

# Metropolitan Financing in Brazil

## Current Trends and Lessons from International Experience

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## **Abstract\***

This paper argues that the need for metropolitan-wide government is higher the larger the unrealized benefits from economies of scale and externalities. It contends that there is no trade-off between the advantages of small fragmented local governments versus those of large, consolidated government units. The latter are superior for public services that exhibit large economies of scale and yield considerable externalities, while smaller types of government can be optimal for the delivery of most other public goods. From this perspective, the most desirable model of metropolitan governance is a two-tier system embedding those two types of governments, preferably both elected and accountable. Large economic and fiscal disparities within metropolitan areas inhibit cooperation. An important step is to free metropolitan authorities of redistribution concerns and for this purpose rely instead on a nationwide equalization grant system. In addition, in light of the best international practice we offer ideas that would help enhance the effectiveness of metropolitan finance in Brazil, including rethinking expenditure and revenue assignments for the metro-wide areas, introducing federal and state fiscal transfers that accrue directly to metropolitan funds, and allowing broader access to prudential borrowing.

JEL Codes: H70, H71, H77

Keywords: expenditure and revenue assignments, infrastructure financing, local finance, metropolitan areas

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## 1. Introduction

Increasingly in the global “knowledge-based” economy, competition is based on the ability to innovate; at the same time, most innovation takes place in metropolitan areas (MAs)<sup>1</sup> (Bird and Slack, 2004). Metropolitan areas are perceived to be the true national engines of economic growth all over the world, including in Latin American and Caribbean (LAC) countries (Slack and Chattopadhyay, 2013; Gómez-Álvarez et al., 2017). Growth is generated by economies of scale that arise in MAs, facilitating the exchange of information, the introduction of new technologies, and the specialization of skills. All of that is facilitated by high levels of transportation infrastructure that complement private sector activities and investments.<sup>2</sup> However, countries differ very significantly in their ability to provide the institutional frameworks and flexibility that allow their MAs to supply the right level of public services, and therefore they differ considerably in their ability to capture opportunities for economic growth and prosperity.

International practice provides all kinds of experiences in MAs’ governance and financing, successful and unsuccessful, from which we can extract useful lessons. At this time, Brazil’s authorities require policy guidance on how to structure efficient and effective governance models for the Metropolitan Regions (MRs) in the country. These needs have become more urgent with the enactment of the Metropolitan Statute in January of 2015. A particularly critical issue, and a burning question that authorities at both the federal and subnational levels demand answers to, is how to fund MRs and projects and how municipalities belonging to the MRs can effectively share the costs of metropolitan infrastructure and service provision. Failure to provide the right infrastructure and other services has put Brazilian MRs in a competitive disadvantage with MAs of other countries (IDB, 2015).

The main objective of this paper is to provide guidance on potential avenues for the financing of MRs in Brazil, based on public finance principles and best international practices. However, as we will learn early in this paper, the issue of metropolitan financing is closely intertwined with two other related issues: the governance model of the MA and the question of expenditure assignments within those MAs. The need for financing arises directly from the expenditures needs associated with particular assignments of expenditure responsibilities. Nevertheless, how expenditure responsibilities are assigned and therefore the type of financing that is needed in turn depend on the specific governance model that takes hold in each MA.

In this paper, we argue that the strong case for a metropolitan-wide government needs to rest on the presence of certain public goods (such as mass transportation and mobility, brownfield disposal, and urban land zoning, among others), which exhibit large economies of scale and/or large externalities. The need for such a metropolitan-wide government is higher the larger the unrealized benefits from economies of scale and externalities. We contend that there is no trade-off between the advantages of small fragmented local governments versus those of large, consolidated government units. There should be little doubt that the latter type is a superior method of delivery for those public services that exhibit large economies of scale and yield considerable externalities, while smaller types of government can be optimal for the delivery of most other public goods that exhibit neither large economics of scale nor significant externalities.

Looking at the issues from this perspective, we suggest that the most desirable model of metropolitan governance would be a two-tier system where the first-tier government would be

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<sup>1</sup> Metropolitan areas have been defined as the built-up space covered by large cities, including their suburban areas with high population density and typically crossing various local government administrative boundaries (Bahl, Linn, and Wetzel, 2013; United Nations, 2008).

<sup>2</sup> See, for example, Glaeser and Gottlieb (2009) and Yusuf (2013).

charged with the provision of services with large externalities while the second-tier government, following the principle of subsidiarity, would be charged with all other local services, including education, health, and so on, for which there would be more accountability and representation. Even though the two-tier model may be criticized as being less transparent and more confusing to taxpayers, it still is the model that makes most sense intellectually, but only as long as governments are elected and remain accountable.

We also show that there are large economic and fiscal disparities within MRs in Brazil and that these uneven contexts, along with political economy factors, inhibit cooperation between and across state and municipal governments. While there are clearly some examples of governance structures, such as inter-municipal consortia, that have rendered relatively good results, in general governance failures have led to poor performance of MRs in the delivery of essential public services. We suggest that a key step in moving forward is to reduce or even eliminate those disparities, and that the most appropriate way to do so is reforming the intergovernmental fiscal transfers, especially the revenue sharing system with municipalities (Municipal Participation Fund or FPM for its initials in Portuguese), seeking to establish a nationwide equalization grant system with the objective of equalizing differences in fiscal capacity and expenditure needs of some of the municipalities in the MRs. We cannot emphasize enough the need to free MRs from this responsibility over equity concerns within their boundaries that put an excessive burden on a governance model/structure that is already weak.

In addition, in light of the best international practice we offer ideas that would help enhance the effectiveness of metropolitan finance in Brazil. Among them, we suggest rethinking expenditure assignment and clarifying functions and responsibilities for the metro-wide area, (distinguishing them particularly from state and local governments), focusing on services with opportunities for achieving scale economies and addressing externalities like transportation, land use, and sanitation. On the revenue side, we identify several viable options to provide Metropolitan Funds with greater revenue sufficiency based on both dedicated taxes—such as a personal income tax piggyback, surcharges on municipal ISS (Imposto Sobre Serviços de Qualquer Natureza) or state ICMS (Imposto sobre Circulação de Mercadorias e Serviços), and/or excise taxes on public utility services—and federal and state fiscal transfers that would accrue directly to MRs and Metropolitan Funds. Alternative revenue sources for more effective infrastructure finance would include broader access to prudential borrowing, for instance creating incentives in federal credit lines, and engaging in PPPs. All of these strategies would require strengthening finance and management capacities at the metro and municipal levels.

The remainder of this paper is organized as follows. Next, we explain the rationale and principles for establishing metropolitan governments from a governance and public finance perspective. In section three, we take a close look at the current state of metropolitan governance and financing in Brazil. In section four, we review in depth the international practices in MA financing, and how they depend on the issues of the model of governance adopted and the assignments of functional responsibilities. Finally, in section five we extract the most valuable lessons from the international experience and explore how they can be put into use in the context of Brazil's existing institutional and political economy circumstances.

## **2. Conceptual Framework**

Why do we need metropolitan governments? Typically, there are three arguments that are used to signify the need for a metropolitan-wide government: (i) the presence of economies of scale in the delivery of local public services; (ii) the existence of externalities in the provision of public services; and (iii) the need for a more equal or equitable provision of services across the local

governments in the MA. We need to look at those three sets of arguments closely to better understand why metropolitan governments—and in particular what kind—may be needed.

Let us start with the equity argument. It is generally the case that MAs show great disparities across local governments in the availability and quality of public services. These inequities are important and arriving at a more balanced distribution of public services is a worthwhile and important objective.

However, largely this problem of inequities in the distribution of local services is separable from that of inadequate provision of public services that exhibit large economies of scales and externalities—especially the latter. That is, in theory, we could clearly have an MA with fragmented governance—many municipalities—but with those municipalities having similar tax bases and therefore availability of resources and provision of services. Nonetheless, in that MA there would still be a problem with failure to provide adequate levels of public services with large externalities.

In addition, even though a more balanced or equal distribution across jurisdictions is generally desirable, we do not need a metropolitan-wide government to address this kind of issue. Most intergovernmental finance systems operating at the national level are designed to include a system of equalization transfers with the objective of providing more resources to those units with lower fiscal capacity—ability to raise own revenues given their tax bases—and higher expenditure needs due to the higher presence of poor households and/or higher costs of delivering services, among others (Boex and Martínez-Vázquez, 2007; Boadway, 2015; for Brazil specifically see Prado, 2011; Haully, 2012; and Ter-Minassian, 2013). If such a program of equalization grants is effective, then there is no need for a metropolitan-wide government to take over this equalization function. The reasoning that metropolitan-wide governments should take care of existing disparities in service provisions puts an excessive fiscal burden on the richer jurisdictions in the area, as opposed to this being a problem to be addressed by national policy and financed by the entire country.<sup>3</sup>

Parceling out redistribution concerns and targets in the creation and functioning of metropolitan-wide governments would have the advantage of putting the focus on the essential issues: the optimal supply of public services with large economies of scale and externalities with benefits spilling over the boundaries of other jurisdictions. This problem cannot be properly addressed without some form of metropolitan-wide governance. If fragmented local governments provide those public goods, the supply of these public services would be inefficient.<sup>4</sup> It is important to note that, in practice, most local public goods do not exhibit externalities beyond the local geographical boundaries, nor do they exhibit economies of scale beyond a relatively modest size of 10,000 inhabitants (Gomez-Reino and Martinez-Vázquez, 2013).

Although the literature points to the trade-off between efficiency, accountability, and responsiveness, on the one hand, and economies of scale, externalities, and services coordination, on the other, we believe this should not constitute a choice for an appropriate

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<sup>3</sup> Beyond fiscal disparities, other social issues associated with metropolitan areas loom large, including the presence of slums, housing needs, lack of urban land regularization, underemployment, and urban violence (IDB, 2015). Many of these issues are also likely to require metropolitan-wide coordination.

<sup>4</sup> The existence of these externalities is the rationale for metropolitan governance given in the Statute of the Metropolis (Art. 2-II: Public functions of common interest). Similarly, Complementary Law 14 of 1973 defines as public functions of common interest: (i) integrated planning of economic and social development; (ii) basic sanitation, water supply, and sewers; (iii) metropolitan land use; (iv) transportation and road system; (v) production and distribution of piped fuel gas; and (vi) exploitation of water resources and environmental pollution control (cited in the IDB Technical Note).

government structure of a MA.<sup>5</sup> Rather, it is the nature of the public goods and the environment where they should be supplied—in the context of large agglomerations of population and economic activity—that conditions the appropriateness of a metropolitan-wide government. This appropriateness refers not only to economies of scale and addressing externalities, but also the efficiency of provision, and it is not at all contradictory with accountability and responsiveness. Clearly, it may be perceived that accountability and responsiveness may be diminished when the size of government is increased, but on the other hand there is no arguing that even larger government units like regional/provincial/state governments can be both accountable and responsive.

The rationale here is that of the “correspondence principle” in expenditure assignments. Public goods with a national benefit area should appropriately be delivered by central administrations, and so the logic goes for those with a regional or provincial scope. Applying the same logic, there is really no trade-off either in the case of local public goods that exhibit large economies of scale and externalities and that need to be provided in metropolitan agglomerations.

Thus, a two-tier model with metro-wide governments for those public goods exhibiting large economies of scale and externalities and lower fragmented governments providing the rest of the public goods could be the most attractive model because it tends to capture all the advantages and none of the disadvantages. The single-government case for the entire MA—like in the case of Cape Town—not only tends to be the exception in international practice, but in theory is also less desirable because many local public goods can be more efficiently provided by smaller local governments in the second tier. The fact that in international experience we observe all kinds of frameworks, and as mentioned above most frequently we observe fragmented models of metropolitan governance, does not mean that the choice of this setup can be justified as a choice in a trade-off frontier. It is just that given the institutional and legal constraints, some countries get it right and many others have to muddle through with less than optimal governance organizations.

The past literature often has praised the virtues of the fragmented model or, better, has in some instances tried to see virtues in the fragmented model, mainly because it was looking for a justification for the persistence of this fragmented model. The always-mentioned advantage of the fragmented model is the increased representation and closeness to the people it serves. Yet, even if it is correct that smaller governments can offer that advantage, closeness and representation are not valid reasons to justify the lack of a metropolitan-wide government to provide public goods with a natural benefit area that goes well beyond the boundaries of the fragmented local governments located in the MA.

Instead, the common dominance and persistence over time of the fragmented model of metropolitan governance in most developed and developing countries, including Brazil, can be explained by historical and political economy reasons: the refusal of existing local governments created a long time ago to disappear or even to give up some of their functions—like mass transportation—which are presently proving inefficient. The expansion of MAs in most cases has been the result of organic growth in particular geographical areas anchored in historical cities surrounded by many other smaller local governments. As population and economic activity expanded over time, the interlinks within a largely unified economic area outgrew the basic fragmented governmental architecture of those original local governments. Thus, the appearance on the scene of public services with technologies exhibiting considerable economies of scale and externalities generally occurred much later than the institution of

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<sup>5</sup> See, for example, Slack and Chattopadhyay (2013) and Bahl, Linn, and Wetzel (2013).



fragmented local governance arrangements in the form of many smaller municipalities surrounding a capital city. One after another, those smaller local governments became part of an increasingly economically integrated MA. Invariably, these smaller municipalities sternly refused to be absorbed or amalgamated into a larger jurisdiction.

As a result, most MAs, with few exceptions, have experienced governance failure, with their multiple local government units being unable to strategically coordinate the building and maintenance of basic infrastructure and other public services with large geographical externalities—such as public transportation or water and sewage services. Thus, in many MAs the public sector has been left behind the dynamism of the private sector and has continued to work as a drag on the economic potential and competitiveness of MAs.

This failure cuts across the three basic dimensions of metropolitan governance: the coordination of urban planning, the delivery of public services, and the financing of those services. The lack of coordination of urban planning leads to inefficient patterns of land use and increases the unitary costs of public services and infrastructure provision, undermines environmental goals, and facilitates inequality in service provision in different areas and the creation of slums, among other problematic issues. Most local governments within the MA invest too little in the public goods and services that have positive externalities—large and small—on the other local governments. The result is the under-provision of many necessary and vital public services. The financing of metropolitan-wide infrastructure is either not present or else becomes complex and limited due to the difficulties of coordinating the local governments in the MA (IDB, 2015).

Fundamentally, what type of metropolitan-wide government is feasible will depend on the existing institutional and legal frameworks and on how easily they can be changed. But, in general, there are three institutional design requirements that need to be met for successful and supportive public finance architecture at the metropolitan level. First, an adequate governance system needs to be in place. This requirement can be met either by the presence of a metropolitan-wide government unit—preferably in the form of a two-tier governance model or alternatively, and less desirable, an association coordinating all local governments in the MA with authority to make budget decisions in terms of spending and financing. Because efficient service delivery requires accountability, ideally the metropolitan-wide government would be democratically elected. If this type of institutional framework is not feasible, then we may have to live with an association framework or even special solutions such as enterprises or special service districts, which may end up being much less accountable.

Second, an assignment of functional expenditure responsibilities to that metropolitan authority that includes infrastructure and other public services that have a metropolitan-wide area of service, including those that could be partially but inefficiently provided by the fragmented local government units, such as transport. And third, the financing means assigned to that metropolitan authority—either from own tax revenue sources, intergovernmental transfers, or borrowing—to pay for that infrastructure and those other public services. Ideally, however, because the efficient provision of services requires that local governments are significantly self-financed, the metropolitan-wide government needs to be assigned taxes with a metropolitan-wide base and which can be justified on the basis of the benefit principle.

Thus, it is important to clearly see the logical sequence for justifying a metropolitan-wide government with its own expenditure and revenue assignments. It is often the case that analyses of metropolitan issues single out the problems surrounding one of the requirements for effective public finance architecture at the metropolitan level. For example, the lack of adequate financing instruments often comes to the forefront as being at the root source of the problem. However, any solution to this problem would always require that an adequate governance

structure is in place and that the corresponding spending authority exists. In short, all three legs of the financial architecture at the metropolitan level need to be in place.

