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Intergovernmental Transfers and Political Representation: Empirical Evidence from Argentina, Brazil and Mexico

Moritz Kraemer, IDB
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Abstract: Intergovernmental transfers from the central level are an important source of revenue for most subnational governments in developing countries. This importance is likely to grow even further taking into account the ongoing decentralization initiatives in Latin America and elsewhere. This paper investigates in a series of regressions whether the transfer mechanisms in place in Ar-

gentina, Mexico and Brazil satisfy a set of basic propositions: (a) equity principle: poorer jurisdictions are not treated less favorably than better off ones; (b) incentive principle: subnational tax effort is encouraged and (c) political nondiscrimination principle: electoral, partisan or other political constellations play no role in determining the distribution of transfers. The most striking result is that politics *do* seem to matter. In Brazil and Argentina the spatial representation pattern in congress was the most important determinant of the distribution between states and provinces. In Mexico, by contrast, a more partisan approach could be observed. In Mexico and Brazil we can also observe a violation of the equity principle. The paper concludes that the reform of political and budgetary institutions must go hand in hand if a rational system of fiscal federalism is to evolve.

1. INTRODUCTION

In the United States the federalism controversy peaked more than two centuries ago. Then, the authors of the *Federalist Papers* argued successfully for a division of responsibilities among jurisdictions and the world's first federal constitution based on the principle of *subsidiarity*. The principles according to which different layers of government coexist side by side as institutions in their own right has not been questioned by the political mainstream since these days. Interest in federalism and decentralization flared up much more recently in other parts of the world. In the former soviet block the disappearance of the firm grip of the central government leads, albeit slowly, to a more prominent role of subnational jurisdictions. Simultaneously, in the advent of monetary union and possibly on the road to intensified political unity, the western half of Europe argues fiercely about the most desirable apportioning of political power between the Union, the nation states and the regions.

An unlikely candidate for the decentralization spin seems to be Latin America. Its long tradition of consistent centralization dates back to colonial Spain's highly centralist system of imperial administration through the *Consejo de las Indias*. After independence the centralist heritage in Latin America was further intensified in an attempt to consolidate the young and fragile nations. It was not before the collapse of authoritarian and centralist regimes in central and south America that the call for decentralization of policy making gained momentum. Today the quest for less centralized and more participatory political structures belongs to the rhetoric repertoire of politicians of almost all political colorings. While in some cases this claim appears to be mere lip service and

only timid steps of deconcentration haven been taken, some countries in Latin America have already gone a long way in truly devolving substantial powers to local and provincial governments. The recent flood of publications to this former non-topic indicates that it is a prominent issue that is here to stay well into the next millennium.¹

The most common arguments *in favor* of decentralization refer to increased economic efficiency in the provision of local public goods, and increased political participation at the local level – in turn considered a precondition for an inclusive deepening of democratization. I will not discuss the political argument, although its importance for Latin America is undeniable, being a region struggling with the legacy of elitist political dominance and widespread exclusion of indigenous citizens from the political process. According to the economic arguments following the seminal paper by Tiebout (1956) decentralization allows heterogeneous citizens to choose the tax payment/public service bundle that resembles their preferences most. "Thus, subordinated governments have to compete for factors of production by offering specific sets of public policies. In this context, only those restrictions will be maintained that imply political benefits which are higher valued by the local and regional population than the associated economic costs."² Decentralized decision making allows subnational governments to react according to local preferences about which they might be better informed than the central level. The closeness of subnational governments to the electorate makes auditory efforts by the latter more feasible, which leads to greater accountability. Decentralization is thus expected to enhance economic development by reducing waste in the provision of public services. The link between decentralization and growth is hard to

¹ Some of the more important comprehensive monographs on decentralization issues in Latin America are, e.g. CEPAL/GTZ (1996), Inter-American Development Bank (1994), Lopez-Murphy (1995), Rivera (1996), Arellano Cadena (1996) and Nickson (1994).

²Ahrens (1996, p. 20).

track down empirically, however.³ Adherents to the public choice school took this argument one step further and claimed that in a decentralized environment the threat of a Leviathan state intruding ever more intensively into the economy can be held in check more easily. Whether the “competition” of jurisdictions in a federation leads to a smaller public sector than in the unitary “monopolist” case is empirically inconclusive, however. The results are particularly ambiguous in cases where intergovernmental collusion exist in the form of fiscal transfers from central government, which can reduce interjurisdictional competition.⁴

At the same time the devolution of political power is subject to some *risks*. The most serious one, especially for poor countries with a low endowment in human capital and managerial resources is the lack of administrative capacity on the local level. This may in some cases lead to deterioration of public service provision and unduly high administrative costs. Another problematic issue is the fact that while the allocation of resources may well improve in the course of decentralization, the tasks of stabilization and distribution surely become more cumbersome. *Firstly*, this is due to the fact that inter-regional mobility of citizens is considered much higher than the cross-border one. The migration response to differing distributional policies are interregionally higher than in the international context. This can render policies striving for distributional justice by a subnational jurisdiction self-defeating: the influx of the poor and the exodus of the rich destroy the required resource base. *Secondly*, regions are also more open to trade than the country as a whole. This leads to large “leakages” of anticyclical fiscal measures to other jurisdictions. As a result both distributional and stabilization policies suffer from a prisoners dilemma situation, with each subnational government rationally

³Davoodi/Zou (1996) present some pooled regression results indicating that in developing countries a higher degree of decentralization induces moderately higher growth of GDP. However, once initial per capita income is introduced as a (significantly negative) explaining variable, the T-values for the decentralization variable nose-dive and the coefficients become insignificant. The following interpretation seems to be obvious: what we observe is merely the well known convergence of per capita incomes with poorer countries growing faster than richer ones. The developing region where this was lamentably not the case recently (Sub-Saharan Africa) is only represented with 3 countries (only about 10% of the developing countries in the sample). As poorer countries are on average more centralized than richer ones, the decentralization variable is measuring in fact the starting level of income rather than decentralization. Accordingly, in the equations where the initial income level was used, the degree of decentralization did *not* influence the growth rate. The authors' disaggregation into countries with three and with two levels of government is misleading, as for example the classification of Argentina and Mexico as two-level systems indicates. The differentiating results between two- and three-level countries is therefore precarious at best.

speculating on the provision of redistribution and stabilization by other administrations on the same level. Therefore distribution and stabilization are usually a domain of the central government which does not suffer from this incentive problem. Decentralization, however, reduces the resources available to the central administration to address these national policies.

Another problematic issue that is increasingly attracting attention is the high degree of corruption in Latin America, that may actually worsen with the delegation of public functions to lower levels of government, which may still be dominated by local caciques. Some authors conclude that corruptive practices are more common on the local level as contiguity leads to personalistic decision making.⁵ Little evidence exists on the causal relation, if any, between decentralization and corruption.⁶ If the institutional weakness on lower levels of government would encourage corrupt practices, an important caveat would have to be made, especially if officials of subnational governments are less well paid than their counterparts at the national level, which will encourage bribery.⁷ A related problem is the presence of special interest groups that may be more successful in their rent-seeking activities vis-a-vis local politicians than when facing central government bureaucrats far away in the nation's capital. Hettich and Winer argue convincingly that a priori it is not theoretically clear, whether overall interest group pressure will increase after decentralization. The degree of interest homogeneity is likely to be larger in lower level jurisdictions due to prior "voting by feet" in line with Tiebout's model. The collective action theory predicts that homogeneity will create more lobbying as organization costs decrease. On the other hand, a decentralized system makes the "exit" option more attractive as a response to policy initiatives that are per-

⁴ A survey on the literature on decentralization and size of the public sector can be found in Oates (1989). The role of the transfer system is examined by Grossman (1989) and more recently by Ehdaie (1994).

⁵ Cf. Tanzi (1995, p. 301).

⁶ Cf. Pope (1996, p. 45). I ran a simple cross country regression for Latin America using "corruption" as the dependent variable and the percentage of total public spending by lower levels of government as the independent variable as a "decentralization" proxy. It produced a positive, but statistically insignificant relationship. The sample included 11 regional countries. "Corruption" was measured as the percentage of country stories in the CD-ROM of Latin American Business Information (LABI) by the *Economist Intelligence Unit* Publications covering 1993-mid1996 that focused on corruption relative to the total number of stories (which must exceed 50, otherwise the country is excluded). E.g. 23 out of 436 stories on Venezuela were on corruption, the "Corruption" variable would therefore be 5.3% (=23/436). The more elaborated Corruption Index by *Transparency International* and the University of Göttingen could not be used as too few Latin American countries are included (<http://www.uni-goettingen.de/~uwwv/icr.htm>).

ceived as harmful by individuals or firms. The relatively uncostly movement of assets reduces the pressure to raise “voice”. The overall effect of decentralization on rent seeking activities is therefore highly ambiguous even from the theoretical point of view, let alone the empirical one.⁸

From the practical viewpoint the main problem with fiscal decentralization is the vertical imbalance of expenditure responsibility and taxation power. Subnational governments often do not have sufficient own revenue to finance the decentralized services without outside assistance. Tax collection generally remains heavily centralized due to economies of scale in collection and the fact that taxes that are either redistributive or suitable for economic stabilization should remain in the hands of the central government. These taxes usually comprise the lion’s share of total tax revenue (income tax, VAT etc.). If responsibilities devolve to lower levels of government, a mechanism is needed that guarantees sufficient funding. Intergovernmental transfers are the main instrument to secure sufficient resources for all layers of public administration.

The next chapter will discuss the role of intergovernmental transfers. Basic normative principles are introduced that will allow to judge upon the design of intergovernmental fiscal relations. In chapters 3 through 5 empirical tests are presented that investigate whether the transfer systems in Argentina, Mexico and Brazil work according to the principles. In chapter six it will be concluded that the principles are more often than not violated. In particular, in all three countries the transfers to intermediate governments are influenced by political factors.

2. THE ROLE OF TRANSFERS IN FISCAL FEDERALISM

Intergovernmental transfers are the dominant source of revenue for most subnational governments in developing countries.⁹ This holds true also for Latin America. Table 1 gives an impression of the importance of the transfers in the three countries to be discussed in detail in the rest of this paper.

⁷ This differential in remuneration is not uncommon in Latin America. While data on wages in subnational governments is extremely scant there is evidence that pay increases substantially with the level of government in Belize, Cuba and El Salvador (ILO, 1991).

⁸ Cf. Hettich/Winer (1987, pp. 44-49).

⁹ Cf. Shah (1994, p. 24).

Table 1: Indicators of Decentralization and Intergovernmental Transfers

	Argentina	Mexico	Brazil
Subnational Public Expenditure as % of total public expenditure	50% (1992)	20% ^① (1991)	67% (1990)
Intergovernmental Transfers as % of GNP (1994)	5.3%	N/A.	6.0%
Own Revenue as % of intermediate governments' expenditure (1991)	29%	18.3%	66%

Sources: ^①INEGI (1991), CEPAL/GTZ (1996, pp. 93,103), Arellano Cadena (1996, p.123) and IMF (1995). In the Mexican figures the federal district is not included.

