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Reform Priorities for Sub-national Revenues in Brazil

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Abstract

This paper surveys the system of sub-national own revenues and the inter-governmental transfer system (including the sharing of oil revenues) in Brazil, highlighting their critical flaws. The latter include heavy reliance on a mixed-origin/destination-based value-added tax and many sub-national governments' inadequate exploitation of the tax bases assigned to them. The paper then discusses reform priorities, outlining a comprehensive reform strategy and some initial steps that could be taken toward its implementation in the near term, as well as related political economy considerations.

JEL classifications: H21, H22, H24
Keywords: Taxation, Sub-national governments, Inter-governmental relations, Brazil

1. Introduction

In comparison with the rest of Latin America, and also with many federal countries around the world, Brazil is characterized by a high degree of revenue decentralization at the state level, where own revenues account for over 9 percent of GDP. In contrast, municipalities rely more heavily on transfers from the higher levels of government, with own revenues amounting to only about 2 percent of GDP, or 6 percent of the total tax burden.

Substantial reliance by sub-national governments (SNGs) on own revenues has significant advantages in terms of increased accountability to the electorate, closer linkage of sub-national taxes and benefits from spending, greater conformity with local preferences as to the size and composition of the tax burden, and greater predictability of resources for sub-national budgets.

However, the Brazilian sub-national tax system is fraught with significant flaws which are widely recognized to affect adversely efficiency, equity and competitiveness. The main problem is the heavy reliance of state finances on a mixed origin/destination-based VAT (the ICMS), with a large dispersion of effective rates across goods and services and across the national territory, which has led to predatory tax competition (the so-called fiscal war), de facto cascading, and high compliance costs for taxpayers. At the local level, many municipalities do not appear to exploit adequately the important tax bases (services and urban properties) assigned to them.

Reform efforts to date have been stymied in particular by the fact that a shift to a more neutral destination-based VAT with a uniform base across the nation would entail significant losses for the states that are net exporters to the rest of the country. However, the urgency of such a reform is becoming more apparent to the state authorities, as they see their revenues eroded by the fiscal war, and the competitiveness of Brazilian enterprises hampered by the cumulativeness and high compliance costs of the ICMS, in an environment of already substantially appreciated exchange rates and deteriorating performance of manufacturing exports.

The system of inter-governmental transfers in Brazil also suffers from important shortcomings**.** It includes both a number of mandatory revenue-sharing arrangements, as well as other transfers, also mostly mandated by laws and linked to specific expenditure programs (in particular in the education and health areas). The fact that the revenue sharing base excludes federal social contributions (some of which are in fact turnover-type indirect taxes) has created a

strong incentive for the federal government to increase these contributions in recent years. This has had significant efficiency costs, since these levies are still partly cumulative, and earmarked to social spending, thereby compounding the already high degree of rigidity of the Brazilian budget. A special sharing arrangement (currently in the process of substantial revision) applies to revenues from oil and mining resources.

A further substantial flaw of the design of the revenue sharing regime is the fact that its distribution among the different states has been fixed for more than 20 years, in contravention of a constitutional requirement that the distribution formula should reflect relative (and changing over time) capacities of the recipient governments to carry out their spending responsibilities. This prompted the Supreme Court to rule at the beginning of 2010 that the current regime is unconstitutional and must be changed by the end of 2012.

This ruling has opened a window of opportunity to reconsider and rationalize the main revenue-sharing mechanism with the states. Moreover, it might also have opened an opportunity to overcome the so-far-insurmountable obstacles to the reform of the ICMS, to the extent that the main losers from such a reform could gain from a redefined transfer regime.

This paper begins with brief overviews of sub-national own revenues and the inter-governmental transfer system (including the sharing of oil revenues), highlighting their critical flaws (Sections 2 and 3, respectively). Section 4 discusses reform priorities, outlining a comprehensive reform strategy and some initial steps that could be taken in the near term toward its implementation. Section 5 concludes.

2. An Overview of Sub-national Own Revenues in Brazil

2.1 Composition and Distribution of Total Sub-national Revenues

The last century has witnessed significant fluctuations in the degree of revenue decentralization in Brazil, largely mirroring ups and downs in the political strength of the central government (CG) vis-à-vis sub-national governments. In the aftermath of the fall of the military dictatorship, the Constitution of 1988 gave a strong renewed impulse to decentralization, by both expanding the base of the main source of revenues for the states (the *Imposto sobre Circulação de Mercadorias e Serviços*, ICMS), and substantially increasing the percentages of federal taxes shared with the states, and especially the municipalities. At the same time, however, federal

contributions[1] earmarked for the financing of social security programs were excluded from the revenue sharing base, opening the way for a recovery of the federal government's share in total revenues in subsequent years. Indeed, the last 20 years have seen a steady increase in such contributions, some of which are levied on enterprises' turnover and therefore involve significant cascading, with attendant distortions.[2]

Table 1 below presents the breakdown of taxes[3] collected by each level of government in 2010. It highlights both the relatively high level of the tax burden in Brazil (at over 35 percent of GDP, significantly higher than the Latin American average, and broadly in line with the OECD average), and the fact that sub-national taxes account for nearly one third of the total, a percentage significantly higher than the worldwide average, except for a few large federations.

Table 1. Brazil: Level and Composition of Tax Burden, 2010

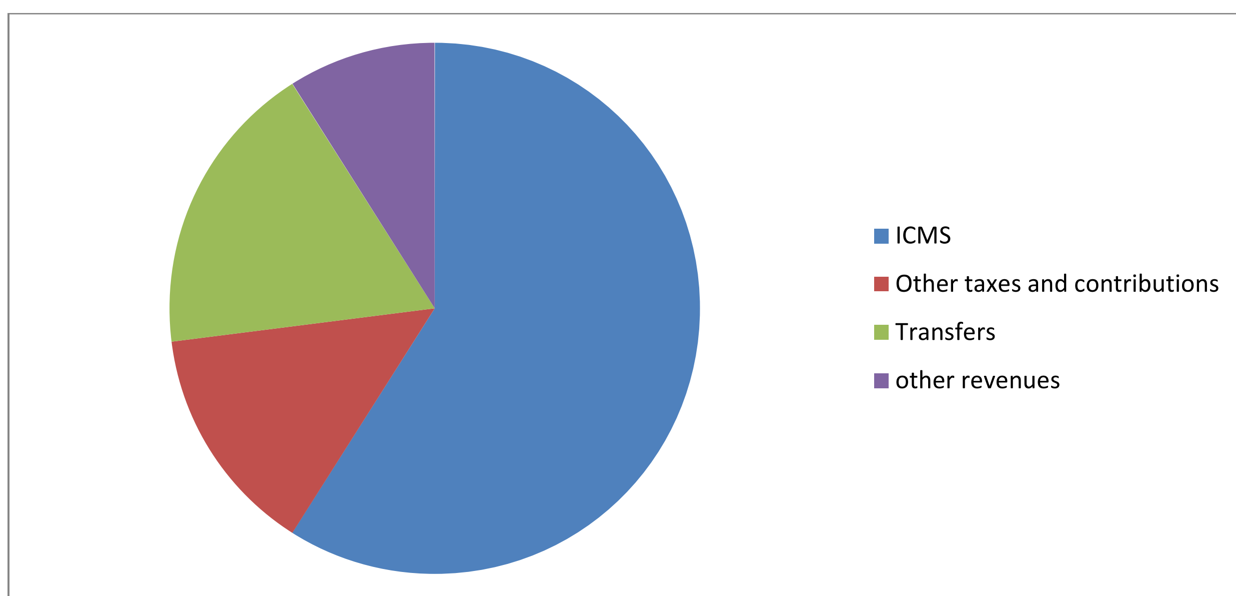
	Billions of *Reais*	**% of GDP**	**% of total**	***Reais* per Capita**
Total	1,292.1	35.2	100.0	6,957.3
Federal	876.1	23.8	67.9	4,717.7
Taxes	275.9	7.5	27.2	
Contributions	300.1	8.2	23.2	
Social Security	282.5	7.7	21.9	
Other	17.6	0.5	1.4	
States	338.0	9.2	26.2	1,820.0
VAT (*ICMS*)	264.7	7.2	20.5	
Motor vehicles (*IPVA*)	21.3	0.6	1.6	
Other	52.0	1.4	4.0	
Municipalities	77.9	2.1	6.0	419.6
Tax on services (ISS)	30.4	0.8	2.4	
Property tax (IPTU)	16.0	0.4	1.2	
Other	31.5	0.9	2.4	

Source: Afonso and Castro (2010).

[1] These contributions included, in addition to the traditional ones on payroll that finance the pension system, two others (COFINS and PIS-PASEP) levied on enterprises' turnover, and the now-defunct tax on financial transactions (CPMF).
[2] The cascading was reduced but not eliminated by a reform in 2003.
[3] Taxes are here defined to include all compulsory levies not linked to the provision of a specific service, i.e., excluding user fees.

Own-source revenues account on average for over 70 percent of total state revenues (Figure 1). There is, however, a wide regional dispersion around this average, as many of the states of the North and Northeast are substantially more dependent on inter-governmental transfers than those in the South and Southeast (Figure 2). This reflects both the lower tax productivity of these generally poorer states[4] and the formula for horizontal distribution of shared revenues that reserves 85 percent of FPE transfers to states in the North, Northeast and Center-West regions.

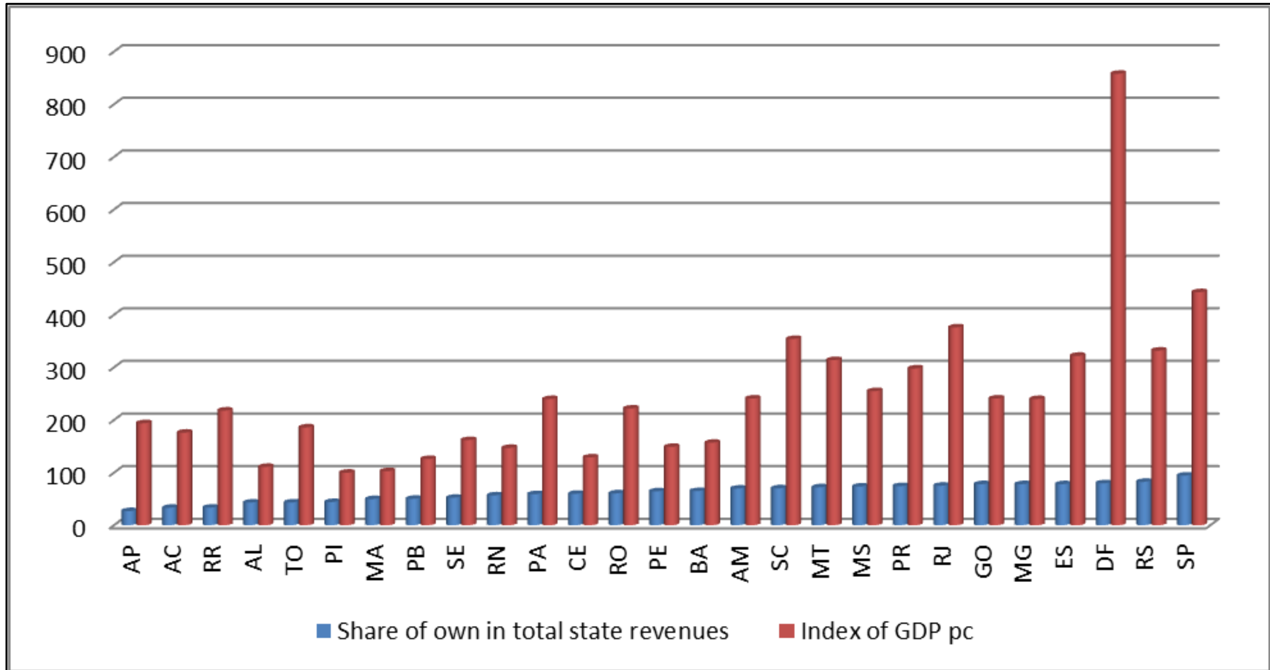
Figure 1. Brazil: Composition of State Revenues, 2010



Source: Ministry of Finance (MOF) database.