### 3. Current Trends and Main Issues with Metropolitan Governance and Financing in Brazil<sup>6</sup>

The objective of this section is to provide a diagnostic of the current state of metropolitan finance in Brazil based on analyses of revenues, expenditures, transfers, and debt indicators from 2011 to 2015, the last year available. The sample includes the main 25 MR with a state capital, including the Federal District, and 391 metropolitan non-core cities that belong to those MR.<sup>7</sup>

State	Region	Municipality	Metropolitan Region
Rondônia	N	Porto Velho	RM Porto Velho
Amazonas	N	Manaus	RM Manaus
Roraima	N	Boa Vista	RM da Capital
Pará	N	Belém	RM Belém
Amapá	N	Macapá	RM Macapá
Tocantins	N	Palmas	RM Palmas
Maranhão	NE	São Luís	RM Grande São Luís
Piauí	NE	Teresina	RIDE TERESINA
Ceará	NE	Fortaleza	RM Fortaleza
Rio Grande do Norte	NE	Natal	RM Natal
Paraíba	NE	João Pessoa	RM João Pessoa
Pernambuco	NE	Recife	RM Recife
Alagoas	NE	Maceió	RM Maceió
Sergipe	NE	Aracaju	RM Aracaju
Bahia	NE	Salvador	RM Salvador
Minas Gerais	SE	Belo Horizonte	RM Belo Horizonte
Espírito Santo	SE	Vitória	RM Grande Vitória
Rio de Janeiro	SE	Rio de Janeiro	RM Rio de Janeiro
São Paulo	SE	São Paulo	RM São Paulo
Paraná	S	Curitiba	RM Curitiba

<sup>6</sup> This section is based on the information provided in several recent papers on metropolitan organization and finances in Brazil, including Marguti, Costa, and Favarão (2018), World Bank (2015), Arretche (2014), Wetzel (2013), and Rezende and Garson (2006).

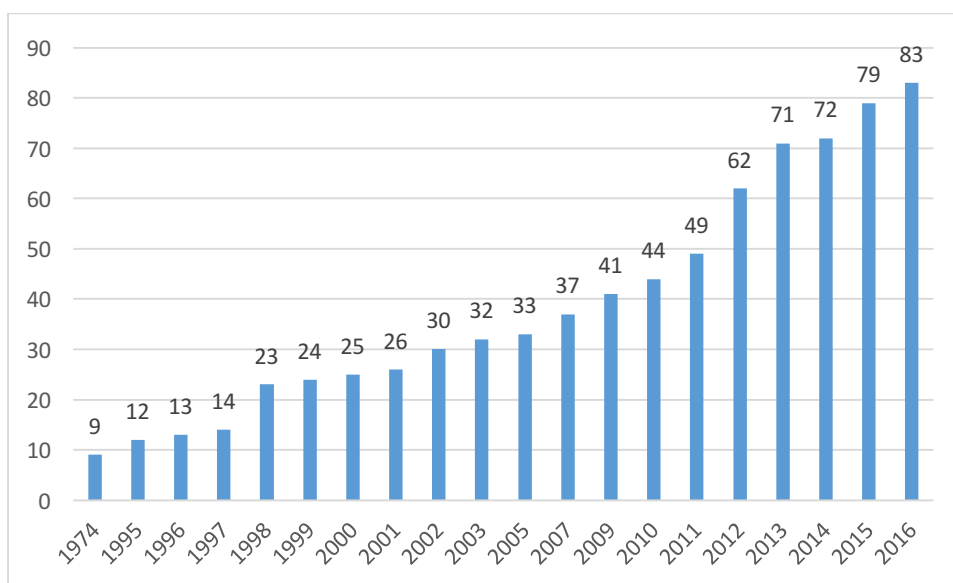
<sup>7</sup> As described below, MRs in Brazil have multiplied in recent years and most of the newly created MRs are not based on studies that demonstrate the need for a metropolitan structure to effectively address the many interlinks between municipalities around a core city. Instead, the speed of the MRs proliferation and the change in their composition is mainly due to political reasons and the expectation from local governments of getting special treatment from other levels of government (i.e., state financing). Thus, in this paper we focus on MRs that have a metropolitan logic; those are more easily identified using as a criterion having a state capital with substantial and direct regional influence, plus the Federal District (Distrito Federal), as measured by IBGE (2007).

Santa Catarina	S	Florianópolis	RM Florianópolis
Rio Grande do Sul	S	Porto Alegre	RM Porto Alegre
Mato Grosso	CO	Cuiabá	RM Vale do Rio Cuiabá
Goiás	CO	Goiânia	RM Goiânia
Distrito Federal	CO	Brasília	RIDE DF

### 3.1 Current State of MRs in Brazil

Currently, there are 83 MRs in Brazil, including three Integrated Development Regions (Regiões Integradas de Desenvolvimento or RIDEs)<sup>8</sup> (Marguti, Costa, and Favarão, 2018). As shown in Figure 1, there has been remarkable growth in the number of MRs since 2000, a period during which they tripled. The municipalities that make up the MRs now represent about 21 percent of all local governments and host approximately 55 percent of the country's population (see Table 1 for a quick general characterization of MRs). As in many other MAs in developed and developing countries, MRs in Brazil exhibit high levels of governmental fragmentation, with many municipalities coexisting side by side and often with the presence of a larger core city that also shares the status of another local government. The central cities are much more urbanized and agglomerate a higher proportion of commercial and financial services than suburban municipalities in the MRs or any other non-metropolitan municipality in the country. Likewise, human development indicators are higher in metro core municipalities than in the periphery and the rest of the municipalities in the country.

**Figure 1. Number of Metropolitan Regions, Brazil, 1974–2016**



Source: Adapted from Marguti, Costa, and Favarão (2018).

<sup>8</sup> Integrated Development Regions include metropolitan municipalities from different states.

**Table 1. Metropolitan Regions, Brazil, 2010–15**

	MRs			
	Total	Core Cities	Peripheral Cities	Non-MRs Other Cities
Number of municipalities	5,109	25	391	4,693
Population 2000	162,224,103	39,545,392	29,185,807	93,492,904
Population 2010	182,105,803	44,343,210	33,936,401	103,826,192
Population 2015	195,225,450	47,459,952	36,702,046	111,063,452
Urbanization Rate 2000	59.4	97.8	72.9	58.0
Urbanization Rate 2010	64.4	98.3	76.5	63.2
Demographic Density 2010	115.1	2737.3	706.3	51.8
% Population 0–4 years 2010	7.3	7.1	7.8	7.3
% Population 5–9 years 2010	8.2	7.4	8.5	8.2
% Population 10–14 years 2010	9.5	8.4	9.8	9.5
% Population 15–64 years 2010	66.5	70.8	67.4	66.4
% Population over 65 2010	8.5	6.3	6.5	8.7
GDP 2010 (current prices)	3,761,751,267	1,315,414,794	735,719,733	1,710,616,740
GDP 2015 (current prices)	5,824,612,244	1,953,355,962	1,119,840,662	2,751,415,620
GDP per capita 2010	12,874	24,418	16,788	12,486
GDP per capita 2015	19,937	33,529	24,382	19,494
Gross Value Added 2010: Agro/Total GVA%	21.1	0.3	10.4	22.1
Gross Value Added 2010: Industry /Total GVA%	14.9	20.9	25.5	14.0
Gross Value Added 2010: Services Other*/Total GVA%	30.7	60.4	36.1	30.1
Gross Value Added 2010: Services of administration, defense, public education and health, and social security/Total GVA%	33.2	18.4	28.0	33.8
Gross Value Added 2015: Agro/Total GVA%	19.5	0.4	10.4	20.4
Gross Value Added 2015: Industry /Total GVA%	13.8	17.7	21.6	13.1
Gross Value Added 2015: Services Other*/Total GVA%	33.8	62.8	40.2	33.1
Gross Value Added 2015: Services of administration, defense, public education and health, and social security/Total GVA%	32.9	19.1	27.9	33.4
Infant Mortality 2010	19.0	14.7	16.8	19.2
Municipal Human Development Index 2010	0.7	0.8	0.7	0.7

Source: Authors' estimates based on IBGE-SIDRA (2018) and PNUD (2013).

MRs in Brazil offer a general weak performance level (IDB, 2015). There is evidence that MRs are behind in the provision of basic infrastructure, as investments made in these areas since 2000 have been insufficient to deal adequately with the deficit in infrastructure—and that deficit has not been reduced even in the main MRs. For example, the city of São Paulo itself has maintained capital spending levels at 8–10 percent of current expenditures, which is estimated to be well below its investment needs (Wetzel, 2013). Also, although several social and economic conditions in the 10 main MRs have improved significantly in the past two decades, vulnerabilities associated with infrastructure deficiencies have improved very little and considerable restrictions in access to sanitation and mobility services still remain (Marguti, Costa, and Favarão, 2018).

On the institutional front, as of 2017, effective metropolitan governance has been rather weak: of all MRs in the country, only 25 percent of them are considered to be actually institutionalized with strong technical justifications for their creation, and only 57 percent have a clear definition of their specific functions in the legislation. Even though 80 percent of the MRs have a management office, only 40 percent have deliberative councils; 30 percent of the MRs have legally established funds but most of them were never provided with resources; and only one third have developed metropolitan plans (Marguti, Costa, and Favarão, 2018; IDB, 2015). The better-structured MRs are São Paulo, Belo Horizonte, Recife, Porto Alegre, Curitiba, and Goiânia. Nonetheless, it is worth noting that even in the case of São Paulo there is great dependence on and mediation by the state government.

One observes in Brazil the experience with inter-municipal associations (*consórcios intermunicipais*), as a weaker substitute of MA authority, which have been used for providing solutions to common metropolitan problems.<sup>9</sup> These associations have legal status that allows them to access credit and offer guarantees, and undertake supervisory, regulatory, and planning functions. There are over 1,900 consortia in several service areas such as health, education, public works, and environmental protection, among others. For example, there are many instances of relative effective consortia for solid waste management, and less so for mass transport, such as in São Paulo and Goiânia.

A significant and rather peculiar feature of Brazilian fiscal federalism is the fact that the 1988 constitution recognizes municipal local governments as “full federation members” with equal standing in sovereignty as the states (Afonso, Soares, and Castro, 2013).<sup>10</sup> What this means is that unlike in most other federal systems around the world, local governments in Brazil are not subordinated to their state governments. So when the states create a MR, local governments can accept but also reject and veto any and all of the provisions introduced by the state legislation. This effectively eliminates the possibility of consolidating local governments in the MR into a single-tier or two-tier metropolitan government model. The effective existence of veto power also has made it more difficult to coordinate and find agreements with a metropolitan dimension. In practice, and as to be expected, coordination and agreements have been highly dependent on political economy factors such as the personal relationship and political party alignments of the governor of the state and the mayor of the principal city in the MA (Arretche, 2013).

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<sup>9</sup> Public Consortia Act (Law 11,107/05).

<sup>10</sup> The Constitution of 1988 also transferred the responsibility for creating and organizing metropolitan areas in Brazil from the federal government to the states (Rezende and Garson, 2006).

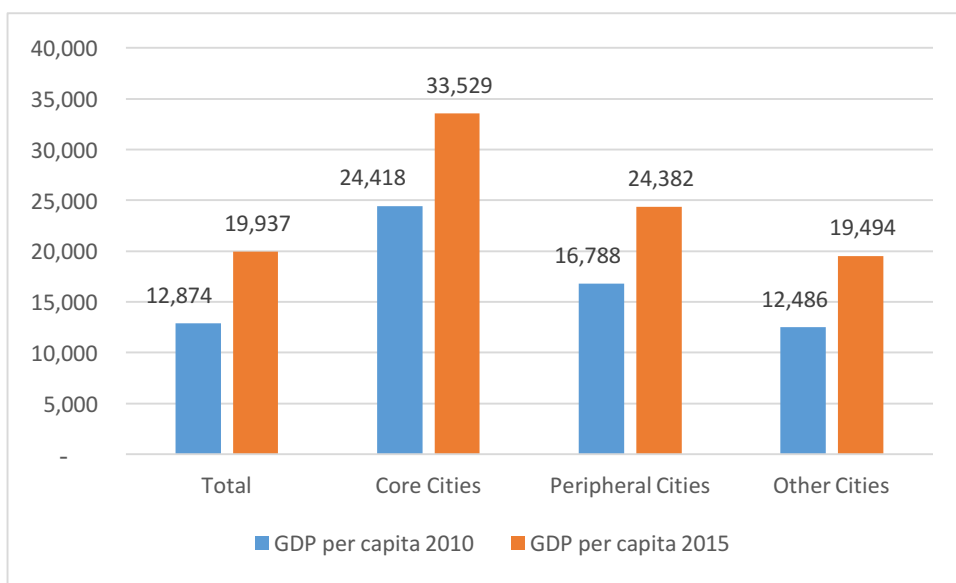
Another notable peculiarity of Brazil's metropolitan governance and finance issues is the considerable economic and fiscal disparities that exist within MRs (see Table 2). Although disparities in GDP per capita between core and peripheral municipalities in MRs have narrowed since 2010, they still remain large. On average, in 2015 per capita income levels were 40 percent higher in the core cities than in the periphery (and were on average almost 60 percent higher than in non-metropolitan municipalities in the country); see Figure 2. In addition to having greater economic bases, income is much more equally distributed among core cities than among suburban municipalities in the MRs. While the Gini coefficient of own revenues for metropolitan capitals is only 0.22, it reaches 0.4 for metro suburban municipalities. The trends are very similar if we look at average household incomes. In the same way, average poverty rates are considerably lower in core municipalities of MRs (9 percent), representing half of the levels found in the metropolitan suburbs (18 percent).

**Table 2. Economic Disparities, Metropolitan Regions and Other Municipalities, Brazil, 2010–15**

		Number	Mean	Std Deviation	Minimum	Maximum	CV	Gini
GDP p.c.	Other cities	4,693	19,494	19,387	3,370	513,134	0.99	0.40
	Metro core cities	25	33,529	14,689	19,812	73,971	0.44	0.22
	Metro Peripheral cities	391	24,382	26,083	4,484	268,381	1.07	0.41
	Total Municipalities	5,109	19,937	20,020	3,370	513,134	1.00	0.40
Household Income p.c.	Other cities	4,693	1,578	677	481	5,311	0.43	0.24
	Metro core cities	25	3,652	905	2,610	5,473	0.25	0.13
	Metro Peripheral cities	391	1,789	737	521	6,157	0.41	0.21
	Total Municipalities	5,109	1,605	700	481	6,157	0.44	0.24
Poverty rate (%)	Other cities	4,693	23	18	0	79	0.78	0.44
	Metro core cities	25	9	5	1	18	0.55	0.31
	Metro Peripheral cities	391	18	15	1	74	0.82	0.44
	Total Municipalities	5,109	22	18	0	79	0.79	0.44

Source: Authors' estimates based on IBGE-SIDRA (2018) and PNUD (2013).

**Figure 2. Municipal GDP, Metropolitan Regions and Other Municipalities, Brazil, 2010–15**



Source: Authors' estimates based on IBGE-SIDRA (2018).

### 3.2 Metropolitan Financing

There are no explicit taxes or resources assigned to MRs in Brazil. In reality, the financing of MRs comes from own revenues of the local governments in the MR and from the transfer of funds from the federal and state governments. At present, only some Brazilian MRs have a small Metropolitan Fund, funded with contributions from the municipalities and the state government (World Bank, 2015).

In the 1998 Constitution, municipalities are assigned the following own taxes:

- Tax on services (Imposto Sobre Serviços de Qualquer Natureza—ISS)
- Property tax (Imposto sobre a Propriedade Predial e Territorial Urbana—IPTU)<sup>11</sup>
- Tax on transfers of real estate (Imposto de Transmissão de Bens Imóveis—ITBI)
- Betterment levies and charges for street lighting, business licenses, and other economic activities

Municipalities are also financed with transfers. First, there is revenue sharing for the municipalities in state government revenues:

<sup>11</sup> The IPTU's rates are set by each municipality within a 2 to 5 percent range. Local governments can grant exemptions or reductions as a way to attract large enterprises to their jurisdictions. Property tax revenue collections are significantly below their potential (Afonso, Pacheco de Castro, and Marques Santos, 2016). Several explanations have been given for the low yield. The first is the relative success of the sales tax on services, which is politically more accepted and easier to administer. In addition, most metropolitan regions include large slum areas where there is no possibility of levying the property tax. The absence of legal title to properties also has limited the applicability of the property tax.