The first line shows the degree to which the responsibilities for public spending have been decentralized in the three big federal states in Latin America. In Brazil two thirds of all public expenditure is undertaken by the states and municipalities, whereas Mexico remains a very centralized state.¹⁰ While the second line gives an impression of the important weight of transfers from the central to the intermediate level of government, exceeding 5% of GNP in both Argentina and Brazil. The last line indicates the dependence of subnational governments from this source. In Argentina and Mexico, where the reliance has decreased somewhat in recent years, transfers account for more than half of the revenue of the intermediate governments. Brazilian States show a higher degree of tax autonomy but still depend by about a third from funds by the central government. The current decentralization efforts underway in Latin America are likely to add to the prominence of transfers, as almost all strategies envisage enhanced flows from the central government.¹¹

With intergovernmental transfers firmly established in Latin America's federations and likely to gain further in importance, it is crucial to establish some normative framework on which to judge the practice of intergovernmental fiscal relations. It is not the aim of this paper to describe the sometimes very complex structure of the intergov-

¹⁰ Mexico is in the process of moving slowly in the direction of becoming a more decentralized country, however. The late 1970s were characterized by a federal government absorbing over 90% of total public spending. Cf. Pineda Pablos (1994, Anexo).

¹¹ Cf. CEPAL/GTZ (1996, p. 51, Cuadro I.1).

ernmental transfer systems presently in use. Instead a much more modest goal is pursued. It is not considering what *is* the structure of intergovernmental transfers, but rather what it *should* look like. Within this line of reasoning a few basic propositions are made. The focus is narrowed further in the sense that we want to scrutinize only the *secondary* distribution, i.e. how the funds that are transferred from the central to the intermediate governments are distributed *among* the latter. The *primary* distribution, i.e. what percentage of central government revenue is shared with the states or provinces in the first place, will not be discussed. In the following chapters on Argentina, Mexico and Brazil an empirical investigation checks to what extent the practice of fiscal relations between central and intermediate governments adhere to the normative demands. Three propositions are established as yardsticks by which to measure the rationality of the secondary distribution of the transfer system.

1. Equity Principle. Distributional policy can only be effective if implemented by the central level. As the living conditions are, among other things, often correlated with geographical location, an active measure of redistributive policy could consist of channeling more per capita transfers into regions with poor socio-economic indicators. A **weak** interpretation of this principle would demand only that poorer regions should not receive less funds than richer ones. The **stronger** interpretation would demand that, other things being equal, governments of poor regions should not only receive at least the same per capita transfers, but that they should actually obtain relatively higher funding in order to foster equalization of living conditions across the nation.

2. Incentive Principle. Since transfers are quantitatively so crucial for the lower levels of government, a defective design of the secondary distribution formula can lead to serious distortions of incentives. This may be the case if the higher level of government is systematically increasing its transfers to states with fragile fiscal positions. The precarious fiscal situation may be due to either a poor tax base (e.g. of poorer provinces or states) or to a low effort of raising taxes on behalf of the intermediate government, although the tax base is comparable to that of other states. Perverse incentives can discourage a subsidiary tax effort if bailout transfers of the central government can be expected. To prevent this from happening the per capita transfers from central government should – other things (e.g. regional economic development level) being equal – *not* increase with lower tax ratios of the intermediate government. This, again, is the

weak interpretation. The **strong** interpretation of this proposition goes one step further. Central government should create incentives for higher tax efforts and per capita transfers should *decrease* with lower tax ratios of intermediate governments – again controlling for differences in the level of development and hence tax bases. This design would encourage intensified decentralization and subsidiarity as the relative importance of transfers would gradually shrink in the subnational governments' budgets.

3. Political Nondiscrimination Principle. In a nutshell this proposition postulates that electoral, partisan or other political constellations should play absolutely no role in the determination of the secondary distribution. In cases where the distribution is following a nondiscretionary formula, this should always be the case. But even then it remains an open question whether the practice will fully follow the legal norms, which is frequently not the case.¹² As long as there is *de facto* discretionality by the central government the temptation of abusing the transfer system to promote partisan or individual political goals remains. This political tinkering is not compatible with a rational and fair system of intergovernmental fiscal relations.

The presented propositions, especially the weak formulations, are probably uncontroversial and can easily be endorsed from a normative point of view. The analysis of the three country studies that follow now will prove, on the other hand, that even these minimal standards are frequently unmet and violations of all three principles occur.

3. ARGENTINA

3.1. *The political institutions*

During the first decade following the military withdrawal from power, the political system was dominated by two major parties, the Radical Party (UCR) and the Peronists (JU). Both parties had a strong tradition dating back well before the consecutive repressive military governments. Since 1982 elected governors of the provinces usually belonged to either of the two parties and their presidential candidates received more than a combined 90% (80%) of the vote in 1983 and 1989. Only in the mid 1990s, a

new political force, Frepaso (Frente País Solidario), became a serious contender in electoral races. Party politics and political brawl along party lines are clearly a salient feature in the Argentinean political environment. However, the interests of individual provinces are also alert and congregate in parliament as coalitions across party lines.

Argentina has a bicameral system with the 46 Senators being named directly by provincial legislatures, which can send two each, and the 254 Deputies being popularly elected, with proportional representation being applied within each province.¹³ Despite an “orderly” party system that has been characterized by the traditional Radical-Peronist duopoly until 1995, ideological cohesion within the parties is not that strong as to guarantee humble following of the party leadership’s voting recommendation. Factionalism has been particularly notorious within the Peronist movement.¹⁴ Pork barrel projects favoring particular municipalities or provinces can secure parliamentary majorities in the same way as this happens in many western-style legislations. Argentinean congressmen doubtlessly fight not only for national goals according to their ideological preferences, but are also inclined to do their utmost to support their constituencies back home in the provinces. Lawmakers have to be mindful that their personal political future is depending to a large extent on how the electorate in their provincial districts fare. Their interest in the *regional* distribution of federal funds is therefore a genuine one. Accordingly, congressmen are reported to “spend most of their time back in their provinces; or, when in Buenos Aires, they devote themselves almost entirely to lobbying bureaucrats on behalf of individuals and their provincial governments.”¹⁵ This is even more understandable in the light of a powerful presidency that repeatedly decrees legislation on national issues, which reduces the congress members’ influence in decisions concerning nationwide affairs.

If provinces were equally represented and all lawmakers had the same “productivity” in terms of securing benefits for the eligible voters in their locality, the overall effect of distribution of federal funds should be zero, as the efforts would cancel each other out in a prisoner’s dilemma situation. Reality, however, is different. Whereas the hypothesis seems acceptable, that all Deputies and Senators are equally talented in

¹² Cf. World Bank (1995, p. 41).

¹³ For details of the electoral rules cf. Nohlen (1993, p. 34-36)

¹⁴ Cf. Wynia (1995, p. 81).

¹⁵ Wynia (1995, p. 79-80).

rent seeking activities, the assumption of equal representation of each voter, irrespective of his province of origin, is clearly false. For example, a *Senator* of the province of Buenos Aires represents 60 times as many voters as her colleague from Santa Cruz. This is the result of the fact, that each province sends two Senators, irrespective of the number of residents. While the number of *Deputies* in Argentina's lower chamber increases with the provincial population, it does not do so proportionately. This results in a "representation intensity" pattern of Deputies that is similarly biased in favor of less populous states. Indeed, Deputies per voter and Senators per voter are highly correlated across provinces with a coefficient of 0.99. As time and resource restrictions that limit political interest peddling are about equal for all legislators, voters in less populous provinces can count on higher *per capita* lobbying by "their" parliamentary delegation. A non-negative lobbying productivity of each lawmaker – a trivial assumption indeed – will then lead to higher material benefits per capita accruing to "over-represented" provinces.

The most striking feature of Argentinean democracy, however, has not been the partisan stability or the provincial struggle over the distribution of the pie, but the very personalistic, presidential regime.¹⁶ The Radical president, Raúl Alfonsín, and his Peronist successor Carlos Menem possibly even more so, ruled liberally by decree. The formal system of checks and balances was therefore weakened as parliamentary authority was undermined. Lawmaking by decrees was usually justified with constitutional emergency provisions that call for a strong executive in times of "crises".¹⁷ The personalistic style of governing culminated in the successful bid by President Menem to change the constitution in order to allow reelection. *Freedom House*, a US based watchdog evaluating political and civil freedom in the world considered downgrading Argentina in 1996 due to "mounting evidence of systemic government corruption and authoritarian behavior by the country's president."¹⁸ It is important to note, however, that it appears to be the explicit preference of the electorate to bring strong politicians into executive office. In a 1988 public opinion poll more than two thirds of the interviewees supporting Menem did so not *in spite of* but *because* he was considered to be

¹⁶ Cf. Wynia (1995, p. 73).

¹⁷ Cf. Wynia (1995, p. 75).

¹⁸ Freedom House (1996).

“popular/a caudillo.”¹⁹ The presidency is a particularly powerful institution in the Argentinean political landscape that is not effectively confined to the limits of the constitutionally assigned powers.

3.2. Intergovernmental Fiscal Relations²⁰

Over 80% of the transfers from central to provincial governments follow an automatic allocation by well defined rules (most notably the tax sharing agreements between the national and the provincial governments, or “coparticipación”). The formulas that have been in use in the past to allocate disbursements among provinces differed from one transfer program to another, usually including population size, per capita income, density and provincial fiscal conditions. When the old coparticipation system was unable to come forward with the necessary resources for the provinces and ad hoc contributions by the Treasury had to fill the widening gaps, the revenue sharing system was dissolved altogether in 1984. The years following the breakdown of the old formula were characterized by “anarchy”²¹: temporary and purely discretionary bilateral transfer deals between the federal government and the provinces replaced objective rules. In the complete absence of explicit tax sharing rules all vertical transfers were distributed in the form of Treasury support.²² In 1988, however, the secondary distribution among provinces that resulted from this spontaneous bargaining process was fixed by law without further justification, thus perpetuating the pattern that emerged during the ruleless period 1985-87, which is likely to have furthered provinces that have shown less fiscal prudence and that were bailed out during those years.²³ The present system has been criticized as “completely arbitrary, and indefensible from any public policy perspective.”²⁴

About 4% of total transfers in 1995 were of the completely discretionary Treasury Grants (*Apoyos de Tesoro Nacional* – ATN).²⁵ ATNs provide unconditional aid to

¹⁹ Cf. Arias (1995, Table 1).

²⁰ A good introductory source to the technical aspects of the complex Argentinean transfer system is World Bank (1996, Vol. 1, pp. 31-41) or – more compact – Fernandez (1995, pp. 200-203).

²¹ CEPAL/GTZ (1996, p. 54).

²² Cf. Artana et al. (1995, p. 84-90) and Liuksila/Schwartz (1996, p. 15-17).

²³ Cf. Porto/Sanguinetti (1993, Anexo II.A). The provincial shares as fixed in Law 23.548 are documented in the same source on p. 79, Cuadro 23.

²⁴ Cf. World Bank (1996, Vol. 2, p. 30).