[4] A recent study (Boueri Miranda and others, 2011), utilizing regionally differentiated stochastic frontiers, found higher elasticities of state revenues with respect to their GDP in the South and Southeast regions.

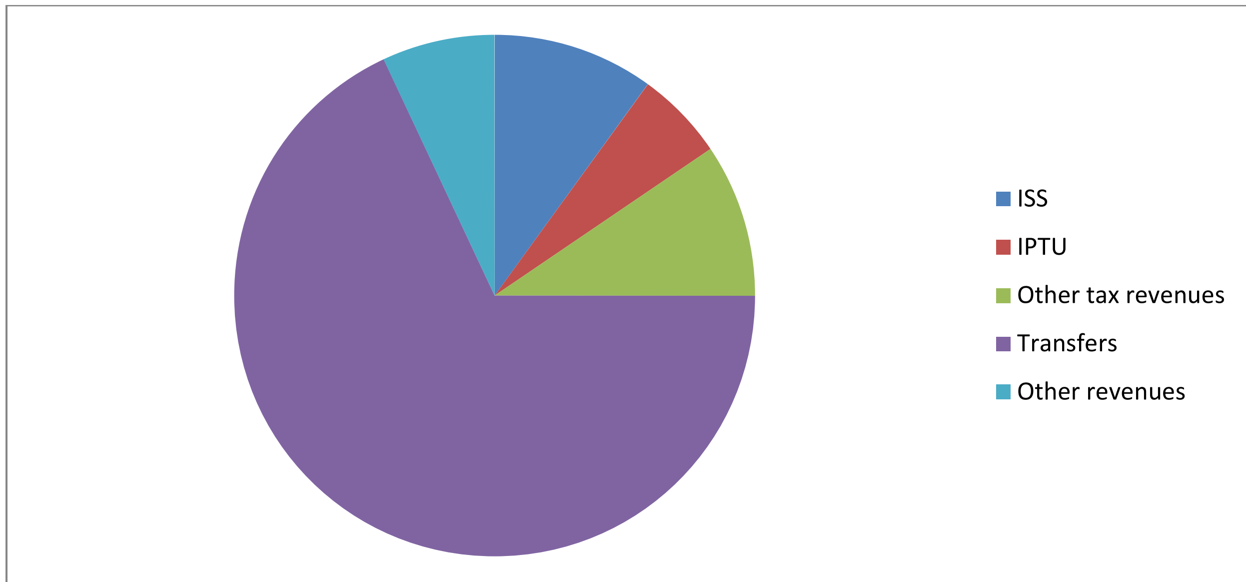
Figure 2. Composition of Revenues by State, 2010
(as percent)



Source: MOF database.

Dependence on inter-governmental transfers is substantially higher, on average, for municipalities. These receive both direct transfers from the federal government (according to the criteria detailed below) and transfers from the respective state governments, mostly in the form of a devolution-based sharing of state revenues from the ICMS. Own revenues, mainly from a tax on services (ISS) and from a tax on urban properties (IPTU), accounted on average for less than one third of total municipal revenues in 2010 (Figure 3).

Figure 3. Brazil: Composition of Municipal Revenues, 2010



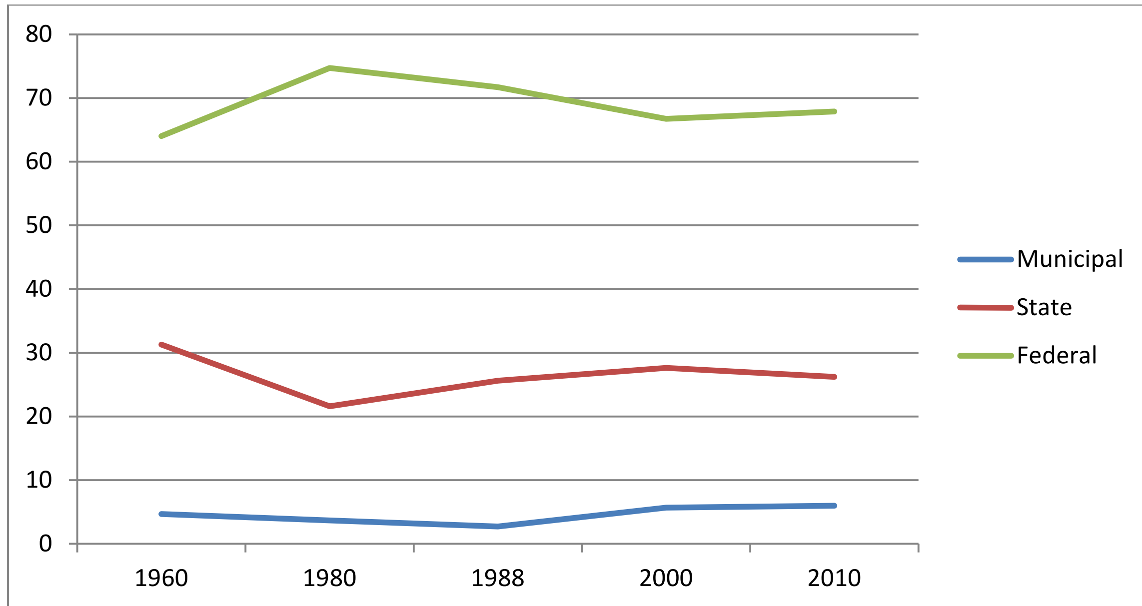
Source: MOF database.

However, the degree of dependence on inter-governmental transfers varies significantly across municipalities as well. Small municipalities are on average substantially more dependent on transfers than larger ones,[5] reflecting the nature of the bases of the ISS and IPTU (more buoyant in cities than in small rural communities), the weakness of their tax administrations, and the criteria for horizontal distribution of transfers from the federal government. Large cities, in contrast, collect on average more than 50 percent of their revenues through local taxes.

The impact of inter-governmental transfers on the vertical distribution of revenues is highlighted in Figures 4 and 5 below, which show the evolution of tax revenues of different levels of government, both before and after intergovernmental transfers, over the period 1960-2008. The charts show the substantial redistribution (in terms of available resources) that the Constitutional reforms of revenue sharing arrangements engendered in favor of municipal governments after 1988. It also shows the recovery in the federal share of both before- and after-transfers revenues, as a result of the growth in non-shared social contributions mentioned above.

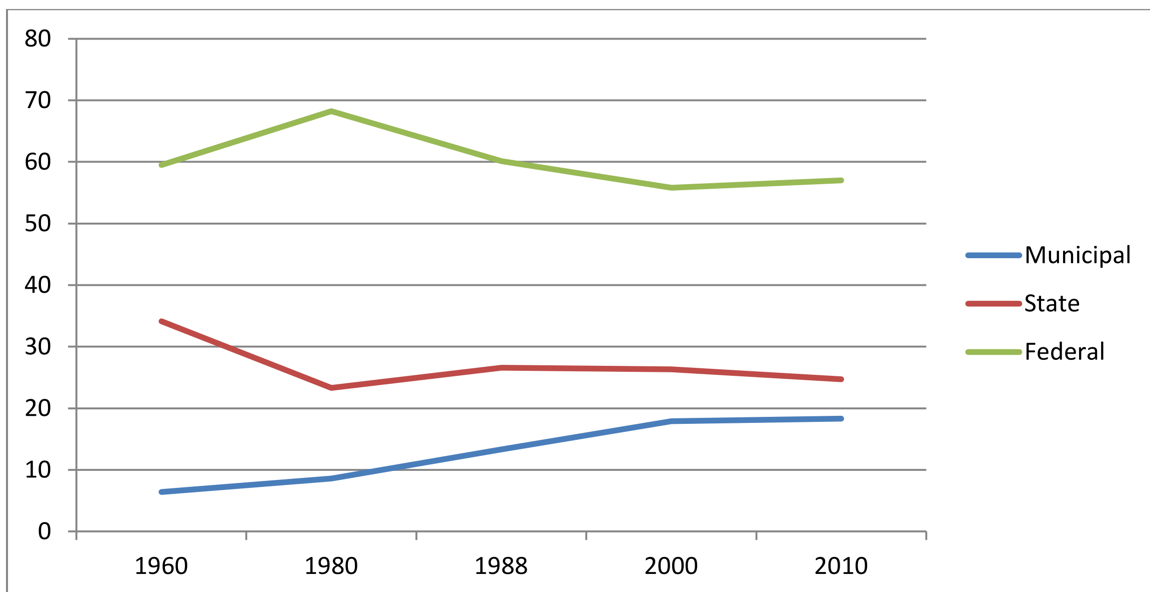
[5] Mendes, Miranda and Cosio (2008) estimate that in 2006 the share of transfers in total revenue exceeded 80 percent on average for municipalities with less than 50,000 inhabitants, which account for almost 90 percent of all Brazilian municipalities

Figure 4. Brazil: Evolution of Tax Revenues of Different Government Levels before Transfers, 1960-2010
(as percent of total)



Source: Afonso, Castro and Monteiro (2012).