- 25 percent of the state VAT (Imposto sobre Circulação de Mercadorias e Prestação de Serviços—ICMS), of which 75 percent is distributed on a derivation or origin basis and 25 percent according to other criteria<sup>12</sup>
- 50 percent of the state vehicle tax, also on a derivation basis
- 22.5 percent of the tax on industrial products and the tax on federal profits

There is also a revenue-sharing scheme in federal revenues, known as the Municipal Participation Fund (FPM for its initials in Portuguese), which is divided in two parts: 10 percent for state capitals and 90 percent for other local governments, with the following sources:<sup>13</sup>

- 50 percent on rural territorial tax
- 100 percent of profit taxes paid on city enterprises
- 70 percent of taxes in gold-related financial operations

Municipal governments also receive annual specific transfers for education (FUNDEB), health (SUS), social assistance, and infrastructure. They may also receive discretionary extraordinary transfers.

In addition, some local governments have developed additional financing instruments to support their budgets, including land value capture tools (Sandroni, 2016). For example, for the City of São Paulo, Wetzel (2013) reports the following:

- Progressive property taxes introduced in 2010 to promote better land-use practices (but apparently has not been used)
- Urban Operations—a designation of areas for government-sponsored development projects, under which developers pay for development rights
- CEPACs, which are municipal bonds sold in public auction granting holders the right to increase construction areas or buildings deviating from normal regulation only within areas of Urban Operations

The differences in local economic and tax bases described above translate into sharp fiscal disparities within and across the MRs. For instance, even though peripheral municipalities in the MRs have at their disposal 90 percent of the total revenues of the central cities, the disparities when considering own revenues are most striking: in per capita terms, currently core municipalities raise almost three times as much resources as suburban municipalities (see Tables 3a and 3b). Thus, central cities have greater fiscal autonomy as own revenues represent almost 40 percent of their total revenues, on average, while the periphery relies much more heavily on transfers (which amount to 70 percent of their total resources); see Tables 4a and 4b. Additionally, central cities have a much more homogeneous distribution of own revenues than suburban metro cities, based on the estimated coefficient of variation. As own revenues are stronger, core cities have greater access to credit as well, for instance engaging in credit operations four times larger in volume than those of the periphery.

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<sup>12</sup> Criteria include equity considerations, synergies between municipal and state programs, and mitigation of externalities. The devolution criteria promote municipal fragmentation (World Bank, 2015; Ter-Minassian, 2012).

<sup>13</sup> Of the 90 percent, a share of 86.4 percent is apportioned among other municipalities applying a coefficient based on population, which tends to favor smaller municipalities, while the 3.6 percent left goes to large non-capital cities. As Ter-Minassian (2012) indicates, the FPM distribution across states has been frozen since 1989 in order to prevent the proliferation of small municipalities and this, given the migration flows that have taken place since then, has put municipalities in metropolitan areas at a disadvantage, with large populations and reduced own revenues.



**Table 3a. Per Capita Revenues, Metropolitan Regions and Other Municipalities, Brazil, 2015 (current R\$)**

	METROPOLITAN REGIONS		OTHER CITIES
	CORE CITIES	PERIPHERAL CITIES	
<b>Number of municipalities</b>	<b>25</b>	<b>391</b>	<b>4,697</b>
<b>Population</b>	47,459,952	36,702,046	111,098,890
<b>REVENUES</b>	<b>Amount</b>	<b>Amount</b>	<b>Amount</b>
<b>Net Revenues*</b>	<b>2,710</b>	<b>2,429</b>	<b>2,752</b>
<b>Own Revenues</b>	<b>858.6</b>	<b>312.9</b>	<b>177.4</b>
Urban Land and Property Tax (IPTU)	176.6	62.6	34.6
Tax on Services (ISS)	420.1	161.8	78.2
Real Estate Conveyance Tax (ITBI)	77.5	33.0	25.5
Other Taxes: Federal District	81.5	-	-
Fees and Other	103.0	55.4	39.1
<b>Total Transfers</b>	<b>1,556.9</b>	<b>1,971.4</b>	<b>2,429.0</b>
<b>Shared Revenue and Others</b>	<b>793.4</b>	<b>1,102.3</b>	<b>1,470.9</b>
Municipal Participation Fund (FPM)	269.8	528.0	894.8
Participation on the Tax on Goods, Intermunicipal Transportation, and Communication Services (ICMS)	305.0	467.3	466.8
Participation on the Tax on Motor Vehicles (IPVA)	82.4	46.5	43.2
Federal Income Tax Withheld at Source (IRRF)	129.0	46.8	33.7
Other Transfers	7.2	13.7	32.4
<b>Conditional Grants and Compensatory Transfers</b>	<b>763.5</b>	<b>869.0</b>	<b>958.1</b>
Health System (SUS)	302.8	178.2	186.2
Fund for Education (FUNDEB)	269.8	433.4	447.6
Other Current Grants and Compensatory Transfers	154.6	189.1	210.4
Capital Grants	36.3	68.4	113.9
<b>Other Current Revenue</b>	<b>294.5</b>	<b>144.3</b>	<b>145.5</b>
<i>*Amounts of Revenue are net: excluding Social Contributions, deductions to Fund for Education, and other deductions.</i>			
<b>Other Capital Revenue</b>	<b>69</b>	<b>18</b>	<b>18</b>
Credit Operations	56	12	9
Sale of Assets	4	4	7
Loans Amortization Received	2	0	1
Other Capital Revenue	6	2	1

Source: Authors' estimates based on official data from the National Treasury of Brasil (SICONFI): <https://siconfi.tesouro.gov.br/siconfi/index.jsf>.

**Table 3b. Per Capita Revenues, Metropolitan Regions and Other Municipalities, Brazil, 2010–14 (current R\$)**

	METROPOLITAN REGIONS			
	TOTAL	CORE CITIES	PERIPHERAL CITIES	OTHER CITIES
<b>Number of municipalities</b>	<b>4,791</b>	<b>25</b>	<b>368</b>	<b>4,398</b>
<b>Population (in millions)</b>	<b>179,758,016</b>	<b>45,617,840</b>	<b>32,353,966</b>	<b>102,460,792</b>
<b>REVENUE</b>	<b>Amount</b>	<b>Amount</b>	<b>Amount</b>	<b>Amount</b>
<b>Net Revenue*</b>	<b>2,291</b>	<b>2,229</b>	<b>2,002</b>	<b>2,316</b>
<b>Own Revenue</b>	<b>149</b>	<b>660</b>	<b>239</b>	<b>139</b>
Urban Land and Property Tax (IPTU)	29	132	45	27
Tax on Services (ISS)	74	343	131	67
Real Estate Conveyance Tax (ITBI)	20	66	25	19
Other Taxes: Federal District	12	78	15	11
Fees and Other**	16	44	21	15
<b>Shared + Specific Transfers</b>	<b>1,974</b>	<b>1,227</b>	<b>1,601</b>	<b>2,010</b>
<b>Shared Tax Revenue and Others</b>	<b>1,168</b>	<b>661</b>	<b>869</b>	<b>1,195</b>
Municipalities Participation Fund (FPM)/States Participation Fund (FPE)	710	219	442	735
Participation on the Tax on Goods, Intermunicipal Transportation, and Communication Services (ICMS)	385	283	354	388
Participation on the Tax on Motor Vehicles (IPVA)	31	66	33	30
Federal Income Tax Withheld at the Source (IRRF)	25	87	29	25
Other Transfers	18	7	12	18
<b>Specific Grants and Compensatory Transfers</b>	<b>807</b>	<b>566</b>	<b>732</b>	<b>814</b>
Health System (SUS)	148	240	138	149
Fund for Education (FUNDEB)	347	212	333	348
Other Current Grants and Compensatory Transfers	193	72	188	194
Capital Grants	119	42	72	123
<b>Other Current Revenue</b>	<b>168</b>	<b>341</b>	<b>162</b>	<b>167</b>

Source: Authors' estimates based on official data from the National Treasury of Brazil (SICONFI).

**Table 4a. Revenues, Metropolitan Regions and Other Municipalities, Brazil, 2015**

	TOTAL	METROPOLITAN REGIONS				OTHER CITIES
		CORE CITIES		PERIPHERAL CITIES		
<b>Number of municipalities</b>	<b>5,113</b>	<b>25</b>	<b>391</b>	<b>4,697</b>		
<b>Population</b>	<b>195,260,888</b>	<b>47,459,952</b>	<b>36,702,046</b>	<b>111,098,890</b>		
<b>REVENUES</b>	<b>Amount</b>	<b>Amount</b>	<b>Amount</b>	<b>Amount</b>	<b>%</b>	
<b>Net Revenues*</b>	<b>492,878,268,179</b>	<b>100.0%</b>	<b>149,784,747,410</b>	<b>100.0%</b>	<b>79,176,880,776</b>	<b>100.0%</b>
<b>Own Revenues</b>	<b>110,383,021,464</b>	<b>22.4%</b>	<b>57,368,730,385</b>	<b>38.3%</b>	<b>16,337,445,450</b>	<b>20.6%</b>
Urban Land and Property Tax (IPTU)	27,440,256,288	5.6%	13,470,039,120	9.0%	4,232,287,146	5.3%
Tax on Services (ISS)	53,220,812,094	10.8%	28,782,855,309	19.2%	8,007,377,537	10.1%
Real Estate Conveyance Tax (ITBI)	10,004,074,668	2.0%	4,805,117,896	3.2%	1,448,714,562	1.8%
Other Taxes: Federal District	5,935,543,436	1.2%	5,935,543,436	4.0%	-	0.0%
Fees and Other	13,782,334,978	2.8%	4,375,174,624	2.9%	2,649,066,205	3.3%
<b>Total Transfers</b>	<b>331,929,237,473</b>	<b>67.3%</b>	<b>71,981,320,907</b>	<b>48.1%</b>	<b>55,781,177,762</b>	<b>70.5%</b>
<b>Shared Revenue and Others</b>	<b>172,621,034,523</b>	<b>35.0%</b>	<b>34,821,401,688</b>	<b>23.2%</b>	<b>29,703,738,999</b>	<b>37.5%</b>
Municipal Participation Fund (FPM)	64,620,314,449	13.1%	6,949,118,015	4.6%	8,652,692,347	10.9%
Participation on the Tax on Goods, Intermunicipal Transportation, and Communication Services (ICMS)	75,401,279,057	15.3%	15,271,484,442	10.2%	16,267,521,623	20.5%
Participation on the Tax on Motor Vehicles (IPVA)	14,169,099,332	2.9%	4,707,742,961	3.1%	2,354,293,658	3.0%
Federal Income Tax Withheld at Source (IRRF)	15,092,800,002	3.1%	7,669,929,748	5.1%	2,117,058,754	2.7%
Other Transfers	3,337,541,683	0.7%	223,126,522	0.1%	312,172,617	0.4%
<b>Conditional Grants and Compensatory Transfers</b>	<b>159,308,202,950</b>	<b>32.3%</b>	<b>37,159,919,219</b>	<b>24.8%</b>	<b>26,077,438,763</b>	<b>32.9%</b>
Health System (SUS)	44,009,976,827	8.9%	12,446,548,493	8.3%	6,991,783,433	8.8%
Fund for Education (FUNDEB)	71,908,940,973	14.6%	13,063,248,009	8.7%	12,815,809,205	16.2%
Other Current Grants and Compensatory Transfers	33,151,621,661	6.7%	9,654,975,093	6.4%	4,925,525,349	6.2%
Capital Grants	10,237,663,489	2.1%	1,995,147,623	1.3%	1,344,320,776	1.7%
<b>Other Current Revenue</b>	<b>50,566,009,242</b>	<b>10.3%</b>	<b>20,434,696,119</b>	<b>13.6%</b>	<b>7,058,257,564</b>	<b>8.9%</b>

\*Amounts of Revenue are net: excluding Social Contributions, deductions to Fund for Education, and other deductions.

Source: Authors' estimates based on official data from the National Treasury of Brazil (SICONFI)

**Table 4b. Revenues, Metropolitan Regions and Other Municipalities, Brazil, 2010–14**  
(current R\$)

	TOTAL		CORE CITIES		PERIPHERAL CITIES		OTHER CITIES	
<b>Number of municipalities</b>	4,791		25		368		4,398	
<b>Population (in millions)</b>	179,758,016		45,617,840		32,353,966		102,460,792	
<b>REVENUE</b>	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>	<b>Amount</b>	<b>%</b>
<b>Net Revenue*</b>	<b>381,912,748,032</b>	<b>100.0%</b>	<b>12,508,641,280</b>	<b>100.0%</b>	<b>61,451,962,880</b>	<b>100.0%</b>	<b>207,952,148,480</b>	<b>100.0%</b>
<b>Own Revenue</b>	<b>79,316,279,296</b>	<b>20.8%</b>	<b>41,980,366,848</b>	<b>37.3%</b>	<b>11,649,460,224</b>	<b>19.0%</b>	<b>25,686,454,272</b>	<b>12.4%</b>
Urban Land and Property Tax (IPTU)	19,723,229,184	5.2%	10,172,194,816	9.0%	2,885,168,896	4.7%	6,665,865,216	3.2%
Tax on Services (ISS)	39,857,410,048	10.4%	21,817,112,576	19.4%	5,985,823,232	9.7%	12,054,474,752	5.8%
Real Estate Conveyance Tax (ITBI)	7,623,629,824	2.0%	3,816,765,696	3.4%	1,097,198,464	1.8%	2,709,665,792	1.3%
Other Taxes: Federal District	6,849,535,488	1.8%	4,541,512,704	4.0%	697,204,736	1.1%	1,610,818,176	0.8%
Fees and Other**	5,261,173,248	1.4%	1,632,778,880	1.5%	983,646,784	1.6%	2,644,747,520	1.3%
<b>Shared + Specific Transfers Shared Tax Revenue and Others</b>	<b>250,500,235,264</b>	<b>65.6%</b>	<b>52,252,921,856</b>	<b>46.4%</b>	<b>41,882,173,440</b>	<b>68.2%</b>	<b>156,365,144,064</b>	<b>75.2%</b>
Municipalities Participation Fund (FPM)/States Participation Fund (FPE)	130,841,452,544	34.3%	27,314,112,512	24.3%	22,033,000,448	35.9%	81,494,343,680	39.2%
Participation on the Tax on Goods, Intermunicipal Transportation, and Communication Services (ICMS)	49,192,247,296	12.9%	5,222,019,072	4.6%	6,293,521,408	10.2%	37,676,707,840	18.1%
Participation on the Tax on Motor Vehicles (IPVA)	60,018,323,456	15.7%	13,100,148,736	11.6%	12,530,215,936	20.4%	34,387,959,808	16.5%
Federal Income Tax Withheld at the Source (IRRF)	10,152,411,136	2.7%	3,666,333,696	3.3%	1,587,760,384	2.6%	4,898,316,800	2.4%
Other Transfers	9,702,755,328	2.5%	5,082,642,432	4.5%	1,310,813,696	2.1%	3,309,298,432	1.6%
Other Transfers	1,856,340,736	0.5%	242,969,616	0.2%	314,134,080	0.5%	1,299,237,120	0.6%
<b>Specific Grants and Compensatory Transfers</b>	<b>119,658,782,720</b>	<b>31.3%</b>	<b>24,938,809,344</b>	<b>22.2%</b>	<b>19,849,172,992</b>	<b>32.3%</b>	<b>74,870,800,384</b>	<b>36.0%</b>
Health System (SUS)	31,710,734,336	8.3%	9,107,474,432	8.1%	4,801,469,440	7.8%	17,801,789,440	8.6%
Fund for Education (FUNDEB)	52,651,859,968	13.8%	10,138,616,832	9.0%	9,137,417,216	14.9%	33,375,825,920	16.0%
Other Current Grants and Compensatory Transfers	23,752,474,624	6.2%	3,194,631,680	2.8%	4,327,817,728	7.0%	16,230,025,216	7.8%
Capital Grants	11,543,712,768	3.0%	2,498,086,656	2.2%	1,582,468,864	2.6%	7,463,157,760	3.6%
<b>Other Current Revenue</b>	<b>52,096,233,472</b>	<b>13.6%</b>	<b>18,275,352,576</b>	<b>16.2%</b>	<b>7,920,329,216</b>	<b>12.9%</b>	<b>25,900,550,144</b>	<b>12.5%</b>

Source: Authors' estimates based on official data from the National Treasury of Brazil (SICONFI)

There are also considerable disparities in the composition of municipal own revenues within MRs. As core cities are more urbanized and denser and agglomerate more business and economic activity, one expects the property tax (IPTU) and the tax on services (ISS) receipts to be much larger in the center than in the periphery. In fact, IPTU and ISS revenues per capita are on average almost three times higher in central cities than in suburban municipalities. These two tax sources represent about 30 percent of total revenues in metro core cities and only 15 percent in non-core metro municipalities.