²⁵ Cf. World Bank (1996, Vol. 1, Table 3.3 and Appendix, Table 15).

provincial governments in fiscal trouble with the allocation of funds being fixed freely by the Ministry of the Interior. The share of provincial revenues coming from ATN transfers has grown by an annual average of 30% between 1991 and 1995, accounting for 2.3% of total provincial revenues in 1995. While this may be considered as negligible and therefore not worth a distinct analysis, the ATN transfers are of substantially higher fiscal importance for some selected provinces. Some provinces are fiscally more dependent on this type of transfer as this aggregate figure suggests, a fact that is highlighted by the extreme case of La Rioja, where over 40% of the government's resources originate from ATNs.²⁶ It is true that the prominence of discretionary transfers has been much more pronounced in the 1970s and most of the 1980s. However, the statement of an Argentinean Economics Ministry official saying that their recent quantitative relevance for the provinces as a group is negligible²⁷, must be interpreted with some caution, as this may be wrong for some provinces. In addition, there have been other discretionary transfers, for instance in the form of advances of future non-discretionary coparticipation flows.²⁸

3.3. Empirical Evidence

This section investigates to what extent the Argentinean intergovernmental transfer system worked in accordance with the principles postulated in chapter 2. The empirical approach consists of multiple regressions using OLS estimation. The equations of the cross-province regressions are summarized in Table 2.

The empirical analysis is conducted for two **years** representing distinct stages in the process of the Argentinean democratic transition. The first year is **1986**, when the first democratic administration of President Alfonsín of the Radical party was in power. As explained above, in 1986 the Argentinean tax-sharing system ("coparticipación") was very distinctive as there were no explicit rules whatsoever concerning secondary distribution. The second year examined is **1995**, the latest year for which data is avail-

²⁶ Cf. World Bank (1996, Vol. 1, Statistical Appendix, Table 7). There are other important de facto "grants" like the National Housing Fund (FONAVI) that are not investigated in this paper. While FONAVI resources have to be paid back in principle, the income recovered from outstanding housing loans has only been between 2% and 4% in 1978-1993. Cf. World Bank (1993, p. 128).

²⁷ "...las transferencias discretionales ... no tienen ninguna relevancia cuantitativa a nivel del consolidado de provincias..." Fernandez (1995, p. 199).

²⁸ Cf. Liuksila/Schwartz (1996, p. 15, Footnote 9 and p. 20).

able. Under the peronist government of Carlos Menem democracy had been fully established but had started to take a turn towards a more personalistic style of governing on behalf of what one political observer called the “caudillo riojano”²⁹, symbolized by the previously inconceivable reelection of the incumbent. In 1995 the basic secondary distribution device were the rigid shares, that had been fixed in 1988.

The **sample** comprises 23 provinces, excluding Tierra del Fuego that did not enjoy the status of a province but was treated as a federal territory in 1986. In order to avoid statistical disturbances originating from the expansion of the sample and to maintain comparability of results, Tierra del Fuego has been omitted in the 1995 regressions.

Except for the dummies, all **variables are standardized**, having a cross-provincial arithmetic mean of zero and a standard deviation of unity. Thus a provincial value of, say, -0.5 indicates that the province’s value lies half a standard deviation below the inter-provincial mean. As both dependent and independent variables are defined in this way, the regression **coefficients can be interpreted as “elasticities”**. They display the change in the dependent variable (in multiples of standard deviations from the mean) if the independent variable is exogeneously increased by one standard deviation.

The most comprehensive **dependent variable** is the per capita transfer of all funds from the federal to the provincial governments (TOTALTRANSFER). AUTOMATICTRANSFER comprises only the formula-based segments of transferred funds per capita, whereas ATNTRANSFER represents the discretionary ATNs.

The first **independent variable** is **HDI**, an index of human development. It incorporates with equal weights a health indicator (life expectancy at birth), an educational indicator (average years of schooling) and an income indicator (GNP per capita at purchasing power parity). Basic educational and – to a lesser degree – health services are policy areas that have been assigned to provincial governments by the constitution.³⁰ Low attainment levels in these areas (and thus a low indicator value) point out the *need* to expand services in the social sectors. At the same time, depressed per

²⁹ Arias (1995).

capita incomes imply a comparatively modest tax base. The provincial government is therefore facing great difficulties in financing the needed social investments. Therefore HDI also includes an indication of *capacity* of a provincial government. If anything, increased transfers from the central government to states with low values of HDI should be expected. Thus a transfer system targeted to mitigate regional inequalities would require a negative sign of the coefficient. Until 1984 this equalization goal was made explicit in the tax sharing formula that regulated that, *ceteris paribus*, underdeveloped regions were to receive higher transfers.³¹

The equations in Table 2 show that this has not been the case in Argentina, which shows a striking lack of redistributive vigor. Poorer provinces did *not* receive higher per capita transfers in either year. Indeed, in 1986 higher development and higher transfers went hand in hand with a probability of 80%. While the coefficients are not significant and also rather small, the change in sign moving from 1986 (equation A1) to 1995 (equation A2) indicates that the less “spontaneous” fixed-share approach of secondary distribution applied since 1988 has not done any additional harm to the goal of national redistribution. The overall result however, lends support to the finding of the World Bank that has found that “the correlation between per capita transfers and social and economic indicators is practically zero.”³² It must also be kept in mind that even when a positive relationship between transfers and *regional* welfare indicators had been detected, this would not necessarily have translated automatically into an improvement of the *personal* income distribution.

Table 2: Determinants of the regional distribution of federal transfers to provincial governments in Argentina, 1986 and 1995

	A1	A2	A3	A4
Dependent Variable ⇒	TOTAL TRANSFER 1986	TOTAL TRANSFER 1995	AUTOMATIC TRANSFER 1995	ATN TRANSFER 1995

³⁰ Cf. Artana et al. (1995, p. 64-66).

³¹ Cf. Liuksila/Schwartz (1996, p. 17). Housing quality, the number of cars per inhabitant and the average level of education per inhabitant were used as proxies for the level of development. 25% of shared taxes were to be distributed by this criteria.

³² Cf. World Bank (1996, Vol. 1, p. 36). A similar conclusion has been drawn by Artana et al. (1995, p. 98) after having run a non-reported regression: the percentage of households of a province with unmet basic needs did not significantly influence the per capita transfers in the federal revenue sharing system.

HDI	.17 (1.38)	-.09 (-.68)	-.09 (-.90)	.12 (1.49)
TAXEFFORT	.10 (1.19)	.10 (.75)	.06 (.61)	.02 (.31)
DENSITY	.06 (.40)	-.14 (-.82)	-.07 (-.55)	.11 (1.03)
UCR 1983	-.08 (-.59)			
JU 1989		.14 (1.00)	.10 (1.00)	.11 (1.30)
SENADORES	.95 (5.82)	.66 (3.80)	.88 (6.97)	.29 (2.80)
CAPITAL	-.48 (-1.02)	-.30 (-.54)	-.41 (-1.03)	-.37 (-1.13)
LARIOJA	-.34 (-.85)	.68 (1.13)	-.74 (-1.68)	3.74 (10.43)
BUENOSAIRE	-.19 (-.46)	-.08 (-.17)	-.01 (-.04)	-.29 (-1.02)
R2 adj.	.80	.75	.84	.87
F-Value	18.6	13.1	26.2	40.6
Sample size	23	23	23	23

Note: The values in parentheses are t-statistics. The shaded coefficient are significant at a level of 90% or more. All F-values are above the critical values. For sources and definitions cf. appendix 1.

Similarly inconclusive results are found for TAXEFFORT and DENSITY. **TAXEFFORT** is defined as the ratio of the province's own revenue (excluding transfers from the central government) and the respective gross provincial product. The latter is used as a proxy for the provincial tax base. The variable refers to the year *preceding* the year analyzed, i.e. 1985 in equation A1 and 1994 for A2 through A4. The lag is intended to allow TAXEFFORT to represent a year that is most likely to be used as a benchmark for determining the distribution of transfers in the year under consideration. If the system is to encourage fiscal effort, it can only do so as a reaction to provincial fiscal accounts of the preceding year due to reporting lags on behalf of the provincial treasuries. If the subsidiarity principle is promoted, i.e. if the full exploitation of fiscal capacity on behalf of the provincial governments were rewarded, than the coefficient would be positive. While it is laudable that the coefficient is at least not negative (which would signify that the fiscal managers in the provinces would face incentives for fiscal recklessness) there is no carrot-and-stick automatism working in favor of provincial revenue raising efforts either. This result is found in both years. Consequently no in-

centives have been incorporated in the routine fiscal intergovernmental relations that would reward lower levels of government that utilize their tax base efficiently.

DENSITY is the rank of a province, ascending with increasing population density. “Low density” is an official classification of provinces in Argentina, implying that the corresponding provinces merit special treatment, as the cost of the provision of public services increases with a more dispersed population. The negligible coefficients and significance levels come as a surprise. In the tax-sharing formula in use from 1973 through 1984 demographic dispersion was even an explicit argument, albeit with a low weight of 10%.³³ The 1986 equation (A1) shows even the wrong sign, therefore affecting low density provinces – if at all – adversely! One very important caveat has to be kept in mind, however: as **DENSITY** and **SENADORES**, the highly significant “representation intensity” variable to be discussed next are negatively correlated, the low coefficient for **DENSITY** does *not* necessarily mean that low density provinces did *not* get more per capita transfers. What it does mean, however, that they did not get a better deal because of the fact their dispersed population, but because of the fact that they usually tended to enjoy stronger representation in Congress.³⁴

A first preliminary result is obvious. The factors that are usually discussed in the theoretical literature of fiscal federalism and which should be the driving force behind the allocation mechanism, do not play a prominent role in Argentina. While this is disappointing, still less enchanting is to come.

As outlined above, when investigating the political determinants of transfers, we will have to keep in mind provincial differentials in partisan strength as well as in congressional representation. Last, but by no means least, the potential impact of the presidency in determining federal funds flowing to the provinces must be considered. The three political spheres (parties, congress, presidency) will now be discussed in turn.

³³ Cf. Artana et al. (1995, Fn. 28) and Porto/Sanguinetti (1993, p. 34).

³⁴ This is easy to show. If A1 is modified and *either* **DENSITY** or **SENADORES** are used (as is advisable in case of the high negative correlation of $-.83$), the R^2 adj. for the equation using only **DENSITY** is $.53$, using **SENADORES** instead, it stands considerably higher at $.81$. In addition, it is noteworthy that the statistical significance of the coefficient for **SENADORES** is larger (T-value = 8.94) than the one for **DENSITY** (T-value = -3.71). The political variable clearly overshadows the population density aspect.