Figure 5. Brazil: Evolution of Revenues of Different Levels of Governments after Transfers, 1960-2010
(as percent of total)

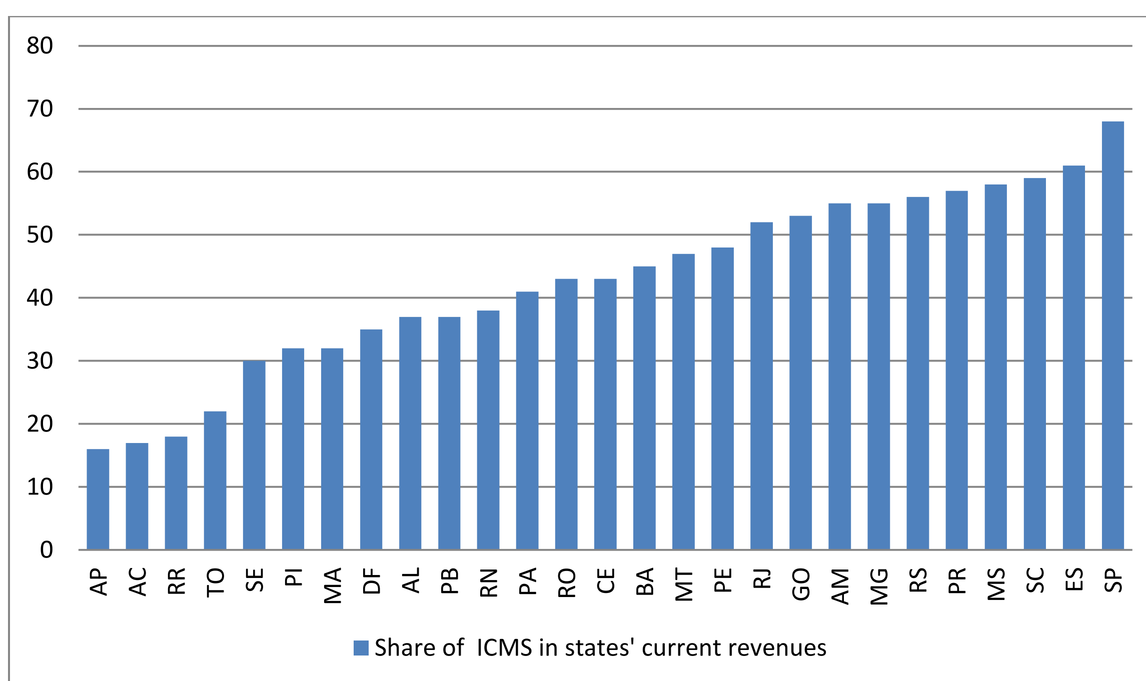


Source: Afonso, Castro and Monteiro (2012).

2.2 Main Issues in the State-Level VAT (ICMS)

While Brazil compares well with many countries in the degree of decentralization of revenue responsibilities to the state level, the states' own revenues present a rather imbalanced composition, with heavy concentration on one tax (the ICMS) fraught with substantial flaws (which are well documented in the literature[6]) that adversely affect efficiency, horizontal equity, and competitiveness, and impose heavy compliance costs on taxpayers.[7] Figure 6 shows the dependence of different states on the ICMS.

Figure 6. Share of *ICMS* in States' Current Revenues, 2010



Source: MOF data.

In contrast with most VATs around the world, which tax domestic consumption (including imports and excluding exports and investments), the ICMS is levied on production plus imports. Exports have been zero-rated since 1996 (by the so-called *Lei Kandir*), but in practice, since frequently credits are due to exporters in one state for inputs taxed in other states, there is a general reluctance among states to provide such credits. Moreover, delays and other

[6] See, among others: Fórum Fiscal (2006a and 2006b); Afonso and Serra (2007); Rezende (2009 and 2012); and Dornelles and Afonso (2011).

[7] See Blyde et al. (2009) for a discussion of the growth implications of Brazil's high and distortive tax burden. See also FIESP (2010).

obstacles to refunds undermine export competitiveness and, while credits are allowed for purchases of capital goods, they can only be used over a period of four years and are sometimes delayed beyond that time limit, becoming de facto unrealizable.

The base of the ICMS consists of value added in the production of goods and selected services, with the taxation of other services assigned to the municipalities. As the services sector has been the most dynamic one in the Brazilian economy in recent decades, the exclusion of most services from the ICMS base has significantly dampened the growth of the tax. Moreover, technological changes are increasingly blurring the demarcation line between the production of goods and that of services,[8] further weakening the enforcement of the tax.

The ICMS is levied on a mixed origin-destination basis. Intrastate transactions are taxed at rates that are set by each state and that vary widely across the national territory. Most common are a standard rate of 17 percent and reduced rates of 7 percent for staple goods and 12 percent for selected other goods. Higher rates apply to fuels, electricity and telecommunication services, which together account for around 40 percent of ICMS revenue. The heavier burden on these important inputs into production processes further undermines efficiency and competitiveness. Furthermore, and in contrast with common international practice, all these rates are applied on a base that includes the tax, thus masking a significantly higher effective rate[9] on the value of the transaction.

Interstate transactions are taxed in the state of origin at the rate of 12 percent, which is reduced to 7 percent for exports from the South-Southeast states to the North-Northeast ones; the destination state taxes the imported good at its internal rate and provides a credit for the interstate tax. This mechanism, designed to redistribute part of the revenue of the tax to the poorer states, creates, however, substantial scope for evasion (through fake interstate sales, the so called *passeio das notas fiscais*) and for cross-border shopping.

The predominantly origin-based system also facilitates the use of the ICMS as an instrument of industrial policy, and has indeed led to predatory competition among the states through the granting of incentives, exemptions, and various other non-transparent special benefits, to attract enterprises to the state (the so called g*uerra fiscal*, or fiscal war). A further

[8] For instance, should the sale of electronically downloaded books be considered sale of a good or of a service?

[9] For example, the standard rate of 17 percent is equivalent to a 20 percent rate on the base excluding the tax. Moreover, the two federal contributions levied on turnover (*COFINS* and *PIS*) are included in the base of the *ICMS*, further increasing the effective rate of the latter on the pre-tax value of the transaction.

distortion is created by the fact that some states, especially those with large ports, grant reductions of the ICMS to imports from abroad, with the aim of attracting importing enterprises to the state. This incentive bestows imports from abroad a significant competitive advantage over comparable products imported from other states.[10]

Moreover, the wide differences in bases, rates, and collection and enforcement procedures across states increase substantially taxpayers' compliance costs, especially for enterprises operating in multiple states.[11] With a view to facilitating collection and improving enforcement, a significant portion of the ICMS is collected through the so-called *substituição tributaria*. Under this system, the tax collected at an early stage of the value-added chain includes the estimated tax due on the value added in subsequent stages of the chain. Since the withholding is final, the system, albeit efficient from an administration standpoint, detracts from the neutrality of the tax to the extent that the value added in the later stages is not correctly estimated.

Growing recognition of the seriousness of the flaws outlined above has led to a number of (so far unsuccessful) attempts to reform the ICMS, as well as the federal taxes and contributions levied on value added or turnover (IPI, COFINS and PIS). These efforts are discussed in Section 4 below in light of relevant international experience.

2.3 Main Issues with Municipal Taxes

The largest source of municipal revenues is, as mentioned above, a tax on the provision of most services (excluding those related to transport or communications that are subject to the ICMS) by enterprises or self-employed persons operating in the municipality. This tax is levied at rates set by each municipality within a federally specified range of 2-5 percent. Municipalities can grant exemptions and other benefits under the tax, and they have used it as an instrument of competition to attract large service enterprises (e.g., supermarkets) to their jurisdictions.

In general, however, the ISS constitutes an easier and politically more attractive tax handle for the Brazilian municipalities than the more traditional tax on urban properties (IPTU),

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[10] If the ICMS rate on certain imports is reduced to, say, 2 percent when the products are sold outside the importing state, they pay a total tax of 7 percent (the 2 percent paid at import plus the 5 percent difference between the standard internal rate of 17 percent and the interstate rate of 12 percent). A comparable domestic product would pay a total ICMS rate of 17 percent.

[11] According to World Bank estimates, Brazil ranks highest (by a wide margin) in an international comparison of the number of hours devoted by enterprises to calculating, filing and paying taxes.

which collects only about 0.4 percent of GDP, about half of the yield of the ISS. The poor average performance of the IPTU reflects a number of factors:

- The relatively high share of non-registered properties in Brazilian cities;
- The lack of reliable and updated information on market values of properties;
- Weaknesses in enforcement procedures, due to legal uncertainties and/or lack of capacity of local tax administration; and
- Political economy factors: Taxpayers' resistance to a visible tax, not clearly linked to benefits received, frequently prompts municipal authorities to:
    - Choose a standard rate at the lower end of the permissible range
    - Grant exemptions
    - Not invest in the expansion and modernization of property cadastres
    - Resist updating cadastral values (which in current Brazilian legislation must be enacted through municipal laws); and
    - Not pursue delinquent taxpayers, and/or grant periodic tax amnesties.

Given these weaknesses, it is not surprising that IPTU revenues have lagged significantly behind rapidly increasing real estate market values in recent years.[12] The same weaknesses also contribute to explaining the relatively poor performance of the municipal tax on real estate transfers (ITBI), which only collects the equivalent of about 0.1 percent of GDP.

Recent analyses[13] suggest that the *IPTU* performance varies significantly across municipalities. It tends to be best in larger municipalities of the South and Southeastern regions. This reflects both larger tax bases (greater concentration of higher property values) and better tax administration capacities (including use of modern technologies for registration of properties and assessment of cadastral values) in this type of municipalities. It may also, however, reflect in part lower tax efforts on the part of small municipalities that are favored by the distribution formula of federal transfers (see below for details).

[12] Over the last couple of years the rate of growth of *IPTU* revenues nationwide has been about half that of real estate prices.
[13] See Afonso (2010), and De Cesare, Dantas and Portugual (2012)

3. The Intergovernmental Transfer System

The intergovernmental transfer system in Brazil includes a variety of (partly overlapping) mechanisms:

- Revenue sharing
- Mandatory transfers linked to education, health and other programs
- So-called compensatory transfers, designed to compensate for certain externalities; and finally
- Discretionary grants, typically tied to specific sub-national spending programs.

The most significant types of these transfers are briefly reviewed in the following subsections.

3.1 Revenue Sharing

In the Brazilian federation, revenues are shared by the federal government separately with the states and the municipalities, and by the states with their respective municipalities. Revenue-sharing arrangements are relatively large, amounting to the equivalent of 6.0 percent of GDP in 2011 (Table 2). Some of the arrangements are mandated by the Constitution, others by federal or state laws. All share the characteristic of having as a base only a subset of the revenues of the higher-level government. However, the criteria for vertical and horizontal distribution differ substantially among them. The three largest revenue sharing mechanisms (the *Fundo de Participação dos Estados*, FPE; the *Fundo de Participação dos Municípios,* FPM; and the sharing of the ICMS) are unconditional; others are tied to education programs; and others still are compensatory in nature.

Table 2. Brazil: Composition of Revenue Sharing Arrangements, 2011

Type of sharing	Billions of *Reais*	Percent of GDP	Percent of total
Federal to states	**70.3**	**1.7**	**28.4**
FPE	40.1	1.2	19.4
Transfers for education	14.5	0.3	5.9
Compensation for zero-rating of exports	5.0	0.1	2.0
Other	2.7	0.1	1.1
Federal to municipalities	**75.7**	**1.8**	**30.5**
FPM	53.1	1.3	21.4
Transfers for education	20.8	0.5	8.4
Other	1.8	0.0	0.7
States to municipalities	**101.7**	**2.5**	**41.1**
ICMS	57.2	1.4	23.1
Vehicles tax (IPVA)	11.4	0.3	4.6
Transfers for education	32.2	0.8	13.0
Other	0.9	0.0	0.4
Total	**247.7**	**6.0**	**100.0**

Source: Data provided by J.R. Afonso.