The FPM compensates for these revenue discrepancies, although insufficiently. Within the MR, core cities on average receive from the FPM 50 percent the per capita levels received by peripheral cities. Yet, even with this shared revenue, peripheral cities in the MRs reach only 75 percent the resources available in central cities. As we will see below, this situation is much

worse if we consider the potential revenues and expenditure needs of the metropolitan local governments. And, despite the fact that the large conditional grants, in aggregate, further equalize total revenues within the MRs, this financing is earmarked for education and health purposes and thus resources cannot be redirected to finance needed metropolitan infrastructure such as sanitation and transportation. As mentioned, these large disparities between core cities and peripheral jurisdictions constitute an important constraint to the cooperation among local governments within MRs.

Moreover, there are profound differences in metropolitan revenues between MRs across the different regions of the country (see Table 5). Metropolitan cities in the south and southeast regions have significantly higher total revenues per capita and they depend much less on intergovernmental transfers than MRs in other parts of the country. While MRs in the south and southeast regions finance approximately 55 percent of their budgets with own and other current revenues, MRs in the north and northeast do so at only 30 to 35 percent. Also, metro core cities in the south and southeast raise in own revenue about three times the per capita level raised by northern and northeastern counterparts. And, looking across regions, transfers are distributed fairly equally across core cities in the country, except for the midwest region. But because FPM gives more resources to smaller municipalities and those transfers that devolve tax receipts to their origin (ICMS, IPVA, etc.) benefit municipalities with larger economic activity, suburban cities of MRs (medium-sized and with smaller productive bases), particularly in northeastern states, receive less shared revenue (Mendes, Miranda, and Blanco, 2008). These imbalances are only compensated with conditional grants from FUNDEB and SUS, which are distributed in larger per capita amounts to these states.

On the expenditure side, both core and peripheral cities in the MRs spend roughly equal amounts per capita (see Tables 6a, 6b, and 6c). Also, both types of cities face strong budget rigidities as current spending, particularly on personnel, makes up about 90 percent of their total resources, leaving them with little fiscal space for investment. As explained next, the similar levels of spending that core and peripheral cities actually have do not mean that the fiscal system recognizes well the large variation in municipal spending needs and fiscal capacities that would satisfy the demands of the population for local and metropolitan goods and services.

**Table 5. Per Capita Revenues, Metropolitan Regions by Geographical Regions, Brazil, 2015**

	MIDWEST				NORTH				NORTHEAST				SOUTH				SOUTHEAST			
	CORE CITIES	%	PERIPHERAL CITIES	%	CORE CITIES	%	PERIPHERAL CITIES	%	CORE CITIES	%	PERIPHERAL CITIES	%	CORE CITIES	%	PERIPHERAL CITIES	%	CORE CITIES	%	PERIPHERAL CITIES	%
Number of Metropolitan municipalities	3		48		6		40		9		107		3		82		4		114	
Population	4,926,016		2,548,989		5,049,631		1,827,989		12,355,505		7,352,198		3,825,912		5,067,785		21,302,888		19,905,085	
<b>Net Revenues*</b>	<b>4,406</b>	<b>100.0%</b>	<b>2,216</b>	<b>100.0%</b>	<b>2,074</b>	<b>100.0%</b>	<b>2,350</b>	<b>100.0%</b>	<b>2,055</b>	<b>100.0%</b>	<b>2,249</b>	<b>100.0%</b>	<b>3,188</b>	<b>100.0%</b>	<b>2,560</b>	<b>100.0%</b>	<b>3,507</b>	<b>100.0%</b>	<b>2,620</b>	<b>100.0%</b>
<b>Own Revenues</b>	<b>1,536</b>	<b>34.9%</b>	<b>209</b>	<b>9.4%</b>	<b>419</b>	<b>20.2%</b>	<b>110</b>	<b>4.7%</b>	<b>568</b>	<b>27.6%</b>	<b>243</b>	<b>10.8%</b>	<b>1,161</b>	<b>36.4%</b>	<b>326</b>	<b>12.7%</b>	<b>1,438</b>	<b>41.0%</b>	<b>484</b>	<b>18.5%</b>
Urban Land and Property Tax (IPTU)	211	4.8%	37	1.7%	69	3.3%	7	0.3%	117	5.7%	37	1.6%	309	9.7%	73	2.9%	346	9.9%	109	4.2%
Tax on Services (ISS)	448	10.2%	84	3.8%	238	11.5%	74	3.2%	300	14.6%	144	6.4%	538	16.9%	140	5.5%	854	24.3%	258	9.8%
Real Estate Conveyance Tax (ITBI)	80	1.8%	46	2.1%	25	1.2%	11	0.5%	57	2.8%	23	1.0%	172	5.4%	37	1.5%	129	3.7%	42	1.6%
Other Taxes: Federal District	679	15.4%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%	-	0.0%
Fees and Other	118	2.7%	43	1.9%	87	4.2%	18	0.8%	93	4.5%	39	1.7%	141	4.4%	75	2.9%	109	3.1%	75	2.9%
<b>Total Transfers</b>	<b>2,475</b>	<b>56.2%</b>	<b>1,898</b>	<b>85.6%</b>	<b>1,486</b>	<b>71.6%</b>	<b>2,207</b>	<b>93.9%</b>	<b>1,304</b>	<b>63.5%</b>	<b>1,912</b>	<b>85.0%</b>	<b>1,457</b>	<b>45.7%</b>	<b>1,999</b>	<b>78.1%</b>	<b>1,619</b>	<b>46.2%</b>	<b>1,955</b>	<b>74.6%</b>
<b>Shared Revenue and Others</b>	<b>877</b>	<b>19.9%</b>	<b>1,073</b>	<b>48.4%</b>	<b>861</b>	<b>41.5%</b>	<b>1,191</b>	<b>50.7%</b>	<b>713</b>	<b>34.7%</b>	<b>960</b>	<b>42.7%</b>	<b>764</b>	<b>24.0%</b>	<b>1,222</b>	<b>47.8%</b>	<b>833</b>	<b>23.8%</b>	<b>1,131</b>	<b>43.2%</b>
Municipal Participation Fund (FPM)	170	3.8%	618	27.9%	442	21.3%	670	28.5%	301	14.6%	516	22.9%	144	4.5%	562	21.9%	112	3.2%	428	16.3%
Participation on the Tax on Goods, Intermunicipal Transportation, and Communication Services (ICMS)	213	4.8%	353	15.9%	292	14.1%	464	19.8%	279	13.6%	377	16.8%	318	10.0%	526	20.5%	442	12.6%	559	21.3%
Participation on the Tax on Motor Vehicles (IPVA)	80	1.8%	27	1.2%	59	2.9%	18	0.8%	60	2.9%	17	0.8%	142	4.5%	74	2.9%	125	3.6%	72	2.7%
Federal Income Tax Withheld at Source (IRRF)	409	9.3%	40	1.8%	64	3.1%	24	1.0%	71	3.5%	46	2.0%	155	4.9%	48	1.9%	126	3.6%	58	2.2%
Other Transfers	6	0.1%	35	1.6%	3	0.2%	15	0.6%	2	0.1%	4	0.2%	5	0.2%	12	0.5%	28	0.8%	14	0.5%
<b>Conditional Grants and Compensatory Transfers</b>	<b>1,597</b>	<b>36.3%</b>	<b>825</b>	<b>37.2%</b>	<b>625</b>	<b>30.1%</b>	<b>1,016</b>	<b>43.2%</b>	<b>592</b>	<b>28.8%</b>	<b>952</b>	<b>42.3%</b>	<b>693</b>	<b>21.8%</b>	<b>777</b>	<b>30.4%</b>	<b>785</b>	<b>22.4%</b>	<b>825</b>	<b>31.5%</b>
Health System (SUS)	403	9.1%	184	8.3%	183	8.8%	202	8.6%	324	15.8%	192	8.6%	385	12.1%	159	6.2%	299	8.5%	168	6.4%
Fund for Education (FUNDEB)	377	8.6%	382	17.2%	313	15.1%	521	22.2%	202	9.8%	536	23.8%	213	6.7%	403	15.8%	319	9.1%	349	13.3%
Other Current Grants and Compensatory Transfers	794	18.0%	199	9.0%	65	3.1%	167	7.1%	48	2.4%	172	7.7%	68	2.1%	127	5.0%	114	3.2%	253	9.6%
Capital Grants	24	0.5%	60	2.7%	64	3.1%	125	5.3%	18	0.9%	51	2.3%	27	0.8%	87	3.4%	53	1.5%	55	2.1%
<b>Other Current Revenue</b>	<b>395</b>	<b>9.0%</b>	<b>109</b>	<b>4.9%</b>	<b>170</b>	<b>8.2%</b>	<b>33</b>	<b>1.4%</b>	<b>183</b>	<b>8.9%</b>	<b>94</b>	<b>4.2%</b>	<b>570</b>	<b>17.9%</b>	<b>235</b>	<b>9.2%</b>	<b>451</b>	<b>12.9%</b>	<b>180</b>	<b>6.9%</b>

\*Amounts of Revenue are net: excluding Social Contributions, deductions to Fund for Education, and other deductions.

Source: Authors' estimates based on official data from the National Treasury of Brasil (SICONFI)

**Table 6a. Per Capita Expenditures, Metropolitan Regions and Other Municipalities, Brazil, 2015**

	METROPOLITAN REGIONS		OTHER CITIES
	CORE CITIES	PERIPHERAL CITIES	
Number of municipalities	25	391	4,697
Population	47,459,952	36,702,046	111,098,890
<b>Total Per Capita Expenditure</b>	<b>2,768</b>	<b>2,457</b>	<b>2,748</b>
<b>Per Capita Net Current Expenses*</b>	<b>2,490</b>	<b>2,191</b>	<b>2,468</b>
Personnel	1,384	1,242	1,404
Interest	30	5	4
Other Current Expenses	1,077	943	1,060
<b>Capital Expenditure</b>	<b>278</b>	<b>267</b>	<b>280</b>
Investment	231	234	246
Amortization	47	32	34

\*Social Contributions are deducted from Personnel

Source: Authors' estimates based on official data from the National Treasury of Brasil (SICONFI)

**Table 6b. Expenditures, Metropolitan Regions and Other Municipalities, Brazil, 2015**

	TOTAL		METROPOLITAN REGIONS				OTHER CITIES	
			CORE CITIES		PERIPHERAL CITIES			
<b>Number of municipalities</b>	5,113		25		391		4,697	
	Amount	%	Amount	%	Amount	%	Amount	%
<b>Total Expenditure</b>	500,707,040,373	100%	154,344,014,973	100%	80,533,390,073	100%	265,829,635,327	100%
<b>Net Current Expenses*</b>	448,497,532,638	89.6%	135,481,935,045	87.8%	72,259,778,877	89.7%	240,755,818,716	90.6%
Personnel	244,091,061,550	48.7%	71,436,749,707	46.3%	39,073,158,661	48.5%	133,581,153,182	50.3%
Interest Expenses	200,168,863,953	40.0%	61,107,758,241	39.6%	32,740,187,153	40.7%	106,320,918,559	40.0%
Other Current Expenses	4,237,607,136	0.8%	2,937,427,097	1.9%	446,433,063	0.6%	853,746,976	0.3%
<b>Capital Expenditure</b>	52,209,507,735	10.4%	18,862,079,928	12.2%	8,273,611,196	10.3%	25,073,816,610	9.4%
Investments	43,639,600,775	8.7%	15,516,545,272	10.1%	6,904,956,419	8.6%	21,218,099,084	8.0%
Amortization	8,569,906,960	1.7%	3,345,534,656	2.2%	1,368,654,778	1.7%	3,855,717,526	1.5%
Total Revenue	501,197,696,314	100%	154,693,204,569	100.0%	80,355,254,911	100.0%	266,149,236,834	100.0%
Current Revenue	492,878,268,179	98.3%	149,784,747,410	96.8%	79,176,880,776	98.5%	263,916,639,993	99.2%
Capital revenue	8,319,428,135	1.7%	4,908,457,159	3.2%	1,178,374,135	1.5%	2,232,596,841	0.8%

\*Social Contributions are deducted from Personnel

Source: Authors' estimates based on official data from the National Treasury of Brasil (SICONFI)

**Table 6c. Per Capita Expenditures, Metropolitan Regions and Other Municipalities, Brazil, 2010–14**

	TOTAL		METROPOLITAN REGIONS				OTHER CITIES	
			CORE CITIES		PERIPHERAL CITIES			
<b>Number of municipalities</b>	4,791		25		368		4,398	
<b>Population (millions)</b>	179,758,016		45,617,840		32,353,966		102,460,792	
	Amount	%	Amount	%	Amount	%	Amount	%
<b>Total Expenditure</b>	2,229	100%	2,231	100%	1,946	100%	2,253	100%
<b>Net Current Expenses*</b>	1,930	86.6%	1,945	87.2%	1,692	87.0%	1,950	86.5%
Personnel	1,078	48.3%	1,096	49.1%	962	49.4%	1,087	48.3%
Interest Expenses	5	0.2%	27	1.2%	7	0.3%	5	0.2%
Other Current Expenses	877	39.4%	926	41.5%	759	39.0%	887	39.4%
<b>Capital Expenditure</b>	299	13.6%	285	13.2%	254	13.2%	303	13.6%
Investments	267	12.0%	234	10.8%	223	11.6%	271	12.1%
Amortization	31	1.4%	42	14.8%	29	1.5%	31	1.4%
<b>Total Revenue</b>	2,233	100%	2,200	98%	1,952	100%	2,257	100.4%
Current Revenue	2,224	99.6%	2,102	95.5%	1,947	99.8%	2,248	99.6%
Capital Revenue	18	0.8%	54	2.5%	13	0.7%	18	0.8%
<b>Superavit/Deficit Current</b>	294		1		20		273	
<b>Total Superavit/Deficit</b>	28		0		3		25	

Source: Authors' estimates based on official data from the National Treasury of Brasil (SICONFI)

Fiscal disparities within MRs are larger if one considers the differences in fiscal capacities (the potential revenue from the assigned sources) and expenditure needs (the service delivery demand and costs) from the perspective of an equalization program. The estimations herein (see Annex 1 for the methodology) of the fiscal capacities, expenditure needs, and fiscal gaps of the metropolitan cities and other municipalities represent only a preliminary effort for the purpose of illustrating further the large fiscal disparities existing in Brazil and the need to reform the transfers system. A deeper and more detailed study is underway to better capture the disparities and to help design viable ways to establish an equalization program for municipalities.

On the expenditure side, even considering the significant equalizing effects of current fiscal transfers, actual spending in metro non-core municipalities is far below estimated expenditure needs (on average, it represents about 51 percent of what is needed), while the opposite is true for core cities, where actual spending levels are larger than estimated expenditure needs (see Table 7).

Likewise, fiscal capacity of central cities is significantly greater than in suburban municipalities (on average five times in per capita terms), and far exceed actual own revenues, which suggests that there is ample room for metro-core local governments to exert much greater revenue effort. Similarly, the revenue potential of peripheral cities is on average about five times their actual levels of own revenues.

Ultimately, most metro central cities have positive fiscal gaps (their fiscal capacity is larger than their expenditure needs). Only one out of the 25 central cities in the analysis would require relatively small sums from the equalization program to address their fiscal gaps. In contrast, non-core metro cities have large gaps, and the equalization transfers needed to fill them up, on average, require much larger sums than the FPM currently gives them (on average, about seven times the actual per capita level).