The remaining variables are all of a political nature. The first question that may come to the mind of the political analyst is whether the party in power may have (ab-)used it in order to advance the prosperity of those regions, where their support bases can be found. The evidence does not suggest that this strategy was pursued by either the Radicals in 1986 or the Peronists in 1995. Indeed, if anything, the Alfonsín government was out in an attempt to win over the opposition strongholds and “bribe” the recalcitrant states by allocating, *ceteris paribus*, higher per capita transfers to the provinces where the UCR did badly in the 1983 presidential elections. The elasticity of received per capita transfers in 1986 with respect to Alfonsín's electoral share in 1983 is very small (-.08) and insignificant (cf. Variable **UCR1983** in equation A2). Similarly, no clear party-political manipulation of the transfer allocation could be observed in 1995, as the insignificant coefficient of **JU1989** in equation A5 proves. However, as the sign is positive with a probability of two thirds, this might at least nourish the suspicion that the Peronists were more prone to aid their strongholds than the Radicals were.³⁵

How does the unequal representation effect the distribution of federal transfers? The empirical results presented here suggest that they are *very* decisive, thus echoing results of prior investigators.³⁶ The standardized variable **SENADORES** denotes the number of Senators per million provincial voter. Comparing A1 and A2 it becomes immediately clear, that the intergovernmental transfers in both years have been dominated by this political variable. In 1986 the elasticity (and significance level) has been even higher, indicating that the congressional members did successfully exploit the era of anarchic bilateral deals with the federal government in order to promote their own provinces' fiscal conditions. In 1986 (1995) an overrepresentation of one standard deviation above the average representation intensity led to per capita transfers approximately one (.66) standard deviations higher than the national average. Figure 1 shows the tight relationship between representation intensity and per capita transfers in both years. Due to the symmetry of regional representation in both houses of congress a regression using the number of *deputies* per million voters provides corresponding results.

³⁵ Alternative party political variable, e.g. the difference between the percentages of the ruling and the combined (or main) opposition parties or dummies for absolute majorities and the like did not generate “better” results in the sense that T-values were not systematically higher than for UCR1983 or JU1989.

³⁶ Cf. Sanguinetti (1993, p.87-109) and Porto/ Sanguinetti (1996).

Figure 1:
Parliamentary Representation and Intergovernmental Transfers, Argentina

But if the provinces with *legislative* overrepresentation can be successful in negotiating higher per capita transfers, what could possibly stand in the way of the still more powerful chief of the *executive* branch enriching his native province? This additional political aspect is incorporated by adding a dummy variable that equals one in the case of the native province of the president and zero otherwise. Whereas Carlos Menem was born in the province of La Rioja, where he also started his political career and was elected governor three times, Raúl Alfonsín was from the province of Buenos Aires.³⁷ The equations are thus using the dummy variables BUENOSAIREs and LARIOJA that are equal to one in the case of the respective province and zero otherwise.³⁸

The variable **BUENOSAIREs** is statistically insignificant and negative in A1, which suggests that Alfonsín did not abuse his power to push for a favorable deal for his home province. The picture looks slightly different in more recent times. In 1995 the

³⁷ Cf. The International Who's Who 1990-91(1990) and Corke (1993).

³⁸ A dummy variable CAPITAL is in addition used to take into account, that the economic and financial structure of the capital is very different as is the political process of self-determination. It can also be interpreted as a political variable measuring phenomena like metropolitan bias.

variable **LARIOJA** shows a high positive coefficients at the admittedly low 73% level of significance (equation A2). It is interesting to note that while the statistical evidence on executive bias is very vague indeed, the coefficient for La Rioja changes sign and increases by more than unity in absolute terms. While this is a disquieting result, it is not robust enough to draw any conclusions on the actual interference on behalf of President Menem in favor of La Rioja.

The picture becomes less hazy if the total transfers in 1995 are broken down into different parts, one that is easily manipulated and another one that is following a preset formula of secondary distribution. The latter one we shall call “automatic transfers”. The regression in equations A3 resembles equation A2, but uses **AUTOMATIC-TRANSFER** as the dependent variable, representing the formula-derived transfers only.

Two results concerning the political economy view are noteworthy. The first memorable fact is that the variable **SENADORES** *increases* both in size and significance if compared to equation A2, which used not only the “automatic” transfers, but the total of transfers, i.e. also the part that is discretionary. This could be interpreted as suggesting that the bias in favor of over-represented provinces has been institutionalized and has become an integral part of the formula used for distributing funds. In 1988 the legal changes described above fixed the secondary distribution that had evolved from the discretionary bilateral bargaining between federal and provincial governments. Therefore the negotiation advantages of the over-represented provinces that had been exploited in the interim period were petrified and perpetuated until the very day. Thus the legislators do not need to fight anew year by year for the fiscal privileges of their constituencies, but can rely on the formula in use, the design of which has been biased in favor of the over-represented states. The second remarkable result is the complete absence of any positive influence of the dummy La Rioja, which turns actually negative with a probability of 89%. This may be due to the fact that the distributive formula has been set *before* Menem became president. Whereas the members of the legislation can thus partly rely on the revenue-sharing formula for distributing pork, the president has to build on the discretionary part if he or she desires to exercise provincial patronage. “Executive” favors are hence less rule-bound and therefore less stable as the parallel layer of cronyism originating in congress.

This preliminary conclusion is supported by the evidence of equation A4. It identifies the distributional determinants of the most discretionary transfers, the non-reimbursable ATN-grants. **ATNTRANSFER** is the standardized dependent variable in equation A4. The coefficient and its significance level of the LARIOJA variable is extraordinarily high, which could indicate the possible presence of presidential discretion when it comes to distributing non-reimbursable ATN support. Actually, when the regression is run using the dummy LARIOJA as the *only* independent variable the adjusted R^2 reached 0.84. The explanatory powers of the much more comprehensive equation M4 is only minimally higher! Besides the dominant impact of LARIOJA, and hence the suspected decisive influence of the executive branch, the legislators succeeded once more in reaping some additional benefits for their constituencies in this discretionary type of transfers, although the coefficients are about two thirds lower compared to equation A3.³⁹

The “division of labor” in terms of regional support thus seems to provide the presidency with the geographically highly unequal instrument of discretionary ATNs (inter provincial variation coefficient in 1995 = 2.3) whereas the over-represented members of Congress collude to secure the somewhat more equally distributed automatic and rules-based federal transfers (inter provincial variation coefficient in 1995 = 0.52).⁴⁰

3.4. *Conclusions*

Both the **equity and incentive principles hold** in their respective **weak** interpretations in both years examined. The payments are unrelated to the level of both provincial development or revenue raising efforts. If using the **strong interpretation** of both principles they are both **violated**: no positive relationship exists between development and tax effort on one hand and transfer receipts on the other. The inter-governmental fiscal relations are therefore in their present shape ill-suited to con-

³⁹ This finding is consistent with anecdotal evidence: “Many homes in La Rioja province, one of the country’s poorest, still have no electricity or potable water. But Anillaco - Mr. Menem’s hometown [800 inhabitants] - boasts paved roads, a modern hospital, an almost completed \$3 million scientific center and two comfortable hotels despite having few tourists. Later this month, a 1.2-mile runway for Mr. Menem to land his personal jet [...] should be completed.” *The Washington Times*, (March 4, 1997).

⁴⁰ A separate set of regressions for *all* discretionary transfers from central government has been undertaken, but is not reported here. The political economy results are comparable when it comes to the privileged status of La Rioja, whereas the coefficient of SENADORES was also positive, albeit insignificantly so.

tribute actively to the national challenges of sharing the development process more equitably or encouraging fiscal subsidiarity.

The **political nondiscriminatory principle** has been **violated** in 1986 and 1995. While it can be stated that partisan interests did not significantly determine the distribution of transfers, other political factors did:

1. Discretionary transfers are prone to be hijacked by political interests (equation A4). The apparent favoring of the president's home province is a recent phenomenon, that could not be traced back to the Alfonsín government. Three interpretations are possible: one is that Alfonsín was more reluctant to use his power than Menem with the second being that his ties with the province of Buenos Aires were possibly weaker than Menem's with La Rioja, as he left for the (near-by) capital earlier in his life. Thirdly, given the sheer population size of Buenos Aires province, in order to make a comparable impact for its citizens, it would take a multiple of resources to be transferred in absolute terms compared to what is necessary to favor the much smaller population of La Rioja.
2. Equation A3 has shown that even rules-based revenue-sharing systems are not immune against the penetration of political interest into the scheme. In the Argentinean case the differences in representation in congress had strong repercussions on the per-capita allocation of non-discretionary transfers.

4. MEXICO

„Leaders of the leftist Democratic Revolutionary Party, or PRD, have charged, that the PRI has used government funds illicitly to boost its chance of victory. The state government, which recently received a 25% boost in federal funds, has launched a campaign to spruce up roads and monuments around the state.”

*The Wall Street Journal, (Oct. 4, 1996)
on the municipal elections in Guerrero, Mexico.*

4.1. *The political institutions*

Few political systems in Latin America have been scrutinized as intensively and controversially as the Mexican one. This fascination stems at least partly from the institutional stability that would have been unimaginable in other Latin American countries and that made the ruling *Partido Revolucionario Institucional* (PRI) the longest ruling

party on the globe. While ideology and policies have been quite volatile in Mexico, these changes took place *within* a closed corporatist framework that prevented a return of porfirian presidentialism and soviet-style gerontocracy by obeying scrupulously the constitutional ban on reelection. The resulting high turnover of political elites allowed the system to react flexibly to changing political or economic challenges without having to modify partisan institutions. Real electoral competition took place only *within* the upper echelons of the ruling party. PRI candidates for governorships or president were eventually elected to the office they were running for. Not before the highly contested presidential ballot in 1988 and the PRI losing its first gubernatorial race in 1989, when the PAN (Partido de Acción Nacional) candidate overtook the “official” one in Baja California, some genuine *interparty* competition occurred. The third significant player is the PRD (*Partido de la Revolución Democrática*) that was created in the late 1980s by left leaning politicians defecting the more and more technocratic PRI. Until this day the PRI succeeded to hang on to its dominant position despite the loss of a handful of lost gubernatorial elections to the PAN, that can draw on heavy support in the more industrialized northern states.

Like Argentina, Mexico has a bicameral system that resembles the U.S. Congress, with two (since 1994: four) Senators being elected by direct popular vote in each of the 31 federal states plus the Federal District, where Mexico City is located.⁴¹ The Deputies in the lower chamber are also elected by the population and their number per state augments in proportion with the state’s population. In stark contrast to the U.S. system there exists a prohibition of consecutive reelection for members of both chambers. Besides, 200 out of the currently 500 Deputies in the lower house are elected by party lists in proportional representation. The large districts comprising several states each that do not necessarily need to be in the same region. Until today the PRI maintained the majority of representatives in both chambers. But in 1988 it lost its two thirds majority in the House of Deputies needed to change the constitution. As the PRI always fares better in uninominal than in at-large districts, its majority in the Senate has lingered around a very solid 95% until the mid 1990s.⁴²

⁴¹ A good introduction into the political system in Mexico is Camp (1994). Cf. also Kraemer (1997, Chapter 4).

⁴² Even in the Senate the opposition could secure ¼ of all seats in 1994. Electoral data and rules can be found in Nohlen (1993, pp. 537-569). For data on the 1994 election cf. U.S. State Department (1996).

The legislature has traditionally been an extraordinarily weak institution and proved unable to effectively check the powerful executive branch. Three reasons can be identified for this phenomenon.⁴³ *First*, as the PRI has dominated both chambers, as the PRI's leader has always been the incumbent president and as almost every single piece of legislation is introduced by this very president, deviant voting by PRI legislators was virtually unheard of. *Second*, reinforcing strong party discipline is the fact that congress members are not allowed to run a second consecutive term and therefore cannot develop name recognition, a strong constituent base or policy expertise. Reelection after pausing one term has been very rare with only one out of seven Deputies returning to congress. *Thirdly*, the bicameral Permanent Committee functions when both houses are in recess. It includes PRI members only and uses its exhaustive constitutional authority (Art. 78-79) to effectively substitute Congress – often for more than six months!