3.1.1 The FPE

The most important type of federal revenue sharing revenues with the states (the FPE) was created by the 1967 Constitution and expanded by the 1988 one. It presently consists of 21.5 percent of revenues from the federal income tax and selective VAT (IPI). The criteria for distribution among the states were set by a higher-level law (*Lei Complementar* no.*62*) of 1989, following a lengthy negotiation, the result of which was a determination that the combined shares of the states in the less developed North, Northeast, and Center-West regions should amount to 85 percent of the total. Within this constraint, the coefficients for individual states were determined through marginal modifications in the pre-existing criteria that related them to each state's territory (with a weight of 5 percent) and inverse of per capita income (with a weight of 95 percent).

These coefficients (reproduced in Table 3, in descending order) have not been changed since 1989, despite significant changes in the distribution of per capita income across states in the intervening period. These changes have been especially marked for the Center-West region,

which has benefited from the boom in agribusiness during the last decade. In February 2010, the Supreme Court ruled that the fixed character of the *FPE* distribution coefficients runs counter to the constitutional mandate that the distribution of the FPE should reflect evolving equity considerations, and the court has enjoined the federal government to define, and secure Congress' agreement to, new distribution criteria better aligned with the changed regional realities by the end of 2012.

Table 3. Brazil: Current Distribution Coefficients of the FPE

State	Region	% of FPE	State	Region	% of FPE
Bahia	NE	9.3962	Amapá	N	3.4120
Ceara	NE	7.3369	Paraná	S	2.8832
Maranhão	N	7.2182	Goiás	CO	2.8431
Pernambuco	NE	6.9002	Rondônia	N	2.8156
Para	N	6.1120	Amazonas	N	2.7904
Paraíba	NE	4.7889	Roraima	N	2.4807
Minas Gerais	SE	4.4545	RG do Sul	S	2.3548
Tocantins	N	4.3400	Mato Grosso	CO	2.3079
Piauí	NE	4.3214	Rio de Janeiro	SE	1.5277
RG do Norte	NE	4.1779	Espírito Santo	SE	1.5000
Alagoas	NE	4.1601	MG do Sul	CO	1.3320
Sergipe	NE	4.1553	Santa Catarina	S	1.2798
Acre	N	3.4210	São Paulo	SE	1.000
			Distrito Feder.	CO	0.6902

Source: LC no. 62, 1989.
N: North; NE: Northeast; S: South; SE: Southeast; CO: Center-West.

Table 4 below shows that the per capita transfers received by each state from the FPE bear only limited relation with its per capita income or its revenue capacity, as proxied by its per capita revenues before transfers. The six largest recipients of *FPE* transfers (mostly in the sparsely populated northern region) are not among the poorest in terms of either per capita GDP or revenues before the transfers; rather they lie in the middle of the distribution.

Table 4. Comparison of the Distribution of FPE Transfers per Capita with Income per Capita and Spending Capacity of Individual states, 2009
(in *Reais)*

State	GDP p.c.	Basic revenues p.c.	FPE transfers p.c.	Net revenues p.c.
Acre	10,477	989	1,790	2,779
Alagoas	6,623	523	474	997
Amazonas	14,360	1,375	297	1,672
Amapá	11,569	988	1,973	2,962
Bahia	9,326	628	233	861
Ceara	7,668	543	313	856
Distrito Federal	51,142	3,417	99	3,516
Espírito Santo	19,185	1,831	157	1,988
Goiás	14,387	977	175	1,152
Maranhão	6,161	454	408	862
Minas Gerais	14,290	1,086	81	1,167
Mato Grosso do Sul	15,170	1,492	203	1,695
Mato Grosso	18,742	1,434	277	1,711
Para	7,809	676	300	976
Paraíba	7,506	523	457	980
Pernambuco	8,892	651	286	937
Piauí	5,961	543	494	1,037
Paraná	17,756	1,042	98	1,140
Rio de Janeiro	22,396	1,531	35	1,566
Rio Grande do Norte	8,753	833	479	1,312
Rondônia	13,217	1,239	671	1,910
Roraima	13,008	1,030	2,133	3,163
Rio Grande do Sul	19,773	1,186	78	1,264
Santa Catarina	21,076	1,273	76	1,349
Sergipe	9,633	1,007	741	1,748
São Paulo	26,385	1,603	9	1,612
Tocantins	11,072	1,042	1,205	2,247

Source: Author's calculations.
BR: net revenues before transfers from the *FPE*; NR: net revenues after transfers rom the *FPE*; p.c.: per capita.

Recent analyses (Mendes, Miranda and Cosio, 2008; and Rocha, 2010) of the relation between FPE transfers to individual states (net of 21.5 percent of the revenues of the federal income tax and IPI collected in the state) and the Human Development Index (IDH) for the state also indicate that, although the transfers are on the whole relatively progressive (declining as the IDH rises), some of the northern states are disproportionately favored, while some of the poorer northeastern states are penalized.

3.1.2 The FPM

The most important mechanism of sharing of federal revenues with the municipalities (the FPM) has deep roots in the federation's arrangements, and it was significantly increased by the 1988 Constitution. The fund is made up of 23.5 percent of revenues from the income tax and the IPI. The FPM is in turn divided into three parts: 10 percent goes to capital cities, and the rest is divided among other municipalities, with 3.6 percent of total FPM's resources being reserved for large non-capital cities.

The portion reserved for capital cities is distributed among them on the basis of criteria relating to population size and the inverse of per capita income of the respective state. The bulk of the FPM (86.4 percent) is distributed according to coefficients related to population size, and it disproportionally benefits smaller municipalities. In order to mitigate the attendant incentive to a multiplication of small municipalities, it was stipulated that newly-created localities would be funded from transfers to pre-existing ones in the same state. As a result of this stipulation, the distribution of the FPM across states has been frozen since 1989, despite substantial demographic shifts since then. Finally, the 3.6 percent of the FPM reserved for large municipalities (defined as those with population of more than 142,633 inhabitants), which also participate in the distribution of the 86.4 percent, is distributed according to a formula similar to that for capital cities and aims at reducing the abovementioned bias in favor of the smaller municipalities.

That bias reduces the re-distributive potential of the FPM, since there is limited correlation between the size of a municipality and its level of per capita income (or other development indicators). Thus, the distribution criteria for the FPM put at a disadvantage the relatively populous and frequently poor satellite cities (*cidades dormitórios*) surrounding large municipalities and capital cities, thereby reducing their capacity to provide essential public goods

and services to the population. In contrast, the criteria benefit disproportionately small municipalities that grow around large industrial establishments, and that already benefit substantially from own revenues and devolution-based state transfers.

3.1.3 Sharing of the ICMS

The third (and largest) component of revenue sharing arrangements is the transfer (mandated by the 1988 Constitution) of 25 percent of the state revenues from the ICMS to the respective municipalities. Three-quarters of these transfers (net of the share earmarked to the FUNDEB,[14] to be discussed below) are distributed according to a devolution criterion (i.e., proportionally to the value added originating in the municipality), and one quarter is distributed according to other criteria that are determined by each state. These latter criteria vary widely across states; some are informed mainly by equity considerations; others aim at ensuring synergies between municipal and state programs; yet others aim at mitigating externalities (e.g., of an environmental nature).[15]

The predominance of the devolution criterion results in a disproportionate concentration of these transfers on municipalities which harbor large industrial establishments. It also creates an incentive to fragmentation, as localities around such establishments can maximize transfers per capita by setting themselves up as individual municipalities.

A comparison of various indicators (regional location, size and growth of population, degree of urbanization, human development index) in the 200 largest and the 200 smallest recipients of ICMS transfers with the corresponding national averages shows that (not surprisingly) these transfers favor municipalities in the richer South and Southeast regions with smaller populations, higher human development indices, and higher own revenues per capita (Mendes, Miranda and Cosio, 2008). Moreover, the concentration of ICMS transfers is not offset by the distribution of transfers from the FPM.

3.1.4 Sharing of Revenues from Natural Resources

Article 20 of the 1988 Constitution stipulates that natural resources (oil and gas, minerals, and water) belong to the federal government, but revenues from their exploitation are to be shared

[14] Fifteen percent of the ICMS transfer is earmarked for the financing of basic education (through the FUNDEB, discussed below) and allocated among municipalities in relation to the number of students enrolled in the relevant programs.

[15] A detailed analysis of the variety of criteria utilized by the states can be found in *Forum dos Estados Brasileiro* (2006a).

with the states and municipalities. The sharing regimes for each type of resources have undergone significant changes over recent decades,[16] and further changes are in the offing.

The current regime for rents from petroleum exploration[17] (which account for over 85 percent of total revenues from natural resources) and their sharing across government levels was set in 1997, following the end of the *Petrobras* monopoly in 1995. The current exploration regime is one of concessions: companies bid for exploration rights and own the production of the fields awarded to them. In exchange, they pay various types of rents which are shared among the federal, state and local governments. Petroleum rents grew steadily during the last decade, peaking at the equivalent of 0.75 percent of GDP in 2008, before declining somewhat (to 0.53 of GDP) in 2009. They are expected to rise substantially over the next 20 years or so, following the discovery of major offshore reserves (the so-called *pre-sal*) and a shift from concessions to production-sharing arrangements for these new fields (see below for details).

There are currently four types of petroleum rents: i) a signature bonus, which goes entirely to the federal government; ii) area fees, which are related to the size of the oil field being explored, and go the National Petroleum Agency (ANP), a federal institution; iii) royalties levied on a monthly basis as a share of production at a basic rate of 5 percent, or at a higher rate (of up to 10 percent), depending on characteristics of the field; and finally iv) a special rent, which is levied on the more productive and profitable fields. Both royalties and the special rent are shared among the three levels of government.

Table 5 below shows the vertical distribution of revenues from oil exploration, as well as from consumption of oil products.

[16] See Afonso and Gobetti (2008) for a historical overview of the process.

[17] This section only discusses the non-tax component (rents) of petroleum revenues. It should be noted that the taxes paid by the petroleum sector (mainly *Petrobras*) to the federal government (amounting to about 1 percent of GDP) and to the states (1.2 percent) were equivalent in total to about four times the total of petroleum rents in 2009.