**Table 7. Fiscal Capacity, Expenditure Needs, and Fiscal Disparities, Metropolitan Regions and Other Municipalities, Brazil, 2010–14**

Type	Variable (pc)	N	Media	Std Dev	Min	Max	CV
Total Municipalities	total income	4750	2,139.64	1,625.22	579.22	44,791.21	0.76
Other Cities	total income	4377	2,162.45	1,655.00	579.22	44,791.21	0.77
Metro Core Cities	total income	24	2,153.14	1,524.12	1,131.23	8,858.36	0.71
Metro Peripheral Cities	total income	349	1,852.60	1,166.19	707.96	13,026.61	0.63
Total Municipalities	own revenue	4750	171.28	415.16	2.00	18,867.51	2.42
Other Cities	own revenue	4377	161.72	418.75	2.00	18,867.51	2.59
Metro Core Cities	own revenue	24	712.21	497.56	138.40	2,389.06	0.70
Metro Peripheral Cities	own revenue	349	254.00	320.23	7.42	2,772.69	1.26
Total Municipalities	FPM	4749	738.26	555.12	13.56	6,878.99	0.75
Other Cities	FPM	4376	763.83	561.71	37.07	6,878.99	0.74
Metro Core Cities	FPM	24	294.68	349.85	13.56	1,782.10	1.19
Metro Peripheral Cities	FPM	349	448.18	351.50	34.27	3,579.92	0.78
Total Municipalities	fiscal capacity	4750	1,403.77	2,044.75	333.15	123,089.85	1.46

Other Cities	fiscal capacity	4377	1,372.73	1,029.78	407.95	24,743.43	0.75
Metro Core Cities	fiscal capacity	24	7,298.56	24,735.57	860.85	123,089.85	3.39
Metro Peripheral Cities	fiscal capacity	349	1,387.63	935.07	333.15	11,700.72	0.67
Total Municipalities	total expenditure	4750	2,402.11	2,005.46	632.74	70,042.17	0.83
Other Cities	total expenditure	4377	2,429.53	2,055.12	632.74	70,042.17	0.85
Metro Core Cities	total expenditure	24	2,587.13	1,817.68	1,231.58	10,493.29	0.70
Metro Peripheral Cities	total expenditure	349	2,045.43	1,190.40	773.09	12,615.28	0.58
Total Municipalities	expenditure needs	4750	6,754.04	7,578.75	762.05	280,184.25	1.12
Other Cities	expenditure needs	4377	7,008.68	7,655.30	797.07	280,184.25	1.09
Metro Core Cities	expenditure needs	24	840.32	91.25	762.05	1,124.81	0.11
Metro Peripheral Cities	expenditure needs	349	3,967.07	5,990.28	794.08	85,027.30	1.51
Total Municipalities	fiscal disparity	4382	5,931.24	7,603.52	3.92	279,109.66	1.28
Other Cities	fiscal disparity	4127	6,060.90	7,638.45	3.92	279,109.66	1.26
Metro Core Cities	fiscal disparity	1	144.68	-	144.68	144.68	0.00
Metro Peripheral Cities	fiscal disparity	254	3,847.22	6,694.68	11.28	83,415.03	1.74

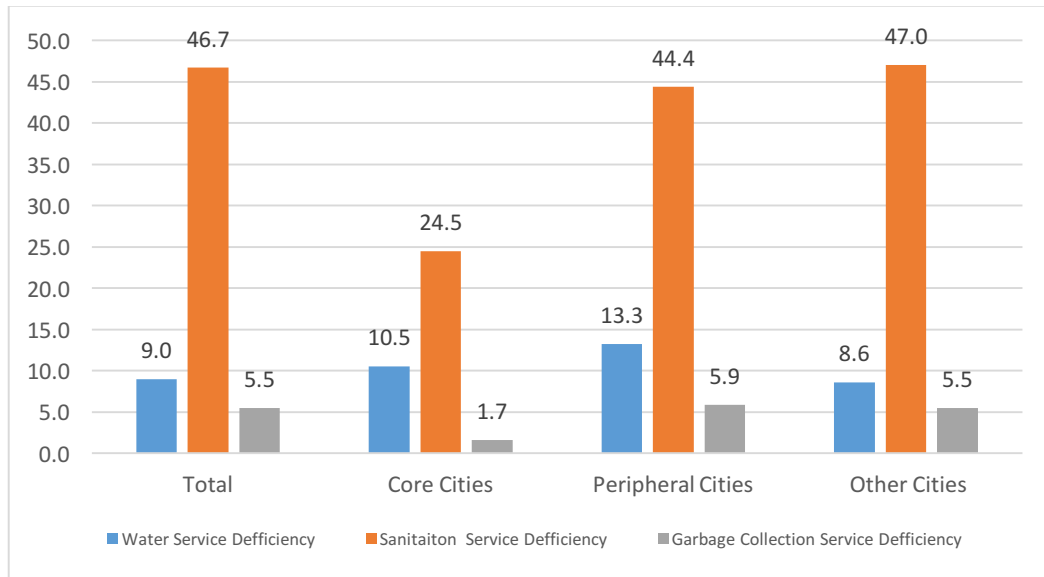
*Source:* Authors' estimates based on official data from the National Treasury of Brasil (SICONFI)

In this uneven context, for instance, even though slum renewal figures highly in the policy agenda of many MRs, there have been difficulties and reticence to invest much-needed resources in this area because the needs are huge in the most basic services such as water and sanitation and roads but also in social services including education and health and public safety. But, in addition, the fiscal standing of the metro municipalities is largely different and unequal. Therefore, in many ways, these issues go well beyond the scope and abilities of local governments within each MR and should probably require the involvement of state and federal authorities with the proper implementation of equalization transfers.

MRs exhibit uneven performance and significant disparities in local service delivery, particularly within the metro area (see Figure 3), perhaps as a result of differing fiscal and expenditure capacities and needs. For instance, the proportion of households with no access to sanitation services (i.e., no adequate connection to sewerage) and garbage collection is much lower for large core municipalities in the MRs than it is in the peripheral cities (on average, 24.5 percent vs. 44.4 percent and 1.7 percent vs. 5.9 percent, respectively.). There are also disparities in the coverage of water services, although they are relatively smaller.



**Figure 3. Access to Municipal Public Services, Metropolitan Regions and Other Municipalities, Brazil, 2010**



Source: Authors' estimates based on IBGE-SIDRA (2018).

It seems like by far the most successful—in relative terms—among MRs has been the São Paulo Metropolitan Region (SPMR). A distinctive aspect of metropolitan governance in SPMR has been the ability of subgroups of municipalities to create specific associations to address well-identified issues; these include the Baixada Santista, an association of nine municipalities dealing with issues surrounding the operations of the Santos Port, and the Greater ABC Chamber (Região do Grande ABC), formed by seven municipalities to address issues related to the automobile industry and watershed protection. For details on the experiences of other MRs in the country, see IPEA (2010) and Marguti, Costa, and Favarão (2018).

### 3.3 *The Statute of the Metropolis*

After much discussion and preparation, the Statute of the Metropolis was approved in 2015 (Lei Federal nº 13.089/2015). The main objective of the Statute of the Metropolis is to create conditions for an effective collaboration within the MRs (World Bank, 2015). While the role of the federal government is to provide the broad national policy framework for MRs, state governments continue to be responsible for the creation of MRs and must develop integrated plans for metropolitan development. State governments must also introduce state laws complementary to the Statute with guidelines and criteria for MR creation, the metropolitan governance structure, and tools for integrated planning, among other issues. Municipalities continue to be free to enter into any metropolitan arrangement, but they will have three years to integrate their own planning into the integrated metropolitan plan. Notably, provisions for financial support from the federal government were not included in the Statute of the Metropolis. The creation of a specific fund for integrated urban development eventually was not included in the law.

Specifically, this is the legislated framework for the governance of MRs in the Statute:<sup>14</sup>

- The Upper Board: The Collegiate Deliberative Executive Instance, which is comprised of the municipalities in the metropolitan area and state and civil society representatives (unincorporated). This body deliberates about plans, projects, and programs works. It also may propose the establishment of thematic and special agencies.
- Executive Technical Organization: City/Metropolitan Agency. This entity is governed by public law—special authority of a territorial intergovernmental body. On behalf of the Upper Board, it must promote the organization, planning, and execution of public functions of common interest (directly or indirectly).
- Resource allocation system: Financing and Investment Fund. This should finance and invest in plans, programs and projects, and works of interest.

Thus, as the new hope for improving the governance system of MRs, the Statute of the Metropolis falls short of providing an effective solution, mainly because of constitutional constraints. Nevertheless, the new framework clears up responsibilities and will facilitate inter-municipal cooperation and cooperation of MRs with state governments.

#### **4. Main Lessons from the International Experience in MA Financing**

The objective of this section is to provide an in-depth discussion of the issues and approaches in metropolitan financing around the world and in Latin America. The discussion will involve the key principles, models, and innovative practices in metropolitan financing that could be applied in the short and long term in Brazil. As pointed out in the previous section, the sequence in the design of a metro-wide government goes from what type of governance model is possible and desirable to the assignment of functional expenditure responsibilities to those governments, and finally to the different forms of financing available. This is the logical sequence followed in this section in the review of international practices.

##### *4.1 Governance*

The lack of a proper MR governance structure has been and continues to be among the main challenges in metropolitan-wide financing around the world.<sup>15</sup> There are different governance models that can be observed in international practice. These include: (i) the fragmented model where many local governments in the MA attempt to coordinate their actions though associative

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<sup>14</sup> In some ways the institutional framework introduced in the Statute of the Metropolis builds significantly on the recent past experience of some MRs, in particular SPMR. As described in Wetzel (2013), Complementary Law 1.139.2011 issued by São Paulo state in 2011 reorganizing the governance institutions of the SPMR has many similarities. That governance architecture included: (i) a development council for the MR including the mayors of all municipalities in the MR and state executive and legislative branch representatives for the deliberation of common interest issues (land use and planning; transportation and mobility; sanitation and housing, etc.); (ii) a consultative council to facilitate the presentation to the development council of initiatives from civil society and local and state agencies; (iii) technical groups (*câmaras temáticas*) to pursue specific issues of interest to the SPMR; (iv) a regional enterprise (*entidade autarquia*) to plan and execute projects such as the regional transport network; and (v) a regional development fund to contribute analytical, technical, and financial resources to common projects.

<sup>15</sup> The specialized literature has produced several taxonomies of metropolitan governance. See, for example, Bahl and Linn (1992); Bahl, Linn, and Wetzel (2013); and Bird and Slack (2004).

institutions, jointly financed projects, and even public enterprises;<sup>16</sup> (ii) single-tier metropolitan-wide government;<sup>17</sup> and (iii) two-tier metropolitan-wide government, where a metro-wide government providing public good with large externalities coexists with local governments providing other local public goods that do not exhibit externalities.<sup>18</sup> In the case of the two-tier governance model, the first tier can be an elected representative government level but can also have “weaker” forms, such as appointed special district administrators and public enterprise. Note that these latter forms are also possible under the fragmented model.

In theory, the optimal governance structure is a two-tier system with metropolitan-wide government that is representative and elected and has powers to provide area-wide services and infrastructure and raise revenues metro wide. At the second tier, there are smaller local governments in charge of providing local services that do not exhibit economies of scale and that therefore can add greater proximity and accountability to residents. This governance structure is ideal because it allows for elected officials directly accountable to all metropolitan residents, an efficient level of provision of metro area-wide public services and infrastructure, the clear assignments of metro-wide tax revenue sources with high levels of own tax revenue financing, clear identification of the recipient of central or state government transfers, and greater facility to borrow for investment in infrastructure.

The difficulty with fragmented governance models here lies in not being able to reach strong coordination. The weaker the coordination, the farther away from the ideal the results will be. Note also that fragmented functional models with special-purpose districts or dedicated area-wide enterprises are likely to lack democratic representation and accountability; therefore, they are less desirable.

In reality, very few MAs around the world enjoy a two-tier governance structure with democratic representation. Actually, the most common governance structure corresponds with the presence of many fragmented local government units. These are not always equal in size—most often, a large central city government is present—and there is inequality in the availability of resources per capita. The situation usually gets further complicated by overlapping functional responsibilities among the local, intermediate (regional or provincial), and national levels of government. The fragmented governance model can overcome some of the challenges in the provision of common services and the required financing by creating associations of local governments that work in different capacities as a metropolitan authority.

As mentioned above, part of the solution may also lie in the creation of alternate parallel governance structures such special-purpose districts or the delegation of authority to public enterprises to provide services and raise funds. Another common governance feature, often associated with the weaker types of governance institutions, is that in many occasions MA authority is mainly used for planning purposes, with those plans never being implemented or being only partially implemented.

The ability of MRs to effectively deliver common good services and be able to adequately finance depends also on the *vertical arrangements* in the system of intergovernmental relations (Bahl, Linn, and Wetzels, 2013). MR-wide governments may be treated symmetrically (like any other local government) or asymmetrically (by giving it some

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<sup>16</sup> Examples of the fragmented model include São Paulo, with 39 autonomous municipalities; Mexico City, with over 50; and most metropolitan areas in the United States.

<sup>17</sup> Examples of single-tier metropolitan governance with metro-wide governance and/or with little role for submetropolitan units include Copenhagen, Cape Town, Johannesburg, and Toronto.

<sup>18</sup> Two-tier examples include Manila, with a metropolitan government in charge of several common good responsibilities and 17 second-tier municipalities.

special status). This latter arrangement typically represents additional sources of revenue, including the ability to raise additional taxes or receive special transfers, and additional expenditure responsibilities. How this is actually done varies from country to country. In some cases, cities encompassing metropolitan areas may be given provincial or regional status, as is the case for some cities in China, Russia, and Vietnam.<sup>19</sup> In other cases, the special status derives from being the capital city of the country. From this perspective, the additional funds may be justified because of the additional services that need to be provided; however, special capital city status does not always mean that the metro-wide issues are properly addressed. A second vertical dimension has to do with the degree of shared or overlapping responsibilities and how much autonomy or discretion for metropolitan public service delivery that metropolitan local governments have with upper levels of government—potentially including the regional and central government—and how well coordinated those activities are.

#### *4.2 The Assignment of Functional Expenditure Responsibilities*

MAs tend to be relatively large geographical regions that fundamentally require two different types of public goods. In the first group are public goods and services that have an optimal benefit area as large as the MA because they show significant externalities; these would include public services such as public transportation, highways, brownfields, water and sewage treatment plants, and a variety of other large infrastructure projects.<sup>20</sup> Even though these public services could be at least partially provided by the smaller municipalities in the area, the level of provision would most likely be inefficient because individual municipalities would fail to take into account the positive externalities that could be enjoyed by the residents of other municipalities in the area. It is the presence and importance of this group of public goods to the economic potential of the entire MA that raises the necessity of a metropolitan-wide government authority. It is preferable that this authority be a well-identified government unit with directly elected officials; second best, it can be the result of cooperation among the municipalities in the area. Nevertheless, without a metro-wide authority it is unlikely that there will be an efficient provision of metro-wide public services.

In the second group are what we could call strictly local public goods, with well-defined benefit areas and producing little or no externalities beyond the physical boundaries where they are provided; these would include services such as street lighting, parks, or elementary education. The smaller municipalities comprising the MA would most efficiently provide these public services, which would allow for greater responsiveness and accountability. Second best would be for the metro-wide government to provide these local area services, but the cost here would be a loss of representation and accountability.

#### *4.3 The Financing of MAs: Taxes and Charges, Transfers, Borrowing, and Other Creative Financing Sources*

As in the case of any other subnational government, MRs should count on the three conventional financing instruments: own revenues from taxes and charges, intergovernmental transfers, and borrowed funds for infrastructure financing. The special features and needs of

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<sup>19</sup> Note that an asymmetrical vertical model—where cities encompassing metropolitan areas are given provincial or regional status—can effectively accomplish the same things as a metro-wide government.

<sup>20</sup> Medium- and long-term planning is often added to the list of these common good services. Planning is most helpful in allocating land use across alternative purposes including urban transport and public spaces. Planning also allows for projecting the needs for infrastructure and the required financing associated with demographic projections and sustainable regional economic development.

MAs call for some specific adjustments and adaptations in all three financing instruments. The difficulties in applying some of these conventional sources of revenue as well as the huge financing needs of MAs has led to the pursuit of other more unconventional financing sources, including PPPs, and has been termed “creative urban financing.”

There is long recognition and consensus among subnational finance experts that own revenues—from own taxes and fees and charges—are a more desirable form of financing than intergovernmental transfers are. The fundamental reason is that own revenues bring more accountability and fiscal responsibility to the actions of local officials, while transfer dependence can be associated with less-efficient decisions and less fiscal discipline. However, the presumption of the greater accountability associated with own revenue financing depends critically on the presence of democratically elected local authorities. The latter is important because, as we have seen in many instances, the actual governance model adopted in MRs does not include metro-wide authorities that are elected. Therefore, own revenue financing through taxes and fees and charges is much more meaningful in the case of metropolitan governance where officials are elected, such as single-tier or two-tier metro-wide governments. In the case of MR governance models that are the result of cooperative arrangements, the financing through intergovernmental transfers is equally, if not more, adequate. Financing via taxes in this case can still be attractive, but only as an additional way to mobilize revenues.

**4.3.1 Taxes and charges.** Although country experiences are varied and complex, in general, there are two systemic weaknesses in tax assignments to MRs and subnational governments in general (Martinez-Vázquez, 2013). First, there tends to be fairly limited assignment of revenue-raising powers, and often it is the case that even the taxing powers that are devolved are not adequately used. Second, the tax instruments that are actually assigned often are poorly designed. This means that many subnational governments including MAs are effectively far from being self-sufficient in terms of own revenues, pointing in many cases to large vertical imbalances. The reasons often tend to be simple political economy issues: the lack of desire by central governments to devolve tax authority for potential significant tax revenues sources and the complacency of subnational governments with getting revenue sharing and other types of transfers instead of taxing their own residents.<sup>21</sup> These incentives tend to overpower others, including the interest that some central government could have in being liberated from the obligation to finance local governments and the burden this puts on their budgets.

Other problems are present. The typically fragmented structure of metro areas may impose additional constraints in the assignment of revenue sources. For one, tax base competition among the different jurisdictions in the MA is likely to limit the choices of taxes (on capital and labor income) with highly mobile bases within the MA. However, quite different equilibriums are possible in tax competition, and some of those taxes on capital and labor may be used, although at rates that are lower and more uniform than may be optimal. Nevertheless, differences in rates and taxes may be expected within fragmented metropolitan areas if jurisdictions can justify them to taxpayers as benefit taxes. For this reason, a more intense

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<sup>21</sup> There can be a more subtle but powerful political economy argument behind the lack of devolution of extensive taxation powers, especially in developing countries with high concentration of economic activity in just a few metropolitan centers. As Bahl, Linn, and Wetzel (2013) point out, urban areas, and especially metropolitan areas, concentrate much of the non-natural resource wealth of the country and therefore the tax bases of most broad tax revenues. Making metropolitan governments more dependent on transfers allows the central governments the flexibility to tax those bases and implement redistribution and equalization programs in other parts of the country, especially those that are poor in rural areas. Getting subnational governments themselves to agree to significant redistribution programs can be much harder to accomplish.

utilization of well-defined user charges and fees within fragmented metropolitan areas is expected.

There are a number of desirable properties that tax assigned to MAs should comply with, and they are identical to those for tax assignments to subnational governments (Martinez-Vázquez, 2015). These include:

- (i) Revenue buoyancy, meaning that overall, revenues should change roughly in proportion to the economic base;
- (ii) Equity, meaning that good revenue sources are “fair” or equitable in the sense of horizontal equity (under which taxpayers in similar circumstances should be treated similarly) and vertical equity (under which taxpayers with different incomes should pay according to their “ability to pay”);
- (iii) Efficiency, meaning that the tax should have relatively low administration and compliance costs and create a minimum of distortion in the economy; and
- (iv) Political acceptance, meaning that taxes need to be sensitive to the historical and institutional framework in a country.

In addition, several other principles are desirable for taxes that are to be assigned at the subnational level.<sup>22</sup> First, the benefit principle that relates revenue sources to the benefits being provided should be implemented to the largest extent possible. Second, subnational revenue sources should have a tax base that is relatively evenly distributed across jurisdictions. This helps to minimize fiscal disparities among subnational governments and reduces the burden put on equalization grants to allow a more uniform quantity and quality of services. Third, subnational tax sources should have immobile bases to minimize the likelihood of tax competition among jurisdictions in a “race to the bottom.” However, not all tax competition is undesirable; moderate tax competition gives an incentive to politicians and bureaucrats to be efficient and to provide services according to citizens’ preferences in their choice of taxes. Fourth, subnational taxes should be geographically neutral in the sense that they do not interfere with domestic or international commerce, they do not distort the location of economic activity across the national territory, and they are not exported such that the taxes levied by a subnational government are primarily borne by residents in other jurisdictions. Fifth, there must be administrative feasibility so that subnational taxes can be implemented without undue costs of compliance and administration. Certain taxes may be better administered at the local level because of information advantages (e.g., property taxes), while for the same reasons local governments have a relative disadvantage in collecting other taxes (e.g., personal income tax). Sixth, subnational grants should exhibit generally stable tax bases; revenue sources that are highly sensitive to general economic conditions (e.g., profit taxes) should be assigned to the central government, which has greater ability to deal with cyclical fluctuations in revenues through borrowing and other means. Seventh, subnational taxes should be highly visible so that tax burdens are clearly perceived by local residents. Of course, subnational governments are likely to think quite differently about this and prefer modes of taxation that are opaque to taxpayers. Finally, subnational tax assignments need to be stable over time. A typical problem of transitional countries has been unstable assignments, with the assignments not being established in permanent laws but instead decided in annual budgets. Ad hoc assignments decided on an annual basis may also result in a lack of uniformity, unnecessary complexity, and perverse incentives toward revenue mobilization.

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<sup>22</sup> See, for example, McLure (1998).

In the case of revenue assignments to MAs, there is an additional feature that is very desirable. Specifically, there needs to be compatibility of those assignments with region- or metro-wide taxation. Because all residents consume metro-wide services, the tax base and therefore tax payments should also extend to the entire metropolitan area.

One thing subnational taxes do not need to do is attempt to redistribute income through progressive rate structures. This is not only because that, as Musgrave (1959) indicated, income redistribution is a governmental function best performed at the central level, but also because the elimination of some taxes due to their assumed regressivity may do more harm than good. When local revenues are reduced because of the elimination of those taxes, local public services are also reduced, negatively affecting access to those that need the services most. Furthermore, the regressivity of local taxes can be mitigated by provisions for relief of hardship and other measures to protect those with the lowest incomes. Overall, the desirable redistribution of income through the tax system should be the responsibility of the states and federal government, especially the latter.

What are the candidates for revenue assignment to MAs? In the first place, there should be as extensive as possible use of charges and fees. There is little disagreement that user charges should always be a substantial part of local government finances. To the extent that the MA government provides services susceptible of being financed with user charges, then this source of revenue should be part of the metropolitan finances. And certainly there is a variety of services that are offered metropolitan-wide that can be financed by user charges. Those include metro-wide transport systems, especially mass transit systems, solid waste disposal with related brownfields, water and sanitation, and other services (if they are not privatized) like electricity. The relative significance of user charges as a revenue source is often limited by political economy issues, in particular the perception that these charges are regressive because they represent a larger share of low-income households. The experience of many countries is that once a culture of low or no user charges is entrenched it becomes politically difficult to raise them to levels close to cost recovery. This means that the consumption of those services by many middle- and higher-income households is subsidized by the general taxpayer, including low-income households.

The financing of MAs necessarily has to include own metropolitan-wide taxes. So the question is, what types of taxes are available and could be used to support metropolitan financing?

The property tax is among the most common sources of local tax revenue. Its attraction to public finance experts is that it closely resembles a benefit tax because many of the services local residents receive are tied to their residences. It also has the attraction of having low economic distortions. Working against it are first the perception that it may a regressive tax—but this is not likely the case in most circumstances—and second, its relative unpopularity among local residents in part because of its high visibility and salience and in part because it can tax relatively illiquid families because assessed value increases are unrealized capital gains.<sup>23</sup>

Given that there is little question on the appropriateness of this tax for financing local governments, which provide public services with locally contained benefit areas, the question is whether the property tax is also an adequate tax at the MA level. The answer again relates to the types of services MA authorities actually provide—so with benefits those are residence

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<sup>23</sup> There are some additional reasons for the weakness of collections. For example, the property tax is not an easy tax to administer. Updating the fiscal cadasters so to approximate market values can be a costly and time-consuming task. For all those reasons, collection, especially in developing countries, is relatively small (Bahl and Martinez-Vazquez, 2007).

related even though they are metro-wide. A different but important issue related to the appropriateness of property taxes at the MA level is whether the tax base can be shared by the local fragmented governments and the MA authority. The answer in both cases is affirmative. Public services such as public transportation or water and sewage lines can have a metro-wide dimension and are very definitely residence related. On the sharing of the tax bases, it is not uncommon that the same property tax bases are shared by different government units. For example, in the United States, property tax bills commonly include charges related to general local public services, to special districts as in the case of school districts and other, and also parts of the bill charged by the state government.

What is the evidence of the use of the property tax in MAs? In the case of developed countries, most MAs make use of the property tax. In the case of developing countries, McCluskey and Franzsen (2013) survey 30 large MAs and find that although the property tax is part of their revenue portfolio and they collect most property taxes in their respective countries, the relative importance and trends of revenue collections are very diverse. Clearly, many MAs underuse their property tax potential.

There are also other forms of property taxes. First, there are property transfer taxes. This can be a relatively high revenue–yielding tax and possibly progressive in its incidence, but with the negative aspect of lock-in effects on land and property sales, which leads to efficiency losses. This form of property taxation is also likely to be more volatile in its revenue flows than the regular property tax and typically leads to the significant underreporting of sale prices. Second, there are betterment levies or land value capture levies. These are special assessments or charges linked to the ownership of property—being developed or already established—which are used to finance the construction of new infrastructure in a particular area of the MA or to capture a part of property value increase resulting from either the addition of particular infrastructure such as sidewalks, lighting, or newly available sewage lines or changes in land use. These types of levies have become more attractive and although they are more commonly discussed they still represent a small share of local financing (Bahl and Linn, 1992; Bahl, Linn, and Wetzel, 2013; Blanco Blanco, Fretes Cibils, and Muñoz Miranda, 2016).

Most MA budgets require financing levels that are likely to go beyond the revenue produced by user charges and the different types of property taxes. What other types of taxation are available to these governments?

From a large sample of local governments around the world, Martinez-Vázquez (2013) shows that many other broad base taxes are used, including piggyback or surtax individual income taxes and different forms of sales taxes and businesses taxes. These are taxes that can be perceived as also proxying benefits for those households with residence in the city but also those working there or otherwise visiting there. Motor vehicle taxes (annual licenses to operate; a tax on the estimated value of the vehicle; a sales tax on motor fuel, tolls, or parking; and restricted permit charges) are also used but are not as common as they should be—also note that these are much more appropriate at the MA level than at the local level. Several other taxes are also used such as excise taxes or excise surcharges. For example, public utility use, such as electricity and telephone services, can also serve as proxies for benefit charges because the consumption of those services is highly related to the consumption of local services by households and businesses.

The type of governance model adopted by the MA affects the ease of revenue assignments. Fragmented MA government structures make the case for using broad-based taxes, in fact any taxes, much less feasible. In the case where MAs have regional or provincial status, then it is easier for these governments to have broad-base taxes. Examples are shown



in Table 8, with “good” and “bad” choices reflecting how well the different taxes achieve the desirable properties for subnational taxes.

**Table 8. Types of Taxes Used in Large Metropolitan Areas**

Tax	High income <sup>24</sup>	Middle income	Low income
<b>Good Tax Choices</b>			
Business Tax	Chicago, Los Angeles, New York, Seoul, Tokyo, Lyon, Berlin, Frankfurt <sup>25</sup>	Bangkok, Beijing, <sup>26</sup> Budapest, Guangzhou, Shanghai	Dar es Salaam
Individual Income and Payroll Taxes	New York, Paris, Zagreb, Rome, Milan, Cleveland, Copenhagen, Stockholm	Beijing, Budapest, Guangzhou, Shanghai, Moscow, Riga, Bucharest, Mexico City <sup>27</sup>	Lagos, Dar es Salaam
Sales Tax	Chicago, Los Angeles, New York, Barcelona, Madrid	Bogotá, Buenos Aires, São Paulo, Rio de Janeiro <sup>28</sup>	Manila <sup>29</sup>
Vehicle Tax	Chicago, Los Angeles, New York, Seoul, Tokyo, Barcelona, Madrid, Toronto	Bangkok, Beijing, Budapest, Guangzhou, Shanghai, Lima, Buenos Aires, Santiago, Mexico City, Bogotá	Delhi
Transportation Tax	Chicago, New York, Paris, Seoul, Rome		Jakarta, Cairo
<b>Excise Taxes</b>			
Alcohol Tax	Frankfurt		
Electricity Tax	Chicago, Los Angeles, Rome, Milan	Cape Town, Johannesburg, Istanbul	Delhi, Jakarta
General Excise Tax	Chicago, New York, Berlin, Seoul, Tokyo	Bangkok, Beijing, Guangzhou, Shanghai, Moscow	Jakarta, Dar es Salaam
Gasoline	Chicago, New York, Tokyo, Montreal, Lyon	São Paulo, Rio de Janeiro, Lima, Istanbul <sup>30</sup>	
Green Tax	New York, Paris, Seoul		
Telecommunications Tax	Chicago		

<sup>24</sup> The high-income group corresponds to the high-income OECD and non-OECD countries; middle income corresponds to upper middle-income classification; lower income corresponds to lower middle-income group and low-income groups from the World Bank country classification.

<sup>25</sup> In Germany this is called the Trade Tax.

<sup>26</sup> Chinese cities levy local business taxes in the form of gross receipts taxes and corporate income taxes on any locally owned enterprise.

<sup>27</sup> This is a payroll (wage) tax.

<sup>28</sup> This is a payroll (wage) tax.

<sup>29</sup> These are gross receipts taxes for Bogotá and Manila.

<sup>30</sup> Istanbul charges the “environmental sanitation tax” and it is charged as a sales tax on gasoline.

**Table 8 (continued)**

<b>Tax</b>	<b>High Income<sup>31</sup></b>	<b>Middle Income</b>	<b>Low Income</b>
<b><i>Possibly Bad Choices</i></b>			
Corporate Income Tax	New York, <sup>32</sup> Tokyo, <sup>33</sup> Lisbon, St. Louis, Geneva <sup>34</sup>	Moscow <sup>35</sup>	
VAT	Seoul <sup>36</sup>	Moscow, <sup>37</sup> Bangkok	
<b><i>Miscellaneous<sup>38</sup></i></b>			
Amusement Tax	Chicago, New York, Seoul, Tokyo	Istanbul, Lima	Jakarta, Cairo
Advertisement Tax		Bangkok, Istanbul	Jakarta, Kiev, Manila
Financial Tax <sup>39</sup>	New York <sup>40</sup>		Lagos, Dar es Salaam
Fire Insurance Tax		Istanbul	
Gambling Tax	Chicago, New York	Bangkok, Lima	
Construction Tax	Barcelona, Madrid, Montreal, Milan	Beijing, Buenos Aires (Metro), Bogotá	
Natural Resource Tax		Beijing, Guangzhou, Shanghai	Manila <sup>41</sup>
Slaughter Tax	Seoul	Bangkok, Beijing, Guangzhou, Shanghai	
Stamp Tax		Beijing, Budapest, Guangzhou, Shanghai	
Inheritance and Wealth Tax	Paris	Beijing, Guangzhou, Shanghai	

Source: Martinez-Vázquez (2013).

<sup>31</sup> The high-income group corresponds to the high-income OECD and non-OECD countries; middle income corresponds to upper middle-income classification; lower income corresponds to lower middle-income group and low-income groups from the World Bank country classification.

<sup>32</sup> New York City has revenue and administration autonomy over its budget but all tax laws are passed at the state level.

<sup>33</sup> The corporate enterprise tax is levied as a “corporate inhabitant tax” on corporations having offices or business establishments located within the Tokyo Metropolitan Prefecture.

<sup>34</sup> Both Geneva and Lisbon have a surcharge on the central corporate income tax.

<sup>35</sup> Moscow acts as city and regional government and is allowed to set a surtax on the CIT.

<sup>36</sup> Seoul charges a surtax on top of the national VAT.

<sup>37</sup> Moscow has a VAT surcharge because it is also a regional government (Subject of the Federation).

<sup>38</sup> Some of these taxes, for example the stamp tax, could also be classified among the “bad” taxes above.

<sup>39</sup> In Lagos there is a withholding tax on interest generated by savings. In New York City, however, this is an additional business tax on banks operating within the city. A bank pays an extra percentage of taxes on profits earned while operating in New York City.

<sup>40</sup> New York City levies separately a business tax on insurance companies of 2 percent.

<sup>41</sup> Tax on sand, gravel, and other quarry resources—tax is levied on extractors of listed resources within the territory of jurisdiction, with a limit of 10 percent of fair market value in the locality per cubic meter of resource. The revenue has to be shared with barangays (the equivalent of boroughs) where the resource is extracted (at 40 percent).

How much revenue is raised with those taxes? Very little systematic information is available. The information reported here comes from Martinez-Vázquez (2013), which is based on the actual practices in large urban areas and large cities in a number of developing and developed countries. On the list of “good choice” taxes are numerous examples in developing and developed countries. However, the particular structure of these taxes can often fail to be desirable. For example, in some cases sales taxes take the form of gross receipt cascading taxes (e.g., Buenos Aires); in other cases, instead of individual income taxes, potentially distorting payroll taxes are used (e.g., Mexico City).

The category of “business tax” is frequently used and takes a variety of forms, such as business licenses to operate and levies based on turnover (e.g., gross receipts), or net income, and they receive a variety of names. In the case of Chinese cities, there is both a local business levy, in the form of a gross receipts tax, and a corporate income tax on locally owned enterprises. In the case of German cities, the business tax is called the *trade tax* and is determined by deducting a tax-exempt amount from trading profits and multiplying it by a tax assessment figure, which is usually 5 percent and fixed by a federal law. This amount, known as the tax assessment amount, is then multiplied by the respective municipal tax rate, which has been slowly growing and is close to 500 percent. In the case of Budapest, the business tax is based on sales revenue net of the cost of goods sold, including the costs of materials. The business tax in Seoul is based on the size of real estate property and number of employees, and in Tokyo it varies by the type of business.

Individual income taxes are also present as assigned sources of revenue in a number of cities in both developed and developing countries, but it is not as common as may be desirable. Sometimes this tax takes the form of a surcharge (piggyback) on state or national taxes. New York City, for example, charges a percentage above the existing state income tax being collected from the residents of the five New York City boroughs; Rome and Milan charge an extra 5 percent on top of the national personal income tax. Similar taxes are used in Moscow and Lagos. In Mexico City, a separate payroll tax is levied on residents. In Dar es Salaam, there is a 10 percent income tax on interest earned by residents.

Sales taxes are typically levied at the retail level (Chicago or Los Angeles). However, in Buenos Aires a gross receipts sales tax is added onto the national VAT. Similarly, in Rio de Janeiro and São Paulo there is a gross receipts tax on services. Under “excise taxes,” the international practice includes general excise taxes with levies on the usual variety of excisable commodities, but also on specific goods only, such as alcoholic beverages (Frankfurt) or gasoline (e.g., Istanbul and Lima), or specific services such as electricity (e.g., Cape Town, Delhi, and Jakarta) and phone services (Chicago). Green taxes are pollution charges taking many forms, including carbon emission taxes or taxes on businesses that generate pollution.<sup>42</sup> For example, in Seoul the tax is paid by any business “exploiting natural resources.” In some cases, the green tax is just an excise, as is the case with Istanbul, where the “environmental sanitation tax” is a sales tax on gasoline.

Many cities, especially in developed countries, have also been assigned the motor vehicle tax. For example, in the cases of Barcelona, Budapest, Istanbul, and Madrid, city governments tax the ownership of vehicles by residents based on the value of the vehicle. In Toronto, the personal vehicle tax is a levy on residents of the city who own or lease a personal

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<sup>42</sup> Special taxes on businesses that generate pollution can be difficult to implement. For example, a local cap-and-trade policy is very unlikely to work because an origin-based tax would be anticompetitive and a destination-based tax would be impossible to implement.

vehicle, paid when they renew their vehicle license plate validation. Tokyo charges a tax on the purchase of a vehicle, called the *automobile acquisition tax*. Seoul charges an automobile tax paid by owners of cars based on their use and their capacity. Shanghai, Guangzhou, and Beijing all levy the local level vehicle and vassal utilization tax, which is a tax based on the use of vehicles. A number of metropolitan areas levy a variety of “transportation taxes,” with the proceeds earmarked for the development of transportation infrastructure; for example, Chicago levies a tax on taxi operators based on each cab and its capacity, and in Jakarta it takes the form of a public transportation tax.

There are some other miscellaneous taxes, many of which have been assigned to urban centers around the world. These are taxes that generally offer a good tax handle and that can at times be interpreted as benefit charges, although they generally do not represent much revenue. For example, “financial taxes” take different forms; in Lagos this is a withholding tax on interest generated by savings accounts, but in New York City this is an extra business (profit) tax on banks operating within the city. New York also charges an additional 2 percent profit tax on insurance companies operating in the city. Istanbul has a tax on fire insurance premiums. “Gambling taxes” also take different forms: in New York, the tax is a percentage of winnings; in Lima, a percentage of the original bet; in Chicago, an off-track betting tax; and in Bangkok, a surcharge on top of the VAT being charged on horse-racing bets. “Construction taxes” can take the form of permits to build but also tax the costs of construction. “Hotel taxes” generally take the form of an added sales tax on the hotel bill. “Advertisement taxes” and “amusement taxes” are charged on the use of billboards and the like and on admission to amusement parks, respectively. “Natural resource taxes” are charged on extraction activities, such as quarries. “Inheritance taxes” are applied in Chinese cities and in Paris, and the “stamp tax” and “slaughter tax” are also applied in Chinese cities.

On the list of “possibly bad choices” of local taxes, the assignment of the corporate income tax at the local level is rare. Moscow is allowed to use a surtax on the national corporate income tax in its role as a regional government as opposed to a city government. In the cases of Tokyo, Lisbon, Geneva, and St. Louis, the city governments also have a surcharge on the central corporate income tax. The assignment of the VAT at the local level is even rarer. Three cities—Bangkok, Moscow, and Seoul—have their own surtax on the national VAT.

Overall, the survey of actual practice in the sample of cities shows a wider use of “good choice” taxes in developed countries than in developing countries. The reason that more developing countries do not use good choices of local taxes, such as individual income taxes, business taxes, or even vehicle taxes, has a lot to do with political economy issues. Most important seems to be the reluctance of the central authorities to share or cohabit productive and elastic tax bases with subnational governments. Even though there are some issues with administrative capacity, this seems to be less valid for large urban centers and cities, where that capacity is likely to be present.<sup>43</sup> And in any case, piggybacking on central taxes or allowing for the central administration of local taxes can generally overcome capacity issues related to administration and enforcement.

Information on tax structure is scarce, and whatever is available is challenging to summarize in any reasonable way.<sup>44</sup> Information on actual collections can be even harder to collect. In reality, the tax structures differ in the level of diversification of tax sources. For example, Chicago relies on a dozen different tax sources, each yielding some sizable revenues.

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<sup>43</sup> But note also that there is a marked reluctance everywhere, in both developing and developed countries, for using asymmetric tax assignments, for example, by providing large cities with additional tax sources over those assigned to all local governments regardless of size and capacity.

<sup>44</sup> These data are not shown here for space reasons but are available from the author on request.

By comparison, Lima relies on only two own-tax sources: property taxes and vehicle taxes. The property tax is important in cities like Barcelona or Delhi, but it is not as important in Tokyo, Buenos Aires, or Beijing. The individual income tax is the most important tax source in Tokyo, whereas for São Paulo the sales tax represents more than half of all tax revenues.

**4.3.2 Intergovernmental transfers.** When MAs cannot be financed with broad-based taxes or there is no political will to assign these taxes, the alternative is the use of intergovernmental transfers. The reality is that in the case of many MAs, own revenues are only one part of the budget and intergovernmental transfers figure large and deep in their budgets.<sup>45</sup> The degree of acceptance for the importance of transfers varies among experts, but the reality is that transfers are large and they are here to stay. As long as that is the case, it is important that these transfers are well designed.

In general, intergovernmental transfers are designed in the pursuit of several explicit objectives, and these objectives are also broadly relevant for MAs. The first objective is to close existing vertical gaps, which arise because of the difference between expenditure needs associated with functional assignments and the overall revenue potential from devolved or assigned taxes or other sources of revenue such as fees and charges. This type of transfer typically takes the form of tax sharing arrangements. Despite the fact that MAs are likely to be the most viable local government in terms of own tax revenues—given the concentration of economic activity and tax bases—still they can fall short, and therefore revenue sharing arrangements are likely to be necessary for MAs and perfectly justified.

The second type of grants is conditional transfers, by which upper-level governments implement in turn a variety of objectives, including addressing externalities across subnational government boundaries. A particular type of these conditional grants is capital transfers, which are designed to support the financing of infrastructure projects. Conditional grants—including capital transfers—are very adequate instruments for central and regional governments to support the financing of MAs' budgets. The type of governance model used in the particular MA is likely to affect the level of dependence on this type of transfer. A fragmented model of governance that is associated with the lower importance of own revenues is likely to generate more conditional grants, especially those driven by the objectives of addressing externalities across local government boundaries in the MA.

Lastly, a third type of very common grants is equalization transfers, which are typically unconditional grants distributed across local governments according to a formula that takes into account the difference between expenditure needs and the fiscal capacity of those subnational governments. Because MAs and the local governments that are part of them tend to have large tax bases and therefore higher fiscal capacity, in many cases they do not receive equalization transfers.

Beyond the application of general rules for the different transfers, one can ask whether MAs deserve special or asymmetric treatment from the rest of local governments (Bahl, Linn, and Wetzel, 2013). Note that in the case any subnational government does not receive equalization transfers, it may simply be a consequence of the application of the distribution formula. As we pointed out above, being relatively richer may simply mean that some MAs do not receive equalization transfers, and the same will be true for other non-MA local governments that are relatively richer for some particular reason (for example, they may be tourist resort destinations with ample property tax and other tax bases). However, the very nature of MAs with

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<sup>45</sup> For example, Buenos Aires raises 70 percent of its revenue needs from own taxes. The same appears to be true in South Africa with Cape Town or Johannesburg, but many other MAs are transfer dependent. See Shah (2013).

mass agglomeration and very high population densities may also require special asymmetrical treatment in terms of conditional grants for the development of some types of infrastructure, such as mass transportation systems. It does appear that most transfer systems impose uniform rules in the distribution of funds, thus not providing asymmetric treatment in favor or against metropolitan areas (Shah, 2013).<sup>46</sup>

**4.3.3 Infrastructure financing with borrowing, PPPs, and other avenues.** Large amounts of infrastructure and also more complex infrastructure are crucial to the growth and success of MAs. At the same time, there exists a significant backlog in infrastructure in most MAs, a backlog that in many cases has expanded rapidly with increases in population and new demands generated by fast-rising economic activity and income. On the other hand, many MAs are adding to their infrastructure well below the requirements. In many cases the model of fragmented governance adds to the problem because of the unviability of some financing instruments in those cases. In general, of course, metro-wide MA systems are better equipped to address the infrastructure challenge. (Bahl, Linn, and Wetzel [2013] mention the cases of Johannesburg, Cape Town, and Toronto.)

So the important question is, how to finance the backlog in infrastructure? Where do we find the revenues? Beyond increased own revenue mobilization, generating current saving and increased intergovernmental transfers, the answer lies in using prudential borrowing and more intensive use of public-private partnerships (PPPs) (Bahl, Linn, and Wetzel, 2013).

Borrowing is an efficient source of funds—which have to be repaid later, of course—to finance infrastructure. Since many MAs have large tax bases and potentially can mobilize more revenues, they also have better access to credit. One big issue is the moral hazard associated with the bailout of bankruptcy of some MAs, which has been the case in one form or another in Buenos Aires, São Paulo, and Johannesburg, and more recently in many Chinese MAs (Bahl, Linn, and Wetzel, 2013).

As is the case with own revenues, the type of governance model used in the MA also affects the borrowing possibilities. Thus, with a fragmented model it is more likely that borrowing will have to take place through different forms of public enterprises.

The big hope over the last several decades for increasing the financing of infrastructure projects in MAs has been PPPs. Besides providing additional funding, the promise of PPPs has been to use private sector know-how and expertise to increase efficiency in the delivery of public services. However, this promise has gone largely unrealized. It is reported that PPPs have only made relatively small contributions to urban capital financing in the developing world over the last several decades (Bahl, Linn, and Wetzel, 2013; Alm, 2010). High levels of risk associated with urban infrastructure projects—difficulties with setting tariffs at full cost recovery levels, lack of maintained political commitment by local authorities, relatively weaker management and bargaining capacity in the public sector, and considerable default risk for the government—at least partially explain this lack of success (Ingram, Liu, and Brandt, 2013). In Brazil, the only limited successful experience with PPPs is the case of the State of São Paulo since 2004 (IDB, 2015).

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<sup>46</sup> Sometimes distribution formulas may in fact discriminate against metropolitan areas. For example, in the case of Indonesia the current formula of the large and generous equalization grant system is distributed under the basic assumption that local expenditure needs arise on a similar per district or jurisdiction basis as opposed to an approximately equal need per client of population basis. This means that all urban areas and in particular large metropolitan areas are discriminated against in the distribution of equalization grants.

## 5. Useful Lessons for the Brazilian Context from the Best International MA Financing Practices

The objective of this final section is to provide ideas on how different governance models, finance mechanisms, legislation, and practices from international experience could be adapted and applied in the context of the Brazilian fiscal federalism model to enhance the operational effectiveness of MRs. Even though the focus and interest in this paper has been on improving the financing mechanisms of MRs, we have seen that financing cannot be detached from the other three legs of any intergovernmental finance system: the governance model, the clear assignment of functional expenditure responsibilities, and the borrowing and alternative finance sources of public infrastructure. Thus, our discussion here for the possible avenues for moving forward with the metropolitan finance agenda in Brazil will follow that structure, as we have done in the sections above.

### 5.1 Improving MRs' Governance Effectiveness

Brazilian MRs are characterized by a high level of fragmentation with multiple local governments providing services that do not take into account externalities. The government reform agenda sought with the passage of the Statute of the Metropolis in 2015 to encourage metropolitan-wide cooperation for the provision of services with benefit areas encompassing the entire MR. In our review of international experience, we have learned that two tiers or even single-tier metro-wide governments can be an effective way to address these issues. However, it must be recognized that changing the MR governance structure in Brazil may be next to impossible given the recent—1995—constitutional amendments and the 2015 Statute of the Metropolis.<sup>47</sup> Therefore, moving forward there is a need to look at the metropolitan councils and the other institutions introduced in the Statute of the Metropolis for improving their effectiveness and accountability and then proceed to strengthen their responsibilities and financing.

Given the lack of direct elections or representation in the metropolitan governance model for Brazil, one big challenge will be to find mechanisms to strengthen the accountability of MR authorities to the residents of the entire area. This will not be easy; among other possibilities, it may be feasible to activate the participation of civil society organizations in the oversight of operations.

Cooperation and reaching agreements among municipalities in MRs has happened—as São Paulo and a few other MRs show—but it has been made more difficult because of the presence of disincentives. Getting rid of these political economy disincentives to cooperation must be a reform priority. As has already been discussed, there is an important political economy obstacle to cooperation and reaching agreement among municipalities in the MRs. This is the policy agenda push that finding a solution to MRs' problems can only be accomplished by first dealing with the problem of fiscal disparities and fiscal redistribution within the MR. As we have pointed out, there are huge fiscal disparities within and among MRs. This is due to the very uneven distribution of tax bases and the failure of the current intergovernmental finance system to properly equalize those disparities.<sup>48</sup> These significant disparities have helped

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<sup>47</sup> Consolidation into a single amalgamated government would face the veto of any municipality in the MA. Amalgamation in Canada and South Africa was possible due to the subordinated role that municipalities have in relation to the states (World Bank, 2015).

<sup>48</sup> We have already seen that the latter is the result of the current revenue-sharing formulas and the insufficient equalization in how federal funds are transferred to state and local governments to effectively address fiscal gaps.

very little with inter-municipal cooperation as richer municipalities have little incentive to contribute funds to other municipalities' investment needs outside their own borders.

Creative ways to incentivize cooperation may also be possible. For example, Rezende and Garson (2006) suggest leveraging the conditions to be attached to credit lines from federal financial institutions to finance investments in MRs. They recommend that for those projects in urban infrastructure, the proposals from metropolitan municipalities could be appraised from a collective perspective so as to provide incentives for cooperation. More generally, both federal and state authorities could condition different funds to the cooperation of municipalities at the metropolitan level.

There is also a need to strengthen managerial aspects at the MR level, including administrative capacity and qualification of employees. This will demand training programs, but it will also depend on the ability to pay higher salaries in order to attract qualified personnel.

### *5.2 Clearly Identifying Functional Expenditure Responsibilities for MRs*

We have seen that the main logic for the existence of metro-wide governments is the presence of certain public services and functions with large economies of scale and significant externalities. If their provision is left to the smaller municipalities in the MR, it will lead to significantly inefficient outcomes. Thus, a very important first step is to clarify those functions and services that should be provided metro wide. This clarification needs to be done vis-à-vis the expenditure assignments of the state governments—as well as the federal government—but also, and more importantly, vis-à-vis the local governments or municipalities within the MA. Some of the current practices in Brazil and those in the international experience point to a rather clear list of functions: transport and mobility, urban land planning, sanitation and garbage collection, among others.

In addition, what we have made clear in the paper is that redistribution functions equalizing the spending capacity of the different municipalities within the MA do not need to be—and in the case of Brazil, should not be—included in the assignments of functions for metro-wide government. The equalization of fiscal capacity and expenditure needs of the poorer municipalities within the MR should be performed via equalization grants and other policies implemented by the federal and state governments. As we have also seen, and it is widely recognized, the effectiveness of equalization of fiscal disparities across local governments is limited and needs to be reformed. These deficiencies are present in the distribution of equalization funds for local governments at the federal and state levels. This is one important reason why there has been so much pressure at the MR level for equalization and redistribution within the MR itself. However, as we have concluded, to burden the metropolitan governance with this objective of redistribution has led to more inaction and ineffectiveness in finding cooperative ways to address the proper supply of metro-wide public services.

### *5.3 Enhancing the Financing Capacity of Metropolitan Funds*

The required increase in revenue capacity of MRs needs to come from the reform of tax assignments as well as the reform of the current system of transfers. Any additional tax revenues for MRs need to avoid becoming another burden on federal or state finances, and to the most possible extent should not reduce the revenues available to the local governments in



the MR. This may be difficult because there is a general perception that tax effort is already too high in Brazil (Afonso, Soares, and Castro, 2013).<sup>49</sup>

However, because the MR governance system in Brazil is most likely to remain a fragmented one-tier structure without an elected representative government, we have seen in the paper that there is no strong theoretical rationale for why their activities need to be financed by taxes. As noted, the theoretical link between own taxes and subnational government financing is the increases in accountability and fiscal responsibility that it would accrue. Nevertheless, of course, increased electoral-type accountability will hardly be there if there are no elected representatives heading the metropolitan organization. Therefore, MR funds could equally well be funded with transfers from the federal and/or state governments. On the other hand, assigning new or additional taxes to the Metropolitan Funds can contribute to their revenue sufficiency and this possibility should be considered.<sup>50</sup>

The question is how to increase revenues for the Metropolitan Funds introduced by the Statute of the Metropolis. Introducing own revenue sources will be difficult and it will most likely require constitutional amendments.<sup>51</sup>

International practice provides several alternatives for dedicated taxes to accrue into the Metropolitan Funds:

- To introduce a personal income tax piggyback on all residents of the MR. The tax would still be administered by the national tax administration but with the revenues allocated to the different MRs on a residence basis. Giving discretion on the flat rate to be implemented may make sense if there were to be a representatively elected government at the metropolitan level. Because there is not one, rate discretion may not make sense.
- To introduce a surcharge in the local services tax (ISS) to be paid at the same rate in all municipalities in the MR and to accrue to the Metropolitan Fund.<sup>52</sup> One difficulty with this initiative is that the ISS is locally administered, and it would not necessarily be easy to gain trust that all municipalities would faithfully transfer the receipts from the surtax to the Metropolitan Fund.
- To introduce a surcharge on the state ICMS to be collected in all municipalities of the MR and to be allocated directly by the state to the Metropolitan Fund. In a sense this would be similar to the formula-based sharing of VAT as done for the Harmonized Sales Tax (HST) in Canada. The advantage of this approach, with the state government authorities willing, is that the tax would be collected at the state level and could be directly allocated to the Metropolitan Fund without going through the municipal budgets.

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<sup>49</sup> See, for example, Rezende and Garson (2006).

<sup>50</sup> It is often the case in the international experience that large cities and metropolitan governments are assigned other taxes that the rest of local governments are not. For example, Toronto is allowed the additional taxes of vehicle registration fee, a land transfers tax, and a billboard fee (Slack and Chattopadhyay, 2014).

<sup>51</sup> There have been previous attempts to reform the Constitution in order to facilitate metropolitan financing. As noted in IDB (2015), the proposed constitutional amendment 13 of 2014 by Senator Aloysio Nunes aimed to reform articles 157, 158, and 189 of the Constitution in order to provide MRs with their own resources.

<sup>52</sup> There is also the possibility of introducing a surcharge in the municipal property tax, but it is likely the case that there are larger tax base differences and administration capacity with this tax than with the ISS. Similar reasoning would apply to the property transfer tax.

- An additional possibility is to consider the introduction of certain excise taxes on public utility services. There is significant revenue potential in some of these services, as in the case of electricity and phone and internet services. Besides revenue potential and administrative ease, subnational excises on public utility services are attractive because of the benefit principle; for example, excises on electric consumption and phone services should be in most cases good proxies for the demand of metro-wide public services by both households and enterprises. Compared to other commodities, taxation of public utilities would be associated with relatively low distortions, as most utilities show relatively low price elasticity of demand. In addition, the demand for public utilities has been shown to be income elastic, which brings two additional benefits to this form of subnational taxes: progressivity and revenue buoyancy. Preferably those excises would be administered at the state or even federal level (and paid directly by electricity or telecommunications providers).

The reform of the federal and state transfer systems needs to focus on how to make MRs the direct recipients of some of those funds—that is, without the funds first passing through the budgets of the local governments within the MR, or in the other possible case through the budgets of the state governments.

There is scope for reforming the transfers from the state and federal level to the municipalities in the MRs, which indirectly would facilitate the transfer of funds from the municipalities to the Metropolitan Fund. The current formulas for the sharing of state and federal revenues have a bias against the metropolitan area. As indicated by Rezende and Garson (2006), in the case of the ICMS, metropolitan municipalities generally get a less favorable treatment in the distribution formulas applied by the state governments. Similarly, in the case of the distribution formulas for the Federal Income Tax (IR) and the Tax on Industrialized Products (IPI) going to the municipalities, the criteria applied are biased in favor of smaller municipalities. In the same vein, Rezende and Garson (2006) propose changing the rules for the distribution of the municipal fund (FPM), which currently dedicates only a small fraction (10 percent) for the states' capital municipalities. At the federal level, capital transfers of a one-off nature to fund infrastructure also should be reconsidered for more stable formulas because that approach is not compatible with the long-term nature of most infrastructure projects at the MA level nor anywhere else.

#### *5.4 Facilitating the Financing of Infrastructure*

The financing of large lump-sum amounts of medium- and long-term infrastructure needs to be supported by credit. MR authorities need to be empowered to prudentially borrow for worthwhile and long-lasting infrastructure projects. Notably, the Law on Consortia of 2005 and, more recently, the Statute of Metropolis provide these entities with legal personality standing, which facilitates their ability to borrow. However, the supply of credit may not be there. Besides the prudential measures that restrict subnational borrowing, which given the history of the country are to be welcome, there is a dearth of long-term credit, as private banks have been very reluctant to lend funds to municipalities for long-term infrastructure projects. This is due to the lack of trust in municipal finances, and local governments' lack of credibility and inability to offer adequate guarantees (Rezende and Garson, 2006).

PPPs have often been proposed as an additional financing mechanism for Brazilian MRs, and São Paulo has been relatively successful in using PPPs in several sectors. Certainly,

a lot can be learned from studying international experiences with PPPs and other creative financing methods. See, for example, World Bank (2015).

Moving forward, it will be important to distinguish within each MR between re-distribution issues (equalizing resources for local services delivery including education, health, or housing) and the efficiency issue of how to finance infrastructure and other common-interest projects. Re-distribution issues should be handled mostly through reforms of the current intergovernmental finance system to make transfers from the federal and state governments much more equalizing.

What are the prospects of MR finance reform? The intergovernmental finance system in Brazil is overdue for reform. When that happens, there will be opportunities to address many of the issues with metropolitan financing (World Bank, 2015). However, it is likely the case that Brazil faces many dire needs for enhancing the extent and quality of public services and public infrastructure outside MRs. This may make the metropolitan finance issue less of a priority with state and federal authorities. The recent past also shows that state and even federal authorities may be reluctant to empower MRs and their political leaders, who are potential political rivals (Bahl, Linn, and Wetzel, 2013).

The increasing number of problems hitting MRs in Brazil is likely to increase pressure for reform. Beyond the regular drivers of demand for public services—increasing population, rising incomes, among others—MRs have peculiar needs that will add pressure for achieving reform. Among those are demands to address complex infrastructure problems arising from agglomeration and high population density, the need to compete with other MRs in LAC and around the world to attract foreign direct investment and also to attract and keep a highly qualified labor pool, and in many cases the need to address the growing presence of slums. While there are some reasons MR reform may be less of a priority, the increasing need to compete globally and the visibility of metro-area problems will offer counterbalancing forces to reprioritize MR reform strategy in Brazil.

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## Annex 1. Fiscal Disparity Estimations—Methodology

### 1. Data

We use a public finance and socioeconomic database disaggregated by municipality for the period 2010–14, collected from IBGE-SIDRA and SICONFI.<sup>53</sup> We dropped the year 2015 from the analysis to avoid considering dynamics and trends that may have been affected by the recession that hit Brazil from that year on. All the estimations are calculated using average values (2010–14) for all variables.

We implement several pre-processing steps to correct inconsistencies due to misreporting by municipal governments, resulting in the drop of approximately 5 percent of the total observations. The data used for the fiscal disparity estimations exclude intra-budget revenue.

### 2. Expenditure Needs

The expenditure needs for each municipality are calculated using the expenditure norms per client, based on expenses by function. For each function we select several variables that affect the level of expenditure and explain differences in the municipalities' financing needs. The selection of variables, however, is limited by data availability and quality.

Expense Classification	Variables Included	Variables and Weights
Administrative duties	Administration, legislative, judicial justice, and foreign relationship expenses	Population (2/3) Area (1/3)
Security services	Security and defense expenses	Population
Social assistance	Social assistance expenses	Population (7/10) IDHM* (3/10)
Health	Health expenses	Population (4/5) IDHM (1/5)
Education and culture	Education, culture, rights, and sport expenses	School age 5 to 14
Science and technology	Science and technology	GDP except public sector
Housing and urbanism	Housing and urbanism expenses	Population (3/5) and urbanization rate (2/5)
Water, sewage and sanitation	Water, sewage and sanitation expenses	Population (4/5) IDHM (1/5)
Environmental management	Environmental expenses	Population (9/10) PIB** (1/10)
Labor and social security	Social security and labor expenses	Population (2/5) Retirees + survivors (3/5)
Transportation	Transportation expenses	Population
Economic services	Agriculture, industrial commerce, and communication expenses	GDP except public sector (1/5) Population (4/5)
Energy	Energy expenses	GDP except public sector
Others	Special orders	Debt level

\* IDHM is the Municipality Human Development Index.

\*\* PIB is the Produto Interior Bruto.

<sup>53</sup> See <https://siconfi.tesouro.gov.br/siconfi/index.jsf> and <https://www.ibge.gov.br/>.

The methodology assumes that expenditure needs depend on the target population to be served by each municipality, which varies depending on the purpose of each expenditure (function). The distribution of resources is made according to the proportion of the target value of each municipality with respect to the total (i.e., population of municipality  $m$  with respect to total population). In case there are more variables selected, an index ( $W_j$ ) is created composed of the weighted sum of all the variables (proportion with respect to total). The weights ( $w_{jk}$ ) must sum up to 1.

The weights could be chosen arbitrarily or calculated using other methods. We estimate regressions for each function where the dependent variable is the expenditure by function and the independent variables include the variables selected in the table above.<sup>54</sup> The coefficients of the dependent variables are normalized to make their sum equal to 1.

Finally, we calculate the total expenditure needs by municipality, which is the result of adding up all the expenditure needs by function. The steps taken to estimate the expenditure needs are the following:

**Step 1:** Definition of the dependent variables ( $k$ ) for each expenditure by function (EF) ( $j=1, \dots, 14$ )

**Step 2:** Estimation of the weights ( $w_{jk}$ ) of the dependent variable (DV) ( $k=1, \dots$ ) for each expenditure by function ( $j$ ), in case multiple variables are selected.

**Step 3:** Calculation of the expenditure need by function.

$$EN_j = W_j * \sum EF_m, \text{ where "m" is the number of municipalities}$$

$$W_j = \sum w_{jk} * \frac{DV_k}{\sum DV_k}$$

**Step 4:** Aggregate expenditure needs by function for each municipality

$$EN = \sum EN_j$$

### 3. Fiscal Capacity

The calculation of the fiscal capacity follows two steps. First, we estimate the potential own revenue (for each component) using the municipal GDP per capita as a proxy of the tax bases. Second, we add fiscal transfers per capita (except those related to equalization purposes, i.e., FPM) to the potential own revenue to obtain the fiscal capacity for each municipality. The steps followed in the calculations are the following:

**Step 1:** Revenue potential estimation for each component of own revenues: property tax (IPTU), real estate conveyance (ITBI), tax on services (ISS), fees, and other revenue.

<sup>54</sup> A set of control variables were also used in the regressions and controlled for heteroskedasticity.

The estimated values for each component were summed up to obtain the total revenue potential.

We run four regressions in total. The dependent variables are the own income components (in per capita terms), and as an independent variable the municipality GDP per capita and a set of control variables.<sup>55</sup> As noted, due to the absence of data on the tax bases, regressions are run using GDP per capita as a proxy of the tax base.

**Step 2:** Select the intergovernmental transfers that are to be included in the fiscal capacity calculation. We selected revenue sharing transfers (excluding the one with an equalization objective), compensation transfers, and conditional transfers (excluding voluntary ones).

$$FC_k = Transfers_k + Potential\ Own\ Revenue_k$$

$$FC_{pc_k} = FC_k / population_k$$

The conditional transfers included are: Unified Health System (SUS), Fund for Education (FUNDEB), education salary, Social Assistance Fund (FNAS), Education Development Fund (FNDE), and poverty transfers.

The unconditional transfers included are: participation on the Income Tax (IR), participation on the Tax on the Circulation of Goods, Transportation, and Communication Services (Cota-parte ICMS), participation on the Tax on Property of Motor Vehicles (IPVA), and other shared transfers. Finally, the compensation transfers included were: compensation for export losses (IPI) and compensation for exploitation of natural resources (RRNN).

#### 4. Fiscal Gap

Finally, we estimate the fiscal gap (expenditure needs – fiscal capacity) to assess which municipalities need more transfers to cover the horizontal gap. Next, we calculate the fiscal gap index, which is the proportion of fiscal gap of each state with respect to the total fiscal gap. The fiscal gap index is used as a distribution criterion. The steps are:

- a. If the fiscal capacity per capita > expenditure needs per capita, fiscal gap = 0, and the municipality is not eligible to receive equalization transfers.
- b. If the fiscal capacity per capita < expenditure needs per capita, the jurisdiction is eligible to receive equalization transfers.

$$BF_{pc_k} = \begin{cases} 0, & \text{if } NG_{pc_k} \leq CF_{pc_k} \\ NG_{pc_k} - CF_{pc_k}, & \text{if } NG_{pc_k} > CF_{pc_k} \end{cases}$$

- c. Calculation of the Fiscal Gap Index

$$IBF_k = \frac{BF_k}{\sum_{k=1}^n BF_k}, n = \text{number of municipalities}$$

- d. Transfer amount =  $IBF_k$  \* Equalization Fund

<sup>55</sup> A set of control variables were also included to take into account other factors that might affect the potential revenue of each state. The control variables included were: poverty, illiteracy, unemployment, and mortality rates, and households' access to water and sewage.