As a result of the reasons mentioned above, being a member of Congress does not carry much prestige and holding office in the Mexican legislation does rarely lead to a powerful political career in either the party or the national administration.⁴⁴ Sometimes a political future may lie ahead in the government of the states the politician is representing as a lawmaker, which might make her somewhat more amenable to channel local demands into the legislative process. However, the most talented politicians prefer to circumvent the congressional detour and instead try to enter the federal executive branch as *tecnócratas*: “The Senate in particular became a museum for political has-beens, a reward to those at the end of their careers or currently out of favor for a top executive post.”⁴⁵

The presidency in Mexico, on the other hand, probably commands comprehensive powers second to no other chief executive in Latin America – a region rightly famous for prominent presidential authority. In stark contrast to the U.S. political system no primaries of any sort have shaped the political landscape of Mexico. The president does not only hand-pick his own successor – the famous *dedazo* that the current in-

⁴³ Cf. Lujambio (1996) and Camp (1994, pp. 22-25).

⁴⁴ This situation may change in the aftermath of the 1996 National Assembly of the PRI, where members decided against the will of the party's leadership, that in future presidential nominees would be required of having experience in an elective office, a condition none of the presidents since 1970 would have fulfilled.

cumbent Zedillo seems to be prepared to discontinue – but as head of the party he also nominates the PRI's candidates for gubernatorial and congressional races. This top-down nomination procedure also works in reverse as the president oversees the power to unseat elected governors that turn troublesome for the president.⁴⁶ This lingering threat of being supplanted discourages autonomous action on behalf of lower echelons of government. Holders of elective office that have been elected on the PRI ticket grasp quite well that they are not only (perhaps not even primarily) accountable to the citizens they represent, but also to the party leadership and in particular, the president.

The close interdependence of party and government makes a clear distinction between the two next to impossible. The party is said to have drawn heavily on government funds and infrastructure to finance its campaign efforts, while at the same time it has very little programmatic autonomy vis-à-vis the presidency. Therefore it is not inconceivable that a PRI chief executive – facing impending doom to the prevailing hegemonic regime – would try to make use of the almost absolute power and lack of effective checks and balances in order to defend the political status-quo. Section 4.3 will investigate whether the fiscal transfers to state governments (which are described in the section 4.2) could have been a victim of such an attempt to politicize economic policy making.

4.2. Intergovernmental Fiscal Relations

Before turning to the empirical analysis a few words about **the Mexican fiscal transfer system** are in order.⁴⁷ As it was already noted, Mexico is one of the most centralized nations of Latin America despite its formal organization as a federation. The constitutional article 73(XXIX) lists the limited number of taxes that can be levied exclusively by the federal government. It does not include the rich tax bases like income or value added. Keeping in mind the subsidiarity principle laid down in article 124, all other taxes should fall under the states' jurisdictions. However, article 73(VII) states in addi-

⁴⁵ Camp (1994, p. 23).

⁴⁶ “Even popularly elected state governors who fall badly out of favor with the president are faced with almost instant dismissal, which the president can accomplish in a variety of ways. He can appoint the governor to a lesser, non-elective position or force him into retirement. Should the offending governor resist, the president can have the PRI controlled federal Senate declare the state government “dissolved”.” Cornelius/Craig (1991, p. 33).

tion, that the federation is entitled to additional tax income in case the taxes listed in article 73(XXIX) don't cover federal expenditure. In reality almost all taxes are raised and set at the federal level for administrative reasons. This leaves the states with revenue that is too small even to finance the limited responsibilities that have been assigned to them. The constitution orders the federal government to share the proceeds from the non-exclusive taxes with the state governments (article 73(XXIX)) but does not explicitly prescribe how tax sharing practices should be designed.

The legal framework is laid down in the 1980 *Law of Fiscal Coordination*, in which the states waive certain constitutional rights of taxation in exchange for a share in federal tax collection. The law contains a formula, by which the funds will be distributed among the states, including the population size and historical shares. As each transfer fund was overburdened by multiple objectives, the design of a stable sharing formula proved to be a difficult task. This resulted in a "system of transfer that divides funds based more on the bargaining power of legislators than on meeting the objectives."⁴⁸ There exist also discretionary transfers as a result of the so-called *Convenios Unicos de Desarrollo*, which allocate funds among states after a series of bilateral negotiations between the federal government and the states' planning committees.⁴⁹ All in all the inauguration of the first opposition governors had made it more complicated to twist the formulae and to distribute funds at least partly according to motives that are not fully reflected in the objective sharing rule.⁵⁰

4.3. Empirical Results

The OLS-regression results for the Mexican fiscal transfers in 1992 are documented in Table 3. As in the Argentinean regressions, all variables are standardized with a mean of zero and a standard variation of unity. In equation M1 the **dependent variable** is TRANSFER1986, the multiple of standard deviations from the mean of per

⁴⁷ An overview can be found in Planas (1993, pp. 97-99) and Gamboa González (1996, Section 3.3, Appendix I.4 and Table I.12). Arellano Cadena (1996, pp.123-131) is the best source for the evolution of the sharing mechanisms used in Mexico.

⁴⁸ Cf. Gamboa González (1996, p. 118).

⁴⁹ Winkler (1994, p. 36) notes that "critics complain that politics can also play a large role in the allocation of both the size and composition of the CUD, especially in election years."

⁵⁰ "Specific-purpose transfers lack transparent criteria and have often been mired in political controversy and debate." Shah (1994, S. 37). "La transparencia en la recaudación fiscal ha sido puesta en el debate nacional por los primeros gobiernos estatales de oposición, los cuales declaran que existe una amplia discrecionalidad política en la distribución de los recursos." Alba Vega (1995, p. 100).

capita transfers (*participaciones*) in 1986. A value of zero would hence indicate that a state has received an amount of per capita transfers which is identical to the average state's per capita transfer income. Equations M2 through M5 repeat this exercise for 1992. The six-year difference is not coincidental: both years represent the same relative point in time during a presidential *sexenio*, the six year term of office. 1986 was half way through De la Madrid's term whereas 1992 falls into the middle of Salinas de Gortari's presidency. Another argument for the six-year time span is the fact that the equations will investigate the effect gubernatorial races had on spatial transfer patterns. As the governors' terms are also 6 years, exactly the same 16 state elections were held in 1986 and 1992, which ensures comparability of the two years.

From the **distributional** standpoint the results are truly surprising. **HDI** is a composite development index comprising health, educational and income indicators. For details on the definition consult appendix 1. Whereas in the Argentinean case the correlation of the nationally standardized Human Development Index was not statistically significant, the transfer system in Mexico seems to actually *exacerbate* regional differences in the level of development within the country. The secondary geographic incidence is therefore likely to worsen due to the prevailing pattern of the transfer system. While this unwelcome effect is not significant in 1986 (M1), the positive correlation increases both in size and, considerably, in significance (>99% in M2). A deterioration in the development level in 1992 of a state by one standard deviation will therefore lead directly to a reduction of per capita transfers from central government of over a third of a standard deviation, other things being equal.⁵¹ This turn towards a more regressive secondary distribution between 1986 and 1992 comes as a big surprise if it is taken into account that the distribution formula has been changed in 1990. The reform comprised a distribution of almost half of all shared taxes by population number in order to promote the equity issue! Up to 1989 the distribution was arranged according to historical values and geographical origin of tax receipts, both favoring rich states.⁵² The reform in the tax sharing formula determining secondary distribution did in reality not improve interregional equity. On the contrary the gap between developed and underdeveloped states widened further.

⁵¹ Similar results were found by Gamboa Gonzalez (1996, Table 13) using simple OLS regressions.

⁵² Cf. Arellano Cadena (1996, p. 130).

On the positive side, the incentives for revenue subsidiarity have improved over the years. The coefficient for **TAXEFFORT** – the standardized ratio of the state's own revenue (without federal transfers) relative to its GNP in the year *preceding* the analyzed period – was negligible in 1986. It became significantly positive in 1992 while at the same time increasing in magnitude. Therefore, states which strive for higher own revenue experience a “multiplier effect”, as they tend to receive higher *participaciones* on top. Due to the importance of this revenue source the incentive effect may be strong even if the elasticity is relatively modest in size (+0.16).

The state of Tabasco is the center of the Mexican oil industry and therefore receives per capita an exceptionally large amount of money from Mexico City. This is the case because the distribution of shared taxes among states is still partly based on the revenue each state collected in 1978, thereby benefiting states with rich tax bases, in particular Tabasco as oil prices were exceptionally high in the late 1970s.⁵³ A dummy variable, **TABASCO**, is introduced to control for its exceptional status. It is equal to 1 in the case of Tabasco and zero otherwise. In all cases the TABASCO variable is positive, large, and the most significant variable.

The remaining independent variables in equation M1 are political ones and go to the core of this research. **PRI85** is a standardized variable representing the PRI's share in the congressional elections in the summer of 1985 in each of the states. Equation M1 shows that the relative strength of the ruling party did not make any difference in the distribution of transfers from central government. However, the PRI central government did not continue to behave like a non-partisan eunuch once it became harder to ignore potential electoral threats. **PRI88** is an indicator that is used to describes the PRI's sharply eroded strength at the 1988 presidential ballot (percentage of PRI support among valid cast votes). In 1992 PRI support of one standard deviation higher than the national average resulted in augmented per capita transfers of about a fifth standard deviation (significance = 97%). This testifies that transfers were allocated in a

⁵³ Arellano Cadena (1996, Fn. 5) notes that this practice leads to injustices even within the group of oil producing states. While Tabasco was producing 75% of Mexico's oil in the base year (1978) relevant for tax sharing, its share dropped to 24% by 1989 with Campeche taking over as main oil producer (70%). The privileged status of Tabasco in intergovernmental fiscal transfers has been perpetuated despite this drastic shift among oil producing states.

way to favor states that remained loyal to the party during the crucial 1988 presidential election.

This **differs sharply from the Argentinean picture**, where party politics played no prominent role in allocating transfer payments. Whereas in Argentina the personalistic characteristics were the most decisive factors influencing the amount of federal funding for the provinces' budget, the Mexican practice took a more party oriented turn. This striking contrast coincides with the general view that the Mexican system is consolidated by relying much more on stable institutions (including revolving party elites) than the younger democracy of Argentina, where politics are centered around the president's personality and party affiliation fluctuates more widely.

Table 3: Determinants of the regional distribution of federal transfers to provincial governments in Mexico, 1992

	M1	M2	M3	M4	M5
Dependent Variable ⇨	TRANSFER 1986	TRANSFER 1992	TRANSFER 1992		
HDI	.20 (1.57)	.38 (3.76)	.37 (3.67)	.28 (2.35)	.29 (2.93)
TAXEFFORT	.02 (.25)	.16 (1.87)	.16 (1.75)	.11 (1.17)	.29 (1.54)
SENADORES	.27 (2.40)	.35 (3.62)	.34 (3.41)	.42 (3.98)	.42 (4.22)
PRI85	-.05 (-.46)				
PRI88		.22 (2.37)	.23 (2.38)		
PAN88				-.13 (-.97)	
PRD88					-.18 (-1.82)
ELECT	-.34 (-3.11)	-.25 (-2.27)	-.23 (-1.93)	-.39 (-2.68)	-.29 (-2.38)
ELECT*PRISTRONG			-.17 (-.49)		
ELECT*PANSTRONG				.56 (1.43)	
ELECT*PRDSTRONG					.29 (.72)
COLIMA	-.24 (-.52)	-.12 (-.26)	-.09 (-.19)	-.35 (-.68)	-.22 (-.43)
NUEVOLEON	.05 (.09)	-.44 (-.84)	-.44 (-.82)	-.17 (-.32)	-.28 (-.51)
TABASCO	4.48 (10.04)	3.44 (7.86)	3.42 (7.68)	3.57 (7.32)	3.65 (8.11)
R2 adj.	.79	.78	.77	.75	.76
F-Value	20.0	18.6	16.0	13.6	14.4
Sample size	31	31	31	31	31

Note: The values in parenthesis are t-statistics. The shaded coefficients are significant at a level of 90% or more. All F-values are above the critical levels. For sources and definitions cf. appendix 1.

The difference in political structures may also be responsible for the fact that the respective presidents' home states did not experience positive discrimination as the province of La Rioja did in President Menem's case. Neither De la Madrid's home of Colima, nor Nuevo León, from where the Salinas family originates, received any favorable treatment.⁵⁴ The variables COLIMA and NUEVOLEON are dummies for the two states and play no role in determining the pattern of payments in any of the years.

Another indication of the strong party consciousness in Mexican politics could possibly be found in the way the ruling party managed the transfers in the face of **approaching elections of state governors**. Until 1989, when the PAN won the governorship in Baja California, all state governments were run by the PRI. As governors are elected every six years, it was not until 1995 that an opposition party had to defend a state won earlier. All state elections during the period studied were therefore dominated by the PRI guarding their ruling position. The dates of governor elections are less concentrated in Mexico than they are in Argentina, where almost all provinces vote their governors at the same time as they vote for president.⁵⁵ The intertemporal deconcentration of subnational elections in the Mexican case allows for a differentiated analysis of whether upcoming state elections increased the transfers from central government in order to grant the governor more spending power on the campaign trail. This federal largesse could be used to effectively "buy" votes as the electorate perceives the increased provision of public services as a signal of competence of the PRI's ruling government.

⁵⁴ While Carlos Salinas was born in Mexico City, his father was born in 1917 in Monterrey/Nuevo León. De la Madrid was born in Colima/Colima. Cf. Camp (1982, p. 273 and 1993, p. 58).

⁵⁵ In 1995 14 of the 24 governorships in Argentinean provinces were elected the same day as the presidential election with 7 additional governor races later in the same year. Corrientes was the only province where no governorship was up for election in 1995. Cf. *Latin American Regional Reports-Southern Cone*, June 1, 1995, p.2. For details see the joint Website of *El Clarin* Newspaper and the University of Buenos Aires at <http://www.uba.ar/elec95>.

In order to detect any partisan abuse of transfers with the aim of supporting the party's local stalwarts defending their governorship, the dummy **ELECT** is introduced which equals 1 if elections were held in late 1992 or early 1993 and zero otherwise.⁵⁶

Looking at the results of M1 and M2 it is surprising to find statistically significant *negative* coefficients for **ELECT**. This indicates that if any influence of upcoming state elections to the received flows of transfers was present, it was actually to the detriment of exiting PRI governors. This suggests, that the central government did *not* rush to the help of the local party militants trying to defend their terrain for the PRI, but rather hurt the local PRI campaign by withdrawing transfers from the state government. This conclusion, which from the political economy viewpoint is somewhat counterintuitive, needs some further explanation.

Equations M3 through M5 help to shed some light on this mystery. M3 differs from M2 by including an interaction term (the product of two dummies). **ELECT*PRISTRONG** is equal to one if there are governor elections *and* if the PRI is strong in that state (i.e. the PRI's share in the total valid vote in the 1988 presidential election was at least a two thirds majority). This "double-dummy" can be used to determine, whether or not there is a change in the functional relation between per capita transfers and the fact of upcoming elections, when the relative electoral standing of the PRI varies. In particular, it tells us whether the counterintuitive allocation in election years goes away if we differentiate between states where the PRI is strong (and therefore does not need an extra fiscal boost) and where it is weak (and where withdrawing funds could be really harmful for the PRI in electoral terms). The result in equation M3 seems to be negative: nothing changes in terms of sign, size, or significance of the coefficients, when we separate PRI strongholds from states with a more shaky majority.

Things look different, however, if the same statistical procedure is repeated replacing the PRI with the main "right wing" opposition party (PAN). The results are reported in equation M4. The negative sign on **PAN88** (the share of the PAN's presiden-

⁵⁶ Strictly speaking the dummy equals 1 whenever a governor election fell into the second half of 1992 or the first half of 1993. This procedure is chosen, as the focus is on the question, whether the geographical distribution of federal funds had been redirected in order to allow additional state spending before elections. If an election had been in the first half of 1992, the transfers of 1992 would probably have arrived too late to be electorally exploitable. Therefore the period January through June 1992 is omitted.

tial candidate in 1988) was of course expected, as we found a significant positive sign on PRI88 in M1 and M2 and since PRI88 and PAN88 are negatively correlated (correlation coefficient = -0.27). The surprising result, however, lies in the *negative* significance of the ELECT dummy with the interaction term **ELECT*PANSTRONG** being *positive* at the same time, at a significance level of 83%.⁵⁷ What is the story which the coefficients in equation M4 can tell us? It tells us that, while upcoming elections did in general *reduce* the per capita transfers received ($\text{ELECT} = -0.39$), they do rise, when those elections take place in a PAN stronghold ($\text{ELECT*PANSTRONG} = +0.56$). Since this increase takes place before the background of generally lower receipts in states where the PAN is strong ($\text{PAN88} = -0.13$), the ruling PRI governors in PAN strongholds experience pronounced cyclicity of their fiscal accounts. This budget cycle is synchronized with the electoral calendar: while in “normal” years, they receive less transfers than the average state ($\text{PAN88} < 0$), they receive much more in election years ($\text{ELECT*PANSTRONG} > 0$).

This electoral cycle introduces additional volatility to state finances with the aim of improving the short term economic conditions in the state and luring voters away from the PAN. If this pattern comes in addition to generally higher pre-electoral state spending that is likely to prevail independently, fiscal volatility is worsened by the central government’s regional allocation of transfers.

It is interesting to note, that a similar budget cycle is not observable in the states, where the more radical opposition (PRD) was strong.⁵⁸ While the “punishment” of PRD states was detectable with a probability of at least 90% ($\text{PRD88} = -0.18$) there was no “pardon” in the case of elections upcoming in PRD strongholds (ELECT*PRDSTRONG insignificant and low). This is surprising, because the correlation between PRI- and PRD-shares in the 1988 election is much more pronounced (-

For analogous reasons the first half of 1993 is included in the time range for elections that could be influenced by the transfers granted in 1992.

⁵⁷ PANSTRONG equals 1 whenever the PAN’s share in the total valid vote in the 1988 presidential election was at least 10% higher than the non-weighted interstate mean of the PAN’s share (15.8%) and zero otherwise. Six states were PAN strongholds using this definition. Among those six there were governor elections between July 1992 and June 1993 in Aguascalientes, Chihuahua and Sinaloa.

⁵⁸ PRDSTRONG equals 1 whenever the share in the total valid vote in favor of Cuauhtémoc Cárdenas in the 1988 presidential election was at least 10% higher than the non-weighted interstate mean of Cárdenas’ share (25.1%) and zero otherwise. Seven states were PAN strongholds using this definition. Among those seven there were governor elections between July 1992 and June 1993 in Michoacán and Guerrero.

0.75) than the one between PRI- and PAN-shares (-0.27). It would therefore not have been surprising if the PRI had perceived the PRD as being more directly threatening than the PAN. Apparently this was not the case, as no similar cyclical behavior could be observed in PRD strongholds. Part of the explanation may be, that the PRD may have been perceived as not posing the same electoral threat as the PAN, which had already proved that it can win governorships. The PRD, by contrast, had lost some of its political following after 1988. Since many supporters of the PRD were concentrated in the Federal District, where for constitutional reasons no local elections were held, these opposition followers were electorally impotent and could easily be ignored by the PRI at gubernatorial races.⁵⁹

In addition, the equations analyze whether Mexico – like Argentina – experienced an allocation biased in favor of the states that are over-represented in congress. **SENADORES** is defined exactly as in the Argentinean context. Hence, a positive value indicates that the state is over-represented. The “elasticity” of per capita transfers with respect to *senatorial* overrepresentation is significant, positive around one third, increasing somewhat between the De la Madrid and the Salinas presidencies. In the light of the described powerlessness of Mexican legislators an alternative explanation is plausible that does not rely on effective lobbying of autonomous lawmakers. In both periods the PRI was defending its hegemonic position within the Mexican party spectrum, fending off inherent regime change. This was of course more obvious in 1992, but even in 1986 the opposition threat was evident. The PAN is claiming to have won the Sonora and Chihuahua governorships in 1985 and 1986 with only electoral fraud

⁵⁹ There is another explanation to the different responses to electoral threat from the left and the right, which draws on the socioeconomic differences of the respective supporters. PAN voters are recruited from the middle to upper classes such as businessmen that benefit stronger from the services provided by the state governments (infrastructure, tax reductions...) as do poorer segments of the population. As PRD voters are either poor or left leaning intellectuals they value the states' services less highly but attach higher importance to social services – not typically provided by state governments. Therefore additional spending by PRI governors in PRD-bulwarks would not be very effective in attracting oppositional votes.

In related research I show that before elections the federal government's anti poverty program “Solidaridad” did channel its funds exactly into these left leaning states while “PAN-states” were neglected (other things such as level of development being equal. Cf. Kraemer, 1997). The picture is an almost exact reversal from the spatial allocation pattern of transfers. This suggests that the PRI followed a flexible strategy in fighting back at the opposition, always using the policy instrument that is more productive in “buying” electoral support.

having kept it from assuming power.⁶⁰ In such an environment the PRI probably tried to avoid *any* electoral loss, as each lost Senator or governor would signify an unheard of precedence. The signal of losing a governor, for example, is equally destructive for the PRI, whether it happens in a small state or in a very populous one. A loss would be like a binary signal signifying that the PRI is vulnerable and actually can lose elections. Maintaining dominion therefore calls for minimizing the probability that this signal will occur. In order to prevent this regime-destabilizing event from surfacing it is rational for the PRI leadership to scatter given resources primarily among population-poor states. This strategy maximizes the number of states that can be “bought” with the money at hand. As coincidentally small states are over-represented in the Senate, this party based hypothesis may explain the significantly positive SENADORES variable despite the weakness of lawmakers, which in addition don’t have an incentive to fight for their region, as they are constitutionally prohibited to seek reelection. The distribution of funds would in this scenario be “supply-leading” rather than “demand-following”.⁶¹

4.4. *Conclusions*

The **equity principle** has been **violated** in Mexico both in its weak and its strong formulation in 1992. Less developed states received systematically less per capita transfers than richer ones. In 1986 the evidence is not hard enough to make any judgment on the progressiveness. The special case of Tabasco, which is a rich

⁶⁰ Craig/Cornelius (1991, Table 3) report that the whereas the PRI held in 70% of the 300 federal electoral districts a hegemonic or monopolistic position (defined as holding at least a 25% points lead before the second party in the district), this proportion had fallen to 54% in 1985 before collapsing to a mere 35% in 1988.

⁶¹ The number of deputies in the lower chamber is roughly proportional to the represented population. While to some extent over- and under-representation exists also in the lower house, this phenomenon does not correlate with population size. Running the reported regressions with a analogously defined variable DIPUTADOS instead of SENADORES, explanatory power of the equations goes down (R^2 adj. falls around 10%) and DIPUTADOS remains insignificant. This fact is supporting the hypothesis that it was not so much the politically weak senators of over-represented states that lobbied for regional support, but a rational PRI leadership fighting against the collapse of a crumbling one-party system. If legislators were successful in supporting their constituencies, a significant positive coefficient would have to elapse for DIPUTADOS also, even if the representation intensity does depend on other variables than population size. It should also be noted that 40% of the deputies are not directly elected in their districts, but enter congress through multi-state party lists. They therefore don’t have an incentive to lobby for the prosperity of their home state as they are not accountable to the population of any one state. However, these 200 party candidates typically belong to opposition parties and have for that reason no real influence on policy making, anyway. On the other hand, most of the 300 directly elected and thus district-based representatives are PRI-members.

state and constantly received by far the most per capita transfers, stands also in stark contrast to the proposition.

The **incentive principle** in its weak interpretation has been **satisfied** in both 1986 and 1992. Increased tax effort by states was not punished by a withdrawal of transfers.

The **political nondiscrimination principle** has been **violated** in Mexico in several ways:

1. There are indications that the fiscal transfer system was used by the Mexican government in order to promote the ruling parties electoral perspectives. States loyal to the PRI received, ceteris paribus, more per capita funds than the opposition strongholds.
2. In gubernatorial election years the states with a strong PAN following received a substantial premium. This added electorally motivated volatility to the states' finances renders the process of expenditure-smoothing more difficult.
3. Population-poor states (that are also over-represented in the Senate) received more funds per capita. Possibly the PRI tried to maintain its political quasi-monopoly as long as possible. The number of electoral defeats play an important role in such a situation. By concentrating transfers on less populous states this number can be minimized.
4. In stark contrast to the Argentinean experience in the mid-1990s, the Mexican president did not seem to have influenced the pattern of transfer payments in order to benefit the state where his own family has its roots.

5. BRAZIL

5.1. The political institutions

Politically, Brazil differs sharply from both Argentina and Mexico by struggling with an extremely dispersed and unstable party system. Popular support for different parties fluctuate erratically, new parties spring up and formerly established parties fall into oblivion. Discussing the 1989 presidential elections, Schneider states that „what most distinguished the Brazilian electorate in 1989 was inexperience in voting to fill na-

tional offices and very weak ties to political parties.⁶² Parties do not represent a particular ideology but often serve primarily as a platform for ambitious individual politicians. In the face of only loosely organized and largely powerless parties a particular politician's restrictions on serving her or his clientele are much less binding. Ideological cohesion and party discipline are extremely low among the fairly autonomous legislators in both houses of Congress.⁶³ Regional clientelistic motivations tend to take the front seat whenever it comes to legislative voting.⁶⁴ State interests in nominating congressional candidates clearly dominate recommendations from national party headquarters.⁶⁵ Whenever it seems beneficial to do so a representative in either house can change parties at will in the middle of the legislative term with absolute impunity.⁶⁶ This makes Brazil the opposite case of Mexico, where – until very recently – the party leadership determined loyal candidates without much local “interference”.

As a consequence of the described political landscape, political fault lines in the legislative bodies run predominantly along regional interests rather than party organization. Otherwise it would be hard to conceive how a president like Collor could have governed with his party occupying only 6% of the seats in the Senate and 8% in the Deputies' Chamber.⁶⁷ It also makes log-rolling a more important issue for legislative initiatives originating in the executive branch, as the president cannot rely on his party alone for securing a majority, even if he were to succeed in disciplining its legislators. The „balkanization“ of the party system can also be pinned down below the federal level: after the gubernatorial elections in late 1990 the 27 states (including the Federal District) were ruled by governors belonging to 11 different parties!⁶⁸

⁶² Schneider (1996, p. 111). Mainwaring (1990, Table 3) reports that about 2/3 of Brazilian voters could not report any party preference in a 1988 poll.

⁶³ Mainwaring (1990, Table 6).

⁶⁴ Cf. Ames (1995) for an excellent analysis of the relationship between the prevailing electoral system and the outcomes in terms of voting behavior of legislators. „Brazil has always been a country of extraordinarily weak institutions and, occasionally at least, strong political personalities. ... among the weakest and most ephemeral have been political parties, with the possible recent exception of the Worker's Party (PT).“ Zirkler (1995, p.89).

⁶⁵ Cf. Ames (1996, p.7).

⁶⁶ Cf. Ames (1996, Footnote 18), Mainwaring (1990, p.11-12). *The Economist* (Nov. 9, 1996) reports that a third of all representatives did change parties in the last legislative session, several more than once, one of them switching even 7 times!

⁶⁷ For time series in seat distributions cf. Nohlen (1993, p.159-162).

⁶⁸ Cf. Wilkie/Contreras (1992, p. 282, Table 1032).

In this institutional context the engineering of a majority in Congress for a certain fiscal policy relies heavily on flexibly amending the original budget plan.⁶⁹ The most important institution through which the regional interests of lawmakers are articulated is the bicameral budget committee. This committee is particularly large with over 60 members that made not less than 12,000 budget amendments in 1990 alone! The committee has in the past widely been regarded as having served as a mere mechanism to provide benefits for the committee members' constituencies. During the chairmanship of longtime congressman João Alves from the state of Bahia in 1990-91 he made sure that the bulk of pork barrel was flowing into the pockets of his own cronies and followers. This continued until an "upsurge" in the committee unseated him and guaranteed a regionally more egalitarian distribution.

In order to investigate the political determinants of the regional transfer distribution it is therefore appropriate not to concentrate on differentials in the relative strength of the pretty meaningless parties but on the regional domination patterns in Congress and the Budget Committee.

5.2. Intergovernmental Fiscal Relations

The prominence of discretionarily negotiated "convenios" between the federal and the states' governments throws the door wide open for political bargaining behind the scenes.⁷⁰ This regional interest-clearing is at least highly probable for the negotiated *convenios*. The discretionary *convenios* represented about a fifth of total transfers in the early 1990s.⁷¹ They are based on "ad hoc decisions and devoid of any formal criteria"⁷² Over 3000 of these *convenios* existed in 1988 alone, accounting for almost half of the transfers not mandated by constitutional tax sharing imperatives. The *convenios* objectives are numerous. In general they are designed to transfer funds to lower echelons of governments undertaking expenditures on behalf of the federal government. Almost all of the transfers go to state governments with transfers to municipalities being a rare exception.⁷³ A World Bank publication suspected political exploitation of

⁶⁹ For the following paragraph cf. Ames (1996, p. 28-31)

⁷⁰ Cf. Bomfim/Shah (1991, p. 8). For an overview of the multitude of different transfers cf. Shah (1990, sections 2.1 through 2.3).

⁷¹ Cf. Shome (1995, p. 17-18).

⁷² Shah (1990, p. 41 and 48, cf. P. 47-50 for a description of the most important types of *convenios*).

⁷³ Cf. Shah (1990, p. 40-41).

the convenios noting that “the state of Maranhão, then-President Sarney’s home state had a very peculiar participation in the overall distribution of negotiated transfers [...receiving] higher funding [...] than all the state governments in the northern region as a whole.”⁷⁴

Even if the formal revenue sharing mechanisms were to work fully according to the established rules and without political interference by either the administration or Congress, appendix 2 indicates that transfers stemming from pure tax sharing mechanisms (on average US\$ 183 p.c.) were accounting for less than half of the total payments to lower echelons of government in 1991 (US\$ 395 p.c.). The larger part of vertical payments were therefore transfer from non-tax-sharing sources that indeed proved to be more regionally volatile as the tax sharing component of the vertical transfers (variation coefficient of 2.4 versus 1.1). Besides, it should be noted that even the formulas applied for constitutional tax sharing have been subject to political renegotiation in the states’ Council of Finance Ministers. The renegotiated share in 1990-91 differed substantially from the result that had been obtained by applying the formulae, with some of the states giving up over a third of their calculated receipts (in the case of São Paulo 75%, Rio de Janeiro 64%), while others received about a third more than the formulae would suggest.⁷⁵

5.3. Empirical Results

In the following we investigate the regional variances of per capita transfers in the **year of 1991**. This year is chosen as president Fernando Collor de Mello was already established in the executive branch and at the peak of power and popularity before the corruption allegations led to his impeachment. 1991 is therefore clearly not a year that has been dominated by a political transition, but can be considered as a „normal” year, although “normal” years didn’t seem to occur very often in Brazil until recently. The equations include both political and nonpolitical variables explaining the dependent variable TOTALTRANSFER, which is the standardized amount of transferred US-Dollars per capita in 1991 (equation B1). Equations B2 and B3 break the total of 1991 down into more rigid transfers from constitutionally mandated tax sharing mecha-

⁷⁴ Shah (1990, p. 41-47 and Table 15 on p. 42).

⁷⁵ Cf. Shah (1990, Table 13 and p. 32 and 66).

nisms (TAXTRANSFER) and the more flexible transfers from other agreements (NON-TAXTRANSFER).

The **nonpolitical variables** include TAXEFFORT, which is the standardized ratio of the states' own revenue (excluding the transfers from central government) and their respective GNP. In addition, PCY (the per capita income in 1985)⁷⁶, and SQRTDENSITY (the square root of the population density) have both been considered for use in the equations. Both indicators are explicitly used in the Funds that transfer resources to the states for redistributive purposes.⁷⁷ But due to the high correlation between PCY and SQRTDENSITY (correlation coefficient = 0.69) they were not applied simultaneously. As the results remain virtually unchanged whether one or the other of the variables is used only the results for PCY are reported here, always bearing in mind that the density variable would generate equivalent outcomes. PCY is preferred relative to SQRTDENSITY because of the lower correlation with the other independent variables.⁷⁸

The **political variables** do not comprise party variables as justified above. In order to isolate the wide differences of representation of states in the Brazilian Congress we use the variable SENADORES, which is defined as the number Senators per million voters. As the data in appendix 2 shows impressively the representation is very unequal between states: whereas the state of São Paulo can send only 0.16 Senators per million voters the number for Roraima is 41, i.e. 250 times as many! While the bias against the more populous states is slightly less dramatic in the lower chamber the extreme inequality in representation intensity remains.⁷⁹ With Brazilian lawmakers not effectively restricted by party discipline when promoting their clientelistic and regionalist interests, the considerable inequality in relative representation could lead to increased per capita transfers to the over-represented states. In this case SENADORES will carry

⁷⁶ Data availability did not allow for the use of the HDI as in the cases of Argentina and Mexico.

⁷⁷ Cf. Shome (1995, p. 18).

⁷⁸ An alternative indicator for the relative cost per capita of public service provision, the degree of urbanization, is even more correlated with PCY (0.81) and therefore rejected.

⁷⁹ The correlation coefficient between senators and deputies per million voters is +0.997. Whereas especially the larger states are better represented in the lower chamber, this does not change the overwhelming pattern of the more intensive representation of less populous states. Data for the absolute number of deputies per state refers to the 50th congress (1995-1999) and comes from Camara de Deputados (1995, p. 929-933).

a positive sign. If congressional politics play no role at all, SENADORES should be indistinguishable from zero.

BAHIA is a dummy variable equal to one in the case of Bahia and zero otherwise. If the then-chairman of the budget committee, João Alves, had been as successful in assuring favorable transfers for his home state of Bahia as he is said to have been in amending the budget, BAHIA would bear a positive sign. An additional dummy variable of President Collor's home state, ALAGOAS, is included in the equations. SÃO PAULO is a third regional dummy variable that is to control for any „metropolis-bias” in favor of the most populous and the politically and economically by far most influential state (in absolute terms).⁸⁰

The standardized dependent variable of equation B1 in Table 4 below is TOTALTRANSFER, the total transfer received per voter by the 27 Brazilian states in 1991 in current US\$. There is a perverse effect indicating that better-off states received *ceteris paribus* higher transfers. However, while significantly positive at the 99% level, the relatively small size of the PCY-coefficient (+0.16) attests a regressive pattern of a relatively milder sort than in Mexico (where the HDI-variable was used): an increase in one standard deviation in per capita income will lead to an increase in total transfers per voter of “only” a sixth standard deviation. However, the postulate of redistribution towards economically weaker states has been significantly violated as the richer states receive relatively *more* per capita funding (coefficient > 0). If the total of transfers are broken down into a tax- and a non-tax part it is interesting to note that the perverse distributional pattern exists only for the more discretionary non-tax part (equation B3) with a highly significant “elasticity” of +0.27. By contrast, the formula-based transfers per voter that stem from tax-sharing arrangements seem to be *negatively* dependent from per capita incomes (equation B2), although the T-value of -1.46 indicates a low significance level of only 84%. Keeping this caveat in mind it is striking that only the more discretionary part of transfers (i.e. from non-tax sharing sources) had the undesired distributional impact of favoring economically advanced states. This effect was pronounced enough to display a positive relationship between income and transfer of a state even on the aggregate level (equation B1). Thus a somewhat casual observation in a World Bank publication that the negotiated transfers seem to reverse the equity

objectives in the formulae-based tax-sharing arrangements is supported by the empirical evidence.⁸¹

TAXEFFORT shows no significant coefficients in any of the three equations. It can therefore be postulated that the prevailing transfer system did not create any incentives in favor of enhanced own revenue collection on the state level (positive sign) but did also avoid moral hazard problems (negative sign).

Table 4: Determinants of the Regional Distribution of Federal Transfers per Registered Voter to State Governments in Brazil, 1991

	B1	B2	B3
Dependent Variable ⇨	TOTALTRANSFER (per voter, 1991)	TAXTRANSFER (per voter, 1991)	NONTAXTRANSFER (per voter 1991)
PCY	.16 (3.05)	-.15 (-1.46)	.27 (3.69)
TAXEFFORT	-.03 (-.61)	-.01 (-.08)	-.03 (-.53)
SENADORES	1.00 (22.16)	.87 (9.84)	.99 (15.59)
ALAGOAS	.04 (.16)	-.03 (-.07)	.06 (.18)
BAHIA	.09 (.38)	-.15 (-.34)	.17 (.55)
SÃOPAULO	-.31 (-1.25)	.05 (.11)	-.43 (-1.24)
R ² adj.	.90	.76	.86
F-Value	84.4	19.4	41.3
Sample Size	27	27	27

Note: The values in parentheses are t-statistics. The shaded coefficient are significant at a level of 90% or more. All F-values are above the critical values. For sources and definitions cf. appendix 1.

What are the results of the „political” variables introduced above? There is no evidence that the president or the chairman of the budget committee worked in order to

⁸⁰ Cf. Shah (1990, p. 47).

⁸¹ Cf. Shah (1990, p. 47).

favor their home bases of Alagoas and Bahia respectively.⁸² Similarly insignificant results are reported for the dummy applying in the case of the state of São Paulo. No “metropolis-bias” could be detected.

The most striking result of the Brazilian equations, however, are the large and significant coefficients of the SENADORES variable. Indeed, the unadjusted R^2 falls barely from 0.96 only to 0.94 when all other independent variables are omitted in B1, whereas the adjusted R^2 remains virtually unchanged! The information incorporated in additional variables is thus exactly outweighed by their statistical cost in terms of decreasing degrees of freedom. The „elasticity” hovers around unity, being larger in the case of discretionary transfers (equation B3). One result emerges unambiguously: the intensity of representation in the Senate is *the* driving force determining the distribution of federal transfers to the states. Surprisingly, this is also true for the „rules-based” tax sharing transfers, indicating either a bias in the formulae originating in congressional log-rolling or a non-adherence to the established formulae or a combination of both of the above. The Senators have clearly been zealous and potent enough to control the pattern of transfers favoring their own constituencies. As the distribution of Senators (and also of Representatives) is highly biased to the detriment of the more populous states, the net effect of this political power-play has been an equally skewed distribution of funds. Figure 2 shows the plain relationship between political representation of a state and the transfers received.

Is the congressional domination of the transfer distribution is a mere statistical aberration because the over-represented states tend to have a lower population densities and therefore higher costs of providing public services, which in turn calls for higher per capita transfers for equity reasons? Unfortunately not. While it is true that there exists a negative relationship between SQRTDENSITY and SENADORES (-0.35) this is *not* suggesting that either sign or significance of the SENADORES coefficients are actually representing characteristics of density differentials. Running the equations with the SQRTDENSITY variable instead of PCY (remember the high correlation of 0.69

⁸² Schneider (1996, p. 114) asserts that while „portrayed as a ‘northeasterner’ largely on the basis of tours of duty as mayor of Maceió (1979-1982) and governor of Alagoas (1987-1989), Collor was more a product of Brazil’s heartland, his home for most of his life.” That Collor was educated, among others, in Rio de Janeiro and Brasília may partly explain why the ALAGOAS variable did not show the same relevance than LARIOJA in the case of Argentina.

between the two), the absolute and T-values of the SENADORES coefficients hardly change, whereas SQRTDENSITY performs somewhat “worse” in terms of size and significance of the coefficient as did PCY.

Figure 2:
Parliamentary Representation and Intergovernmental Transfers, Brazil

5.4. Conclusion

The **equity principle** was **violated** in the year examined (1991). States with higher per capita income received, *ceteris paribus*, higher per capita transfers. This is due to the significantly progressive distribution of transfers from non-tax sources.

The **incentive principle** was **violated** in the **strong**, but **adhered** to using the **weak** interpretation. The tax effort of states played no role in determining the secondary distribution. While higher tax efforts on subnational level were not encouraged, they were at least not influenced negatively either.

The **political nondiscrimination principle** was **violated**. The political representation variable clearly prevails as the most important influence in both the Brazilian transfer system. In a democracy a fair representation of each segment of the population therefore seems to be a precondition for achieving a politically unbiased distribution of fiscal resources.

6. CONCLUSIONS

Ahrens stresses the point "that the political institutions play a major part for determining the design, functioning and effects of a federal system."⁸³ This claim is supported by the findings of this research. This paper has attempted to isolate political factors behind the regional distribution of transfers from central government to lower administrative units that may be unavoidable in federal nations when efficient tax and responsibility assignments prevail. Political institutions have proved to be of equal or even higher importance as economic and socio-demographic factors in Argentina, Brazil and Mexico.⁸⁴

Serious questions are raised by these findings concerning good governance problems. It appears that a well functioning political system with fine tuned checks and balances between the constitutional powers is as important as the reduction of discretionary power by the central government. Recent research on the effect of budgetary institutions on fiscal outcomes in Latin America has come to the conclusion, that a reduction in the discretionary power in budgetary procedures leads to lower primary deficits and more stable macroeconomic outcomes.⁸⁵ But can a similar conclusion be drawn for the issue of intergovernmental relations or is skepticism called for?

While strict adherence to binding legal rules may indeed be a necessary condition for less distortionary fiscal policies and less partisan abuse of public funds, this research suggests that it is hardly a sufficient one. The improvement of budgetary procedures should optimally be complemented by reform of the political institutions where needed. The shortcomings of some democratic systems of present day Latin America will lead to biased results even if strict adherence to the law were guaranteed.

⁸³Ahrens (1996, p. 20).

⁸⁴ The fact that representation matters is not confined to developing countries, however. Analyzing the 1995 net contribution of 14 EU member states to the union's budget (excluding the exceptional case of tiny Luxemburg) it can be shown that a higher number of national votes in the EU's Council of Ministers per citizen leads to a significant reduction in the net contribution after correcting for different per capita incomes. If all variables are standardized with a zero mean and unity standard deviation, the estimate is as follows: $\text{NET CONTRIBUTION} = +0.62 \text{ PER CAPITA INCOME} - 0.44 \text{ COUNCIL VOTES PER CITIZEN}$. ($R^2 \text{ adj.} = 0.5889$, both coefficients are significant at more than 98% and the coefficient of correlation of the two explanatory variables is -0.2067). Data Sources: *The Economist* (Nov. 12, 1996, p. 57 and Feb. 1, 1997, p. 54).

⁸⁵ Cf. Alesina/Hausmann/Hommes/Stein (1995).

An example may underline the mutual reinforcement of binding rules and truly democratic political representation. Although Argentina introduced tougher rules concerning budget amendments in the early 1990s⁸⁶, the dominant impact of the skewed regional representation in Congress has not changed. While the reforms may have clamped down successfully on the increase of the fiscal deficits that used to be driven by a multitude of amendments, they were certainly not successful in moving fiscal relations with the provinces towards distributional justice or rationality. Nor do they seem to have effectively held the president's discretionary power in check. The allocation of resources that is unjustifiable within the normative framework presented in this paper continues on a smaller fiscal scale. The unfair regional incidence has survived the reforms because it is founded on non-representative political representation that ridicules the democratic principle of „one (wo)man one vote“, because the weight of an individual vote cast is determined by the regional background of the voter. The power structure in the legislation and the concentration of power in the presidency effectively hinder a reorganization of intergovernmental fiscal relations despite stabilizing reforms of budget institutions.

As a result a more radical stance towards the introduction of truly democratic political institutions should be taken that reduces the impact of regional clientelism or the de facto monopolization of power in the executive. This would not only lead to fairer and more accountable policies by the public sector but would also help to keep down the growing frustration and cynicism towards the political institution prevailing in the region. Failure to react swiftly with institutional reform comes close to risking a political backlash that might effectively put at risk the democratic achievements of the early 1980s, of which the region used to be justly proud of.

⁸⁶ Cf. Alesina/Hausmann/Hommes/Stein (1995, Appendix B, Question 3).