Table 5. Vertical Distribution of Oil-Related Revenues
(as percent)

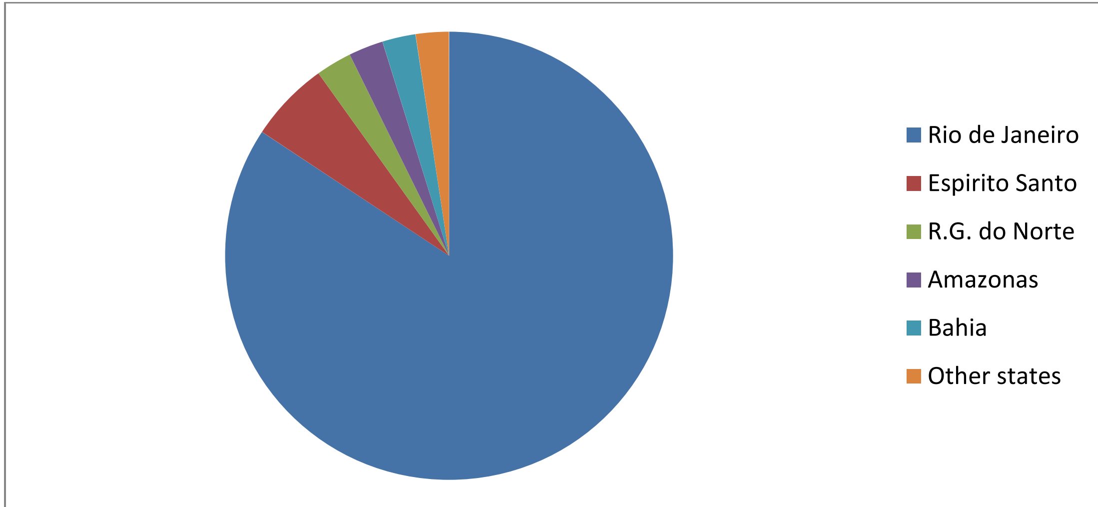
Type of revenue	Federal Government	States	Municipalities
Royalties on offshore oil	30	24.3	45.7
Royalties on onshore oil	12.5	52.5	35
Special rent	50	40	10
Signature bonus and fees	100		
Company income tax	55	21.5	23.5
CSLL[18]	100		
Dividends	100		
IPI	45	29	26
PIS/COFINS	100		
CIDE-*Combustíveis*	76.8	17.4	5.8
ICMS		75	25

Source: Gobetti (2011).

The horizontal distribution coefficients also vary depending on the type of levy and the (onshore or offshore) nature of the field. Onshore revenues benefit mainly the states and municipalities in which the field is located, and offshore revenues mainly the coastal states and municipalities facing (sometimes at a distance of hundreds of miles) the deep-sea field. A part of the revenues goes to the port municipalities from which the oil is shipped. A very small portion of the revenues is distributed on the basis of FPE and FPM criteria. Not surprisingly, the distribution criteria result in a very high concentration of resource revenues in a small number of states and municipalities. Figure 7 below shows that five states account for over 97 percent of the total of states' share of these revenues, with Rio de Janeiro receiving 85 percent of the total.

[18] The CSLL (*Contribuição sobre o lucro liquido*) is a federal contribution that de facto represents a surcharge on the company income tax.

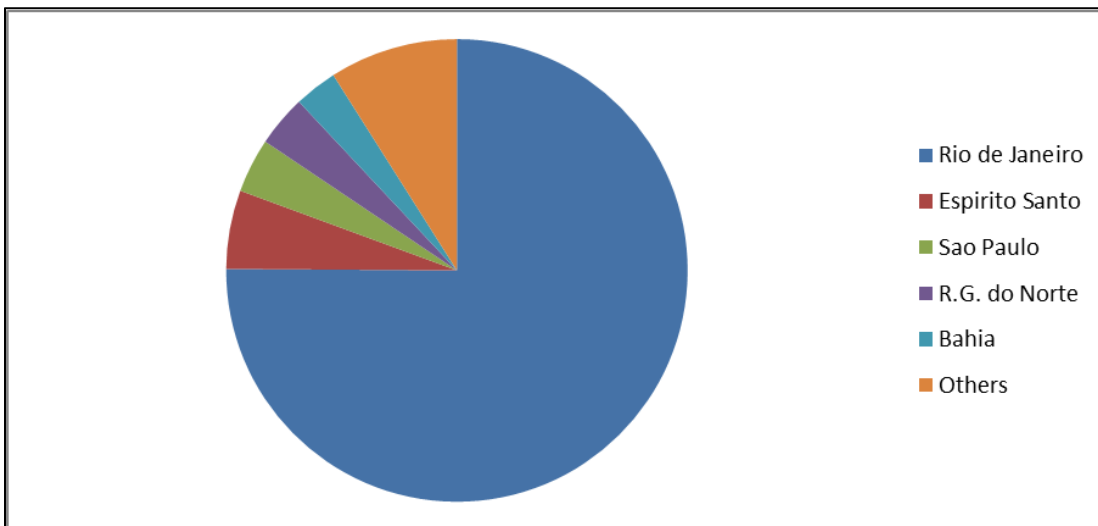
Figure 7. Brazil: Distribution of Royalties/Rents among the States, 2009



Source: Afonso and Castro (2010).

Figure 8 depicts the distribution of municipalities' share of petroleum revenues. It shows that it is only slightly less concentrated than that of the states. Specifically, municipalities in the state of Rio de Janeiro account for about 75 percent of the total, and those in four other states for a further 16 percent. Nearly one quarter of the total is received by one municipality (Campos de Goytacazes in RJ), and the 10 largest recipient municipalities account for 64 percent of the total.

Figure 8. Brazil: Distribution of Royalties/Rents among Municipalities of Different States, 2009



Source: Afonso and Castro (2010)

Some studies (Leal and Serra, 2007; Nazareth, 2005; Conceição et al., 2006; Serra, 2007 and Afonso and Gobetti, 2008) have focused on the efficiency costs of the high concentration of petroleum rents. They found evidence in the largest recipient municipalities of reduced incentives to own revenue mobilization, higher expenditure per capita on payroll (but not on social spending and investment), and generally lower cost effectiveness of spending.

The petroleum rent regime was modified as of 2011 by a law mandating a shift from concessions to production-sharing arrangements (PSA) for the deep sea (*Pre-sal*) and other fields considered to be of strategic national interest.[19] The PSA regime is expected to increase significantly the federal government's take of petroleum resources, compared with the concessions regime.[20] The resources so obtained will be used to constitute a savings-type sovereign wealth fund (the *Fundo Social*, FS), whose investments' returns are to be devoted to education (50 percent, with 80 percent going to basic education), health, environment, and other social programs, to be chosen according to criteria aimed at reducing regional disparities.[21]

The text of the law approved by Congress also included a provision changing the criteria for vertical and horizontal distribution of the share of the royalties going to the states and municipalities. Specifically, it mandated that this share should be equally divided between the two levels of government, and each half should be distributed among all states and all municipalities according to the criteria of the FPE and FPM, respectively. If enacted, this provision would entail substantial losses for the producer states that benefit from the distribution formulas under the current regime. The law envisaged a compensation mechanism for such losses, to be funded by the federal government's share of the oil revenues. This provision of the law was vetoed by President Lula da Silva, and no political consensus has been found yet on an alternative formula.

[19] These fields are estimated to account for about two-thirds of current proven reserves.

[20] Under the PSA, the federal government will receive, in addition to signature bonuses and its share of royalties, the entire value of the oil obtained from a field, after deduction of exploration and production costs and of the profit margin stipulated in the leasing arrangement to go to the enterprise (*Petrobras* or a consortium including a minimum 30 percent participation of the latter) granted the exploration of the field. In the new system, royalties will continue to exist, but the special rent, currently shared with the states and municipalities, will disappear.

[21] The law envisages, however, the possibility for the federal government to devote an unspecified portion of the petroleum rents directly to the above-mentioned spending programs during the early years of the operation of the fund.

3.1.5 Other Types of Revenue-Sharing Arrangements

In addition to the mechanisms described above, there are several other unconditional mechanisms for sharing individual taxes across government levels (e.g., the sharing of the federal tax on rural properties with municipalities; of the federal regulatory tax on gold purchases, *IOF-ouro*, with states and municipalities; and of the state tax on vehicles, IPVA, with municipalities). These sharing arrangements are effected at different rates, and are mostly distributed on the basis of devolution criteria. They contribute to the fragmentation of the intergovernmental transfer system, and make it difficult to assess its overall distributive impact.

3.2 Transfers Earmarked to Specific Spending Functions or Programs

3.2.1 Education

Reflecting the increased priority of basic education in government policy, the resources devoted to this area have risen significantly in recent years. The 1988 Constitution mandated that 25 percent of expenditures should be devoted to education at each level of government, and that 60 percent of such spending should go to basic education (pre-school through high school). Despite this mandate, resources devoted to basic education were largely stagnant in real terms from 1988 to 2003. Since then, they have accelerated significantly as a result of the creation of redistributive intergovernmental transfer arrangements.

The mechanism utilized for this purpose is a fund (*Fundo de Manutenção e Desenvolvimento da Educação Básica*, or FUNDEB*)* that receives 20 percent of state and municipal revenues, supplemented by an additional 10 percent from the federal government. The resources of the FUNDEB are redistributed to local governments to finance basic education on the basis of the size and specific characteristics of the respective student populations, with the objective of reducing disparities in the capacity of different governments to provide education services at a minimum acceptable standard (adjusted for factors such as students' urban or rural of the students and the type (regular or special) of education—regular or special—provided).[22]

Recent analyses of the regional distribution of public expenditures per student on basic education show that the FUNDEB has been effective in reducing, but not eliminating,

[22] An interesting recent innovation in the FUNDEB is the provision that a portion of its resources are reserved to reward schools that record improvements in student performance as measured by a standardized index (*Índice de Desenvolvimento da Educação Básica).* This provision constitutes an initial attempt at increasing sub-national accountability in the use of earmarked federal transfers.

differences in this area, as such expenditures are on average one third lower in the Northeast than in the Southeast. Moreover, the fact that both the federal and the state and municipal contributions to the FUNDEB are linked to revenues makes the fund's resources quite sensitive to cyclical fluctuations.

3.2.2 Health

The provision of public health services in Brazil is carried out within a national health system (*Sistema Único de Saúde, SUS*) in which the federal government sets national guidelines and finances part of the services, either directly or through transfers; the states and the largest municipalities are responsible for the more complex services; and the rest of the municipalities focus on prevention and basic care. The states are required to devote a minimum of 12 percent of their revenues to health spending, and the municipalities a minimum of 15 percent. Since 2000, following a Constitutional Amendment, federal spending on health is required to rise at least in line with GDP.

Federal transfers to the states and municipalities to finance health services have grown rapidly in recent years, to over 60 percent of total federal health spending, substantially outpacing direct payments to hospitals and private health providers, signaling a growing decentralization of health spending responsibilities. These transfers are partly mandatory (the so-called *transferencias fundo a fundo*) and partly discretionary (*convenios*). The mandatory component includes different programs, with amounts determined on the basis of different criteria (size of population, nature of services financed, etc.). One of these programs is directed at compensating sub-national entities that provide the most complex health services for the costs involved in treating patients residing outside those entities. Discretionary transfers are negotiated on a case-by-case basis, to support the provision of specific services in specific communities. Not surprisingly, these types of transfers are more subject to political influence.

Federal transfers account for over one third of total health financing on average, but with significant variance across regions, ranging from about 33 percent in the Southeast to over 45 percent in the Northeast. The system has been moderately successful in reducing differences in per-capita health spending across regions over the last decade or so. It suffers, however, from a lack of clear linkage of the resource transfer with indicators of both need and performance.

3.2.3 Programs Financed by the CIDE-Combustíveis

The *Contribuição de Intervenção no Domínio Econômico (*CIDE-Combustíveis*)*, a federal levy on the importation and sale of fuel products, is shared with the states and municipalities to finance ethanol subsidies, environment projects related to oil and gas exploration, and investment in transport infrastructure. The federal government transfers to the states 29 percent of CIDE revenues, and a quarter of this transfer is subsequently passed on by the states to the municipalities. The horizontal distribution is guided by various criteria (with different weights), some of which approximate a devolution principle (the consumption of fuel products), while others loosely reflect spending needs (extent of road network, size of population). Ten percent is distributed equally among the states.

A calculation of the extent of redistribution effected by the CIDE sharing (measured by the distribution of transfers received by individual states net of the CIDE collected in each of them) indicates that the mechanism is mildly progressive: the poorer states of the North-Northeast tend to be net recipients, and those in the South-Southeast net contributors. However, net transfers amount in total to about only 15 percent of CIDE revenues, suggesting that most of the latter remain in the state where they are collected.

The requirement that 25 percent of the transfers to the state be passed on to municipalities leads to a pulverization of the amounts involved, limiting their effectiveness in financing larger infrastructure projects. Further shortcomings of the mechanism are the fact that it utilizes rudimentary criteria to evaluate need and does not envisage any indicator of performance of the projects financed.

3.2.4 Discretionary Special-Purpose Grants

Discretionary special-purpose grants (the so-called *convenios* and *acordos*) represent a relatively small portion (less than 2 percent) of total intergovernmental transfers in Brazil. They may be matching (complementing funds allocated by lower-level governments to specific spending programs or projects) or non-matching. They often stipulate specific conditions for the use of the funds, but monitoring the fulfillment of such conditions may be limited by the availability of the relevant information. The distribution of these types of grants does not reflect transparent criteria, and it is often influenced by political bargaining during the budget process.

3.3 Transfers of a Compensatory Nature

The main transfers of this type are intended to compensate the states and municipalities for the loss of ICMS revenues due to the zero rating of exports. These are of two types. One, established by the Constitution, relates to exports of industrial goods, and it mandates sharing with the states of 10 percent of the revenues from the federal selective VAT (IPI). The distribution among states is proportional to each state's share in industrial exports. Twenty-five percent of this transfer is shared by the states with their municipalities, following the distribution criteria of the *ICMS* transfers described above.

The second type relates to the exports of primary and semi-manufactured products, which were zero rated by the so-called *Lei Kandir* of 1996. This type of transfer also acquired constitutional status in 2003 with a Constitutional Amendment, but the determination of its amount was left to a complementary law, which has not yet been put forward by the federal government. In the meantime, the latter sets forth in the annual budget both the amount of the transfer and its distribution among the states (a process involving intense negotiations). This type of transfer presents significant flaws in terms of lack of transparency, predictability for recipient governments, and scope for political influence.

3.4 Conclusions

In summary, the intergovernmental transfer system in Brazil appears to be characterized by:

- Relatively low discretionality of transfers, a fact that promotes transparency, predictability, and immunity from continuous political bargaining, but also cyclical volatility and inflexibility of transfers in the face of changing economic, social and demographic trends;
- A multiplication of transfer mechanisms that complicates the assessment of the allocative and distributional effects of the overall system;
- A significant reliance on origin (devolution) criteria in the horizontal distribution of resources, which compounds the already substantial differences in revenue capacities that characterize sub-national own taxes. The current (also devolution-based) sharing of natural resource rents further aggravates these differences, as such resources are concentrated in relatively few states and municipalities; and finally

- The lack of a comprehensive, well-designed equalization transfer system. While existing studies suggest that some of the transfers (notably those through the FUNDEB) have a (more or less significant) progressive redistributive impact, they fall well short of an equalization system.

4. Priorities for Reform of the Sub-national Revenue System

In the light of the analysis in the previous two sections, it would appear that priority objectives for a comprehensive reform of sub-national revenues in Brazil would be the following:

- Rationalizing the ICMS and ISS, with an emphasis on reducing distortions and compliance costs;
- Strengthening the municipal taxation of real estate;
- Streamlining the complex system of inter-governmental transfers;
- Distributing more broadly among SNGs the benefits of revenues from non-renewable resources, especially oil and gas; and
- Transforming the *FPE* and *FPM* into well-designed equalization mechanisms.

Needless to say, since some of these reforms would inevitably involve significant gains and losses for individual states and municipalities, appropriate transition mechanisms to facilitate a gradual adjustment of sub-national finances to the reformed arrangements would be essential for their political viability.

This section discusses possible reform strategies, also in light of relevant international experiences, reform proposals already put forward by public authorities and/or academics, and political economy considerations.

4.1 Reform of Main Sub-national Own Revenues

4.1.1 The ICMS and ISS

Given the abovementioned distortions still engendered by some of the federal contributions levied on turnover, ideally a reform of the ICMS and ISS should provide an opportunity to reform and rationalize the main federal indirect taxes and contributions (IPI, COFINS and PIS) as well. Specifically, a comprehensive reform of the current system of indirect taxation would involve the replacement of all the above mentioned levies by one or more VAT-type taxes

modeled on best international practices, and possibly complemented by a municipal-level retail sales tax.

A first question to be addressed is whether there should be a national VAT, with revenues shared on a devolution basis among the three levels of government (a model advocated by the federal government in the 1990s and re-proposed, with some modifications, by Senator Dornelles in 2009), or a dual VAT, as proposed by, among others, the Ministry of Finance in 2007, and more recently by Fernando Rezende. These three proposals are briefly described in Box 1 below.

Box 1.
Main Alternative Proposals for the Reform of Indirect Taxes

The Dornelles proposal (2009) envisaged a national VAT with a common federal and state base and rate schedule; collection on an origin basis, and redistribution among the states based on each state's share of national consumption; and administration and enforcement by the states. The national VAT would replace the taxes and contributions mentioned in the text above, as well as various other federal contributions, except those that finance the pension system, and the CSLL, which would be merged with the income tax. It would be shared between the federal government and the states in proportion to their current shares in the total revenues of the reformed taxes. Twenty-five percent of the states' share would be passed on to the respective municipalities (based on the same criteria currently used for the sharing of the ICMS).The proposal includes recommendations for consolidating all forms of property (movable and immovable) at the municipal level and the creation of a federal fund to compensate states and municipalities for any losses incurred as a result of the reform

An earlier (2007) proposal by the Ministry of Finance (MoF) envisaged the replacement of the taxes and contributions mentioned in the text (plus the CIDE-*Combustíveis*) with a dual (federal and state) VAT and a municipal retail sales tax (*Imposto sobre vendas ao varejo,* IVV). The dual VAT would have a uniformly defined base (of the consumption type). The federal rate schedule would be defined by law, and the (uniform across the territory) state schedule would be set by the Senate on the basis of proposal by the Committee of State Secretaries of Finance (CONFAZ). Individual states would, however, retain a limited autonomy to set special rates for a few products. The state VAT would be collected on an origin basis, but its revenues would be redistributed on a destination basis (initially through a mechanism like the CVAT, and after the full implementation of electronic invoices, through a clearinghouse system). The IVV would be levied at rates set by individual municipalities within a band of 0.5 to 2.5 percent. Any increase in the tax burden resulting from the proposal would be absorbed by the federal government through a reduction of its VAT rate.

The Rezende proposal (2009) shares most features with that of the MoF, but with an important difference, in that it envisages autonomy for individual states in defining the schedule of VAT rates, possibly within a nationwide band defined by the federal Senate.

Although a national VAT with revenues shared among the three levels of government would have advantages in terms of economies of scale in collection and minimization of compliance costs for taxpayers, it would substantially reduce state fiscal autonomy (which has long historical roots in Brazil) and may diminish the political accountability of state authorities. It would also require substantial shifts of resources from the states' tax administrations to the federal one, with foreseeable resulting bureaucratic resistance.

Therefore, a dual VAT would seem a more promising option. Relevant international experience (see Section 1 above) suggests that it would be desirable for such a tax to have the following characteristics:

- A base uniformly defined across the national territory, limited to domestic consumption of goods and services, i.e., with zero rating of exports, full taxation of imports, and full credit for purchases of capital goods as inputs into production processes; few exemptions; and provision for phasing out existing benefits under the taxes being replaced, over a reasonable transition period;
- A very small number of rates (e.g., a standard rate and a reduced rate for items with large weight in the consumption basket of lower income groups). These rates should be expressed as percentages of the tax base excluding the tax, in line with standard international practice in this respect;
- Rate schedules for the state VATs allowed to vary across states within a relatively narrow band, set by the Senate on recommendation of the CONFAZ. Since the shift to a destination basis would minimize the scope for exporting the burden of the tax to other states, thus eliminating incentives to predatory tax competition, differences in state rates would likely be small and reflect differences in spending needs and other fiscal conditions (e.g., debt service requirements);
- Collection of the state VATs on an origin basis, with the revenue redistributed on a destination basis through a clearinghouse mechanism, now facilitated by the generalized use of electronic invoices (which should be required to have a uniform nationwide format) and the implementation of the uniform taxpayer registry (*Cadastros Sincronizados de Contribuintes*).

Decisions on the rate schedules for a dual VAT should be based on simulations of the impact of alternative options on the overall tax burden and its distribution not only among the three levels of government, but also within each of them (in particular among individual states).[23] To facilitate political acceptance of the reform, it would seem appropriate to aim ex ante at a broad maintenance of both the (already relatively high) overall tax burden and its distribution among levels of government around their current levels. The calculations of losses and gains for individual states and municipalities should take into account any compensating effects from concomitant changes in other taxes, as well as in revenue sharing arrangements and other inter-governmental transfers (discussed below).

A dual VAT should be complemented by federal- and state-level excises on selected goods and services. The federal and state governments should agree on an acceptable sharing of the relevant bases, to avoid vertical competition and the risk of an excessive tax burden on these goods and services. The loss of revenues to the municipalities entailed by the merging of the ISS into the dual VAT could be compensated by the combination of the introduction of a low-rate municipal retail sales tax and a rationalization and strengthening of property taxes (see further below).

The introduction of the dual VAT should be accompanied by steps to harmonize collection and enforcement procedures across the national territory. This would contribute importantly to both making the administration of the tax more effective, and reducing compliance costs.

If a comprehensive reform of the type described above, as desirable as it might be on grounds of efficiency and horizontal equity, were to continue to prove politically unfeasible, a reasonable step in the right direction could be an agreement among the states, ratified by the federal Senate, to make uniform and substantially reduce (to, say, 2 percent) the interstate rates. This would constitute an approximation to the destination principle, with the advantage of maintaining an interest of the exporting state in monitoring interstate transactions.

[23] Simulations of the impact of previous reform proposals have been conducted at various points in time by the Ministry of Finance, the secretariat of the CONFAZ, and other inter-governmental fora (see, e.g., Forum Fiscal dos Estados Brasileiros, 2006b). The databases of such studies, updated to reflect the improved information now available on interstate trade flows, could be utilized for the simulations of new reform options.

A recent simulation[24] of the impact of such a reform on the finances of individual states under different transition arrangement indicates that eight states that are currently net exporters to the rest of the country would lose ICMS revenues as a result of such a reform; the remaining 17 would gain. Among the largest beneficiaries would be some of the poorest states in the Northeast. The simulation assumed a 10-year period for convergence of the current interstate rates to 2 percent. Losses and gains would rise correspondingly over the transition period. It was calculated that, at the end of the period, the total loss of the net exporting states would be equivalent to 1.3-1.6 percent of federal revenues, under relatively conservative assumption of growth of the latter during the same period.

4.1.2 Property Taxes

Especially, but not only, if the ISS were to be merged with a dual VAT, a strengthening of property taxation at the municipal level would be highly desirable, especially given the low efficiency costs and distributional implications of this type of tax (as discussed in Section 1 above). A number of steps could be useful in this respect:

- Shifting the assignment of the rural property tax *(ITR)* from the federal to the municipal level;
- Establishing occupancy (except under formal rental arrangements) rather than legal ownership as the basis for liability under the property tax, to reduce the adverse impact of informality on the collection of the tax;
- Clarifying the legal basis for betterment levies, to avoid the judicial disputes currently plaguing this very underexploited form of property taxation in Brazil;
- Reducing exemptions and special treatments, but allowing a basic deduction for low-value properties, if owner-occupied, to avoid an excessive burden on poor families;
- Investing in the improvement of cadastres using modern technology, and integrating the cadastres with other relevant databases maintained by institutions responsible for the provision of public services;

[24] The simulation was conducted using actual data on interstate trade from the federal treasury record of interstate trade invoices. See Khair (2011) for a detailed discussion of the methodology and results of this simulation.

- Shifting from the legislative to the executive branch the responsibility for periodic property revaluations, to reduce political interference in the process;
- Increasing the frequency of property revaluations (ultimately to an annual basis, as is common in advanced countries) and linking them more closely to development in market values; and
- Increasing the transparency of the valuation process, to strengthen taxpayers' confidence in the process.

Smaller municipalities with limited capacity could consider entering into agreements with nearby larger ones to collect the tax on their behalf, for a performance-related fee.

As part of a comprehensive reform of revenue assignments, consideration could be given to assigning to municipalities the tax on motor vehicles (IPVA) currently assigned to the states.

4.2 Reform of Inter-Governmental Transfers

4.2.1 General Considerations

In light of the above brief review of the current system of intergovernmental transfers in Brazil, and also of relevant international experiences,[25] it would appear that future reform efforts for the system should focus on the following main objectives:

a. Making the system more equitable;
b. Simplifying it and increasing its transparency;
c. Ensuring sufficient flexibility in the distribution formulas to accommodate changes in the relative situations of the sub-national jurisdictions affected; and
d. Reducing the cyclical sensitivity of transfers.

Since (as discussed in the previous section) the different components of the system (i.e., the various revenue-sharing arrangements, and the other types of transfers outlined above) fare differently in relation to equity, simplicity, transparency, flexibility, and cyclical sensitivity, a blueprint for comprehensive reform would need to be designed taking into account the specific characteristics of each type of transfer, and carefully quantifying through detailed simulations the effects of proposed changes on both the vertical and horizontal distribution of resources.

[25] See, among others, Ahmad (1997), Ahmad and Brosio (2006), and Boadway and Shah (2007) for comprehensive reviews of the theory and international practice of intergovernmental transfers.

A comprehensive and simultaneous approach to the reforms would promote their mutual consistency and facilitate trade-offs that might increase their political viability. For example, contentious reforms of the royalties' regime, or other reforms aimed at reducing the weight of devolution criteria in the system, could be facilitated by the introduction of a well-designed and flexible equalization mechanism, and by a transparent use of discretionary transfers to compensate for some of the losses engendered by the reforms.

Although the design of a comprehensive reform blueprint is clearly beyond the scope of this paper, the following general considerations would seem to apply:

- First, to maximize the chances of political acceptability of proposed reforms, a further objective should be the broad maintenance of the vertical distribution of the transfer system as a whole, although not necessarily of its individual components (e.g., the vertical sharing coefficients of the FPE and FPM). A reform package that was seen by any of the three levels of government as likely to significantly alter this distribution to its disadvantage would naturally be opposed by all the members of that level, most likely severely undermining its political viability.
- Second, whether or not current revenue-sharing coefficients among government levels should be altered would depend not only on reforms in other components of the transfer system, but also on progress with the tax reforms recommended above. The substitution of non-shared federal contributions with a VAT (and an also desirable merger of the CSLL with the income tax) would substantially expand the base of these revenue-sharing mechanisms, requiring a corresponding adjustment of the sharing coefficients to preserve the current vertical equilibrium.
- Third, the sharing of petroleum royalties across and within levels of government is likely to be the subject of considerable controversy in the period ahead. The move to channel a substantial share of petroleum rents to a savings-type sovereign fund is in line with theoretical considerations and international best practice in this area (although significant doubts remain on how the new regime will operate in practice, given the large degree of discretionality provided by the 2010 law to the government in its operation).

A distribution of the portion of these revenues assigned to the state and municipal levels more in line with the criteria of a reformed general revenue-sharing regime would be desirable on equity grounds. Its implementation would clearly need to be phased in gradually, however, to allow states and municipalities adversely affected by the change to adjust, without burdening the federal government with heavy compensation costs.

- Fourth, the rationale for specific transfers to compensate states and municipalities for the losses of ICMS revenues linked to exports would seem to disappear in the context of a reformed VAT system, a fact that would argue for their incorporation into the general revenue-sharing regime. The merging of the other minor revenue-sharing mechanisms into the latter would also contribute to the simplification and transparency of the transfer system.
- Fifth, as part of a reform of revenue sharing arrangements, consideration should be given to the introduction of mechanisms to stabilize (or at least smooth) the transfers over the cycle. Possible approaches in this respect include the following: basing the transfers on a moving average of the shared revenues, or on cyclically adjusted values of the same; requiring recipient governments to use a portion of the transfers to constitute so-called rainy day funds; and, eliminating the estimated impact of countercyclical central government revenue measures from the basis of the transfers.
- Sixth, as regards other inter-governmental transfers (both block grants for education and health, and the special-purpose *convenios*), reform efforts should concentrate on improving their cost-effectiveness through more systematic use of appropriate indicators of performance in achieving the stated objectives of the program/project (along the lines of the FUNDEB approach mentioned in Section 3 above).
- Finally, and importantly, a key reform of the current intergovernmental transfer system in Brazil should involve the creation of well-designed equalization mechanism, to replace the current horizontal distribution formulas of the FPE and FPM. The rest of this section focuses on a specific

proposal for reform of the *FPE,* given the urgency of such a reform, in the aftermath of the Supreme Court decision mentioned above.

4.2.2 A Proposed Reform of the Horizontal Distribution Formula for the FPE

Any option for reform of the horizontal distribution formula of the FPE will need to meet the two criteria specified in the Supreme Court's decision, namely that the formula should be equalizing and capable of adjusting dynamically to changing relevant relative conditions of the states.

An equalization system should ideally aim to equalize the capacity of the different states to provide a standard set of goods and services of their responsibility, with average degrees of own-revenue effort and spending efficiency (along the lines of the system used in Australia).[26] Unfortunately, there are currently no conditions in Brazil for the implementation of such a full-fledged equalization model for the following main reasons:

- The principal own-revenue source for the states (the ICMS) presents wide differences not only in the rate structure but also in the definition of the base across states. This makes it very difficult to estimate a representative state tax system (as in the Australian and Canadian equalization systems), and therefore to calculate through this system the revenue-raising potential (the taxing capacity) of each state.
- Alternative methods of estimating the revenue potential (e.g., through the use of regression-based or stochastic frontier analyses[27]) are equally constrained by the lack of reliable standardized data on the state tax bases.
- Reliable information is also missing on the cost structure of the main categories of state expenditures, which would be required to calculate spending needs at an average level of efficiency.

Given these limitations, the best feasible approach to the reform of the system in the short time span mandated by the Supreme Court would appear to be one that would limit equalization

[26] See Ahmad and Searle (2006), Dafflon (2007), Wilson (2007), and Reschovsky (2007) for detailed discussions of methodological issues in the design of equalization transfers

[27] See Fenocchietto and Pessino (2011) for a discussion of stochastic frontier techniques in estimating tax potential.

to the revenue side and use actual basic revenues[28] of each state as a proxy for its revenue capacity on a per capita basis. The closed nature of the FPE implies that reductions in own revenue efforts by individual states would be only partly compensated by increases in transfers from the fund, thus limiting the potential disincentive effect of using actual instead of potential revenues.

Over the longer term, however, it remains highly desirable to create the conditions for a shift to a representative revenue system through a uniform definition of the ICMS base (a reform priority in itself, as discussed above) and the preparation of a database on the states' tax bases (which should be facilitated by the ongoing adoption of electronic invoices). Also, adequate progress in the incipient adoption of modern cost accounting systems by the states would facilitate the introduction of spending needs criteria in the distribution formula of the FPE over the medium term.

An approach to equalization based on basic revenues per capita would meet most of the objectives specified above:

- It would be simple, transparent, and easy to calculate and control, with very little delay given the short time lags involved in the preparation and reporting of state revenues;
- It would increase the correspondence of FPE transfers with individual states' capacity to spend, compared to the current system, thereby enhancing equity; and
- It would facilitate a dynamic and timely response of FPE transfers to changes in socio-economic conditions (e.g., population or per-capita income) and other changes (e.g., in the royalty regime or in other intergovernmental transfers) that would affect the basic revenues per capita of individual states.

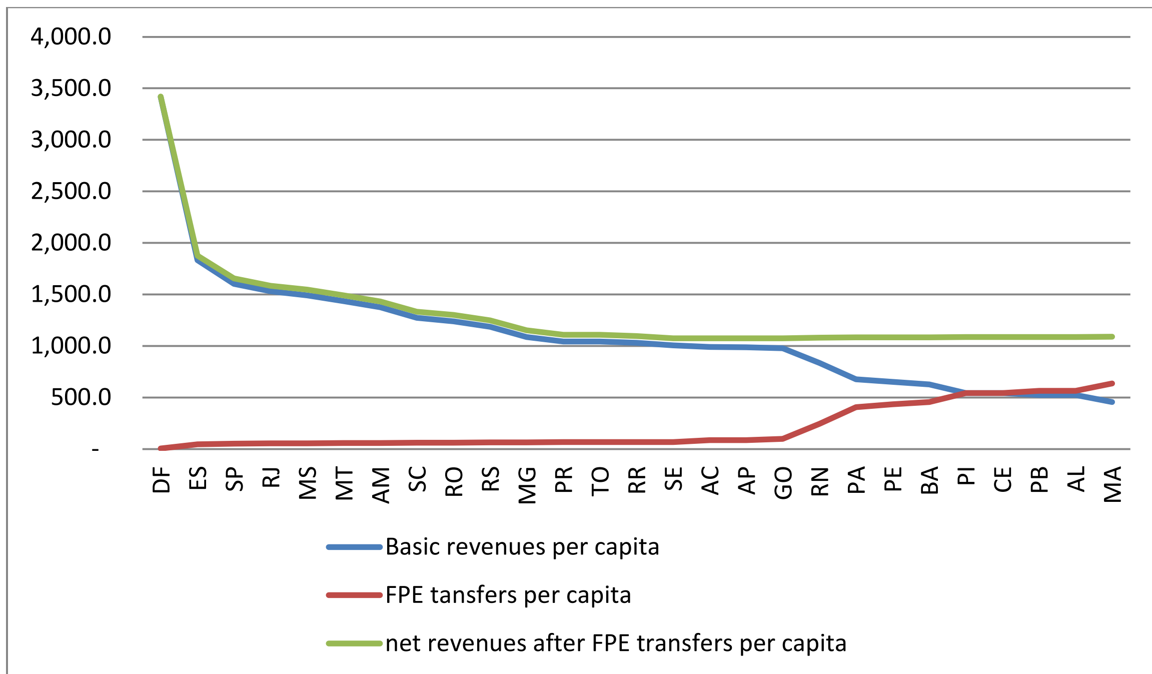
Given the closed nature of the FPE, an important decision in the design of the distribution formula is the choice of the degree of re-distribution desired, specifically the choice of the reference value (RV) for basic revenues per capita, i.e., the value of such revenues above which states would not receive transfers. The higher such a value, the larger would be the number of

[28] Basic revenues are defined here to include all state own revenues (current and capital, but excluding financing items) net of revenues shared with the municipalities, plus all transfers received from the federal government, except those of the FPE itself and those earmarked for specific spending under *acordos* or *convenios*.

states (in the limit all) receiving transfers, but the lower the amounts received by each, and accordingly the lower the degree of redistribution of the system.

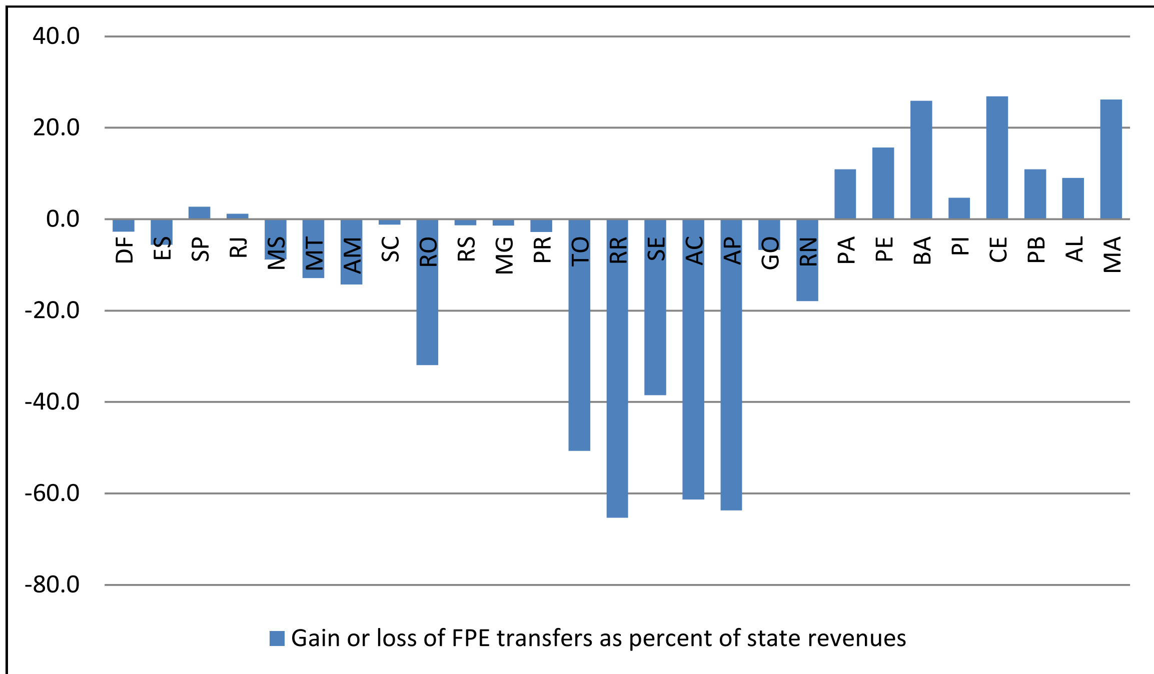
The choice of the relative weights to be given to the redistribution versus the coverage criteria is clearly a political one. An acceptable compromise between the two objectives could be achieved by distributing two-thirds of the FPE according to the maximum redistribution criterion and the other third according to the maximum coverage criterion. Figure 9 below shows the distribution by state of basic revenues, FPE transfers, and net revenues after the FPE transfers (all on a per capita basis) under this distribution formula. Figure 10 shows the gains and losses in total FPE transfers by state, compared with the current situation.[29]

Figure 9. Impact of Recommended Reform on State Revenues per Capita
(in *Reais*)



[29] All calculations were made on the basis of 2009 data.

Figure 10. Gains or Losses in FPE Transfers



A comparison of this reform option with the status quo (Table 5 above) suggests that the proposed approach would indeed be more redistributive than the present one since:

- The gap between the highest and the lowest net revenues per capita after FPE transfers would be substantially reduced; and
- The largest gainers in terms of net revenues would be the poorest states in the Northeast and North.

Of course, given the closed nature of the FPE, any reform of its horizontal distribution formula is essentially a zero-sum game, i.e., gains by some of the states would have to be matched by losses of the others. This fact has been largely responsible for the stalemate that resulted in the freezing of the distribution coefficients since 1989. To be politically viable, any reform proposal would need to provide adequate time to the adversely affected states to adjust their finances to the loss. This can be done with a number of alternative transition mechanisms. One approach would involve distributing the losses and gains over a number of years. Another, possibly politically more palatable, approach would be to ensure to each state a floor equivalent to the nominal value of the transfers in the year preceding the adoption of the new distribution formula and to apply the latter only to the increases in the resources of the FPE from that year.

Over time, the weight of the floor would gradually decline, and that of the component distributed according to the new formula would increase correspondingly.[30]

5. Conclusions

There is a wide consensus in the literature, as well as among economic agents in Brazil, that the current tax system constitutes a significant impediment to achievement by the country of a sustained higher growth rate. Not only is the overall tax burden relatively high in comparison with those prevailing in most of Brazil's competitors and with the level and quality of public goods and services received by the population, but also the system is fraught, at all levels of government, with important distortions, horizontal inequities and very high compliance costs. Since macroeconomic imperatives and pressing spending needs (especially in investment) make a significant reduction of the overall tax burden unfeasible in the foreseeable future, it is all the more important to implement broadly revenue-neutral reforms aimed at simplifying the tax system, while making it more efficiency and equity-friendly.

Despite widespread recognition of these weaknesses, reform efforts to date have been stymied by the resistance of governments and other economic agents that would be adversely affected by such reforms. However, as the costs of the distortions, especially in terms of competitiveness and inter-governmental conflicts, are growing steadily higher and more evident, there can be some hope that sufficient political will may be found to overcome such resistance in the near future. The Supreme Court, with recent rulings, is increasingly pressuring other branches of government to address some of the most glaring distortions.

This paper has focused in particular on reform needs in the state and municipal revenue systems. This focus is justified by the relative importance of own sub-national revenues in Brazil, compared with most other countries, especially in Latin America; by the significance of the weaknesses besetting both own and shared revenues; by the controversies currently surrounding the sharing of oil revenues; and by the fact that the above mentioned Supreme Court rulings mostly relate to state revenues.

[30] Assuming, for example, an annual nominal growth rate of the FPE of 7 percent per year (below historical averages), the size of the fund would double in 10 years, meaning that only half of it would be distributed on the basis of the current coefficients.

Against the background of a summary critical review of both own revenues and inter-governmental transfers, the paper has outlined a comprehensive desirable reform agenda aimed at:

- Rationalizing the ICMS and ISS, with a view to in particular reducing distortions and compliance costs;
- Strengthening the municipal taxation of real estate;
- Streamlining the complex system of inter-governmental transfers;
- Distributing more broadly among SNGs the benefits of revenues from non-renewable resources, especially oil and gas; and
- Transforming the FPE and FPM into mechanisms aimed at equalizing individual states and municipalities' capacity to spend (as proxied by their revenues after transfers).

Specifically on the first point, the paper has advocated the consolidation of most current federal and sub-national indirect taxes and contributions into a dual (federal and state) VAT, with a common base uniformly defined across the national territory. States would maintain limited flexibility in setting their rate schedule, within a band set by the federal Senate. The state VAT would be collected at the origin, but its revenues would be redistributed on a destination basis. This would eliminate the current scope for predatory tax competition among the states. A merging of the ISS into the dual VAT would facilitate the administration of the tax and bring into the base of the VAT the most dynamic component of GDP. Municipalities could be compensated for the loss of this tax handle with increased revenue sharing with the states and/or combinations of a transfer of the state tax on vehicles and creation of a low-rate retail sales tax.

An initial step in the direction of the recommended reform could be agreement among the states on a progressive reduction to a low level (say, 2 percent) of the rates on interstate transactions. Simulations of such an approach show that the losses suffered by states that are net exporters are in total manageable and could perhaps be compensated in part by the federal government. Also, some of the states that would benefit most from such a change are among those that would be losing the most from a more equitable distribution of the oil revenues, thus suggesting some scope for compensation among the states themselves.

A reform of the *FPE* along the lines discussed in Section 4 above would have several advantages, as well as being in line with requirements set out by the Supreme Court:

- It would be simple, transparent, and easy to calculate and control, with very little delay, given the short time lags involved in the preparation and reporting of state revenues;
- It would increase the correspondence of FPE transfers with individual states' capacity to spend, compared to the current system, thereby enhancing equity; and
- It would facilitate a dynamic and timely response of FPE transfers to changes in socio-economic conditions (e.g., population or per-capita income) and other changes (e.g., in the royalty regime or in other inter-governmental transfers) that would affect the revenues per capita of individual states, thus enhancing the scope for compensation within the state level itself for losses entailed by the proposed reform of the ICMS.

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