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Section 6

INTERGOVERNMENTAL TRANSFERS IN THE BRAZILIAN FEDERATION Evaluation and alternatives for reform Assessment of the Brazilian revenue sharing system

Volume 2 MUNICIPAL SHARE IN ICMS: CRITERIA FOR REVENUE SHARING

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ACCRONYMS

ADCT	- Transitional Constitutional Dispositions Act
CAP	- Constitutional Amendment Project
CF	- Constitution of the Federative Republic of Brazil
CF/67	- 1967 Constitution of the Federative Republic of Brazil
CF/88	- 1988 Constitution of the Federative Republic of Brazil
Cide	- Economic Domain Intervention Tax
CL	- Complementary Law
Confaz	- National Council of Financial Policy
Cotepe/ICMS	- ICMS Permanent Technical Commission
FFEB	- Fiscal Forum of Brazilian States
Fundeb	- Fund for the Development of Primary and Lower Secondary and Basic Education
Fundef	- Fund for the Development of Primary and Lower Secondary Education
GDP	- Gross Domestic Product
HDI	- Human Development Index
IBGE	- Brazilian Institute of Geography and Statistics
ICM	- Tax on Circulation of Goods
ICMS	- Tax on Circulation of Goods and Interstate and Intermunicipal Transport and Communication Services
IOF	- Tax on Financial Transactions
IPI	- Tax on Industrialized Products
IR	- Income Tax
MPF	- Municipal Participation Fund (share in IR and IPI)
Municipal Share	- Municipal participation fund in ICM and ICMS collection
R\$	- Brazilian Real
Sinief	- Integrated Economic-Fiscal Information System
Sintegra	- Integrated Information System for Interstate Operations with Goods and Services
SPF	- State Participation Fund (share in IR and IPI)
SUS	- Unified Health System, the Brazilian Public Health System
TR	- Tax Replacement
VA	- Value Added
VAT	- Value Added Tax

MUNICIPAL SHARE IN ICMS CRITERIA FOR REVENUE SHARING ¹

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INTRODUCTION

This article brings together comprehensive analyses of the tax system and revenue sharing in the Brazilian Federation, developed at the level of the Fiscal Forum of Brazilian States (FFEB)³. Other studies address the problem of the tax system reform by adopting a VAT type state tax, ruled by the principle of destination. This could imply a need to review the criteria for establishing the percentage of municipal revenue sharing in the state VAT (currently ICMS), adapting it to the concepts and suppositions inherent to the new goods and services taxation system, as well as inserting it in the Federation's revenue sharing system.

The municipal share of the state tax ICMS is the most significant component of vertical flow in the Brazilian revenue sharing system. Its rounded value in 2006 was of 25% more than the Municipal Participation Fund (MPF), whose base for calculation is made up of the federal collection of IR and IPI. In total, in the same year in Brazil, the municipal share corresponded to 21.8% of the total of current municipal revenues, while MPF represented 17.4% (STN, 2006).

The goal of this text is to analyze this important source of resource transfer in the Brazilian Federation. Firstly, the system in force is analyzed in two dimensions: one of them analyzes the imposing fraction of the municipal share; the other, the autonomous fraction, as the one regulated by state law is known. This will allow for the conceptual, legislative and operational aspects which rule this revenue distribution to be identified, as well as the problems and distortions in the valued added criteria. Following on, an analysis of the criteria adopted by

¹ The partial or total reproduction is authorized with appropriate citation.

² Collaborated with the discussion and state legislation survey: Edna Nazaré Cardoso Farage (Pará) and Maria Roseana de Carvalho Soares (Pernambuco).

³ Federalism: An Introduction, by George Anderson (Oxford University Press, Toronto, 2008) offers a quick overview of the Brazilian federal structure that may be useful for the understanding of this work by those not familiarized with Brazil.

the states for the fraction provided for by state norm, attempting to typify and point out the nature of the variables to which the criteria are bound.

Through these elements, alternative scenarios are pointed out, which allow for the resource transfer system to be improved – that for practical terms we will simply call the municipal share -, remembering that it can be done in two ways: in the imposing and autonomous fraction. Among the alternatives under discussion is the adoption of each municipality's consumption and population as a calculation criterion for the ICMS municipal participation coefficient in force or the state VAT.

1. CHARACTERISTICS AND BACKGROUND OF THE MUNICIPAL SHARE

1.1 Characteristics

Keeping in mind that one of the aims of vertical transfers in federative systems is to increase the expenditure capacity of subnational governments, so they may provide the services they are charged with – after all, tax collection is generally concentrated at the federal and state government levels -, it is useful to verify that the context of the municipal share is inserted in the basic typology of resource transfer systems in the Brazilian Federation.

A transfer system may have redistributive and return roles, funding national and voluntary programs, as specified in other FFEB studies. We are interested in verifying the characteristics of fiscal return, as a result of its straight link to the current ICMS municipal share system.

The main characteristics of fiscal return is that each jurisdiction receives from the higher government level, which holds the taxing power, a quantity of resources directly from the tax collection at the respective jurisdiction. In other words, in a fiscal return transfer, the central government holds the taxing power (including the collecting role) for efficiency and simplification purposes, generally unconditionally transferring to the subnational government level, resources which could have been collected in its jurisdiction, if it had the taxing power.

The main fiscal return transfer in the Brazilian revenue sharing system is the imposing fraction of the municipal share of the main state tax, the ICMS, shared through a value added criterion. According to the 1988 Federal Constitution, the municipal share of the ICMS is of 25% and at least 75% of it should be distributed in the proportion of value added operations over the circulation of goods and services in the territory. In this category, fiscal return also fits in the municipal share of the following federal and state taxes:

- Rural Property Tax (ITR) – 50% of the ITR collected over the real state property in the territory belongs to the municipalities;
- Tax on financial transactions (IOF) – 70% is transferred to the municipality where the operation originates;
- Tax on Automotive Vehicles (IPVA) – 50% of the state tax on vehicles licensed in their territory belongs to the municipality.

The importance of the ICMS revenue sharing criterion is made evident by the fact that the municipal share coefficient is also used to transfer, among municipalities, the following grants:

- IPI Export Fund (FPEX) (CF, art. 159, II, paragraph 3);
- Budget Fund for compensations from ‘Kandir Law’ (CLs 87/96, 102/00 and 115/02; CF, art. 91 from ADCT); and
- Budