Development Bank, 1997).

[27] Rodrik argues that the explanation for this empirical regularity is that open economies are exposed to significant external risk, and that a large government sector reduces the exposure to this risk.

[28] Data on decentralization and vertical imbalance for the OECD countries was obtained from the IMF Government Financial Statistics (1996). Data on the size of the public sector and on initial debt comes from OECD National Accounts (1996). Data on borrowing autonomy was kindly provided by Jurgen von Hagen.

Table 2 presents the results of our regressions for our sample of Latin America and OECD countries. All control variables have the expected sign, and are significant in most regressions. The degree of expenditure decentralization has a positive effect on the size of government. These effects appear to be quite large: if the difference between two countries in terms of the degree of decentralization is 20 percentage points, the more decentralized one is expected to have, on average, a government sector which is four percentage points of GDP larger than in the less decentralized country.[29] As we expected, the product of decentralization and vertical imbalance has positive and significant effects on government size. This means that decentralized countries with a high degree of vertical imbalance have, on average, larger governments.

The interaction between expenditure decentralization, vertical imbalance and borrowing autonomy also has the expected sign, and is highly significant for the case of Latin America.[30] We should note that, for this variable, we allowed different coefficients for Latin America and the OECD. The reason is that the measure of borrowing autonomy is not perfectly comparable across regions.[31] In contrast to the Latin America results, the effects are positive but not significant in the case of the OECD countries. If we include in the

[29] Similar results were obtained when GDP per capita was used as a control variable, instead of the age variable.

[30] Argentina is an outlier in regressions (5) through (8), and was excluded from the sample. In this country, the size of government is much smaller than would be predicted according to variables in the regression. A possible interpretation for this is that the 1991 Convertibility Law increased the commitment of the central government not to bail out provinces in financial trouble, as it restricts the ability of the Central Bank to increase the monetary base without backing of international reserves. In fact, the central government extended extraordinary transfers to provincial governments in 1989 and 1990, but has not done so since 1991. In this case, then, the product of vertical imbalance and borrowing autonomy may be underestimating the stringency of the budget constraint.

[31] Therefore, the specification of the regressions which include borrowing autonomy are of the form $GOVSIZE_i = \beta' X_i + \gamma_{LA} LA_i . DEC_i + \gamma_{OECD} OECD_i . DEC_i + u_i$, where LA_i and $OECD_i$ are regional dummies for Latin America and the OECD.

Table 2. Decentralization and Government Size (Cross Section OLS Regressions, Average 1990-1995), Latin America and OECD

Size	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Institutional Variables								
Exp. Decentralization		0.21					0.13	0.12
(T-Stat)		2.71					1.20	1.15
ED.VI			0.25					
(T-Stat)			2.06					
LA ED. BA				0.09				
(T-Stat)				2.67				
OECD ED. BA				0.03				
(T-Stat)				1.80				
LA ED . VI . BA					0.28		0.21	
(T-Stat)					3.36		2.06	
LA ED . VI . DT						0.47		0.38
(T-Stat)						2.65		2.00
OECD ED . VI . BA					0.05	0.04	0.02	0.01
(T-Stat)					1.61	1.19	0.50	0.31
Controls								
Constant	0.10	0.05	0.08	0.02	0.00	0.00	-0.01	-0.01
(T-Stat)	3.48	1.67	2.69	0.53	0.01	0.01	-0.22	-0.23
Debt at 1989	1.79	2.02	2.09	7.04	8.18	7.72	8.13	7.76
(T-Stat)	2.66	3.44	3.40	1.73	2.09	1.85	2.09	1.87
Openness	0.10	0.11	0.07	0.08	0.06	0.05	0.08	0.07
(T-Stat)	3.01	2.65	1.83	1.69	1.41	1.12	1.73	1.45
Population > 65 Years	2.21	2.01	2.22	2.34	2.60	2.74	2.42	2.57
(T-Stat)	10.36	8.15	9.92	7.96	9.52	8.98	7.83	7.59
R^2	0.74	0.84	0.83	0.85	0.86	0.87	0.87	0.87
DF	39	32	32	28	28	25	27	24
N	43	37	37	34	34	31	34	31

Notes: Government size is measured by the total expenditures of the consolidated public sector as percentage of the GDP, ED = Expenditure Decentralization, VI = Vertical Fiscal Imbalance, BA = Borrowing Autonomy, DT = Discretionality in Tranfers, LA = Latin America, OECD = Organization for Economic Co-Operation and Development, DF = Degrees of Freedom, N = Sample Size.

analysis both expenditure decentralization and the triple interaction term, decentralization loses significance. This suggests that, although decentralization matters, whether intergovernmental fiscal relations are structured in a way which promotes fiscally responsibility matters even more. Results are similar when discretionality in transfers is used instead of borrowing autonomy as an indicator of soft budget constraints, for the case of Latin American countries.[32]

It could be argued that these results could be due in part to differences across regions, rather than differences across countries in Latin America. In fact, OECD countries have larger public sectors, and they also tend to be more decentralized. In order to check this, in Table 3 we present the results of our regressions when only Latin American countries are included, even though we realize that we are seriously lacking in terms of degrees of freedom. The results are even stronger, with most decentralization variables significant at the 1 percent level, whether the age variable or per capita income are used as controls.

V. Concluding Remarks

Decentralization has the potential to improve on resource allocation by bringing fiscal decisions closer to voter preferences. It can also improve on the agency problem by making governments more accountable. However, by creating the possibility of interaction between different jurisdictions, decentralization may give rise to potential coordination problems which may manifest themselves in soft budget constraints. In this paper, we have analyzed the impact of decentralization and the nature of intergovernmental relations on government size, for the case of Latin America. We have found that decentralized governments tend to be larger. This result is consistent with different interpretations. One of them is that because local governments can

[32] Our budget constraint variables kept the correct sign, but lost significance when GDP per capita was used instead of the age variable.

Table 3. Decentralization and Government Size (Cross Section OLS Regressions, Average 1990-1995), Latin America only

Size	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Institutional Variables								
Exp. Decentralization		0.45					0.20	0.24
(T-Stat)		4.24					1.43	2.57
ED. VI			0.63					
(T-Stat)			3.14					
LA ED. BA				0.13				
(T-Stat)				3.97				
ED . VI . BA					0.39		0.27	
(T-Stat)					7.44		2.79	
ED . VI . DT						0.65		0.45
(T-Stat)						6.60		4.09
Controls								
Constant	0.14	-0.00	0.06	-0.04	-0.10	-0.04	-0.11	-0.07
(T-Stat)	2.77	-0.06	1.14	-0.58	-2.25	-0.76	-2.56	-1.72
Debt at 1989	1.63	1.75	2.02	10.27	13.97	12.19	13.25	12.57
(T-Stat)	2.13	3.85	3.85	2.51	5.16	4.09	5.01	4.92
Openness	0.11	0.25	0.15	0.20	0.19	0.20	0.22	0.24
(T-Stat)	2.29	3.23	1.95	2.47	4.00	3.75	4.41	5.39
Population > 65 Years	1.24	0.89	1.05	1.45	2.02	0.42	1.83	0.48
(T-Stat)	1.54	1.87	1.93	2.63	5.52	0.43	4.91	0.62
R^2	0.36	0.67	0.55	0.56	0.82	0.82	0.84	0.89
DF	19	14	14	12	12	9	11	8
N	23	19	19	17	17	14	17	14

Notes: Govemment size is measured by the total expenditures of the consolidated public sector as percentage of the GDP, ED = Expenditure Decentralization, VI = Vertical Fiscal Imbalance, BA = Borrowing Autonomy, DT = Discretionality in Transfers, LA = Latin America, OECD = Organization for Economic Co-Operation and Development, DF = Degrees of Freedom, N = Sample Size.

be trusted to deliver public goods that are more in line with voter preferences, they are given more resources to manage. Hence, this result per se is no indication of inefficiency.

However, we have also found that the form that decentralization takes also affects size. In particular, arrangements that are more likely to lead to soft budget constraints seem to be associated with larger size. This evidence is a clearer indication of political distortions at work. Our findings suggest that countries that want to advance in the process of decentralization should make sure that the form that decentralization takes is not inconsistent with the objective of imposing hard budget constraints on lower level jurisdictions. This may be done by limiting the degree of vertical fiscal imbalance, assigning to the lower levels all the revenue bases they can efficiently collect, by reducing the degree of discretionality in the intergovernmental transfer system, and by limiting the degree of borrowing autonomy of subnational governments.

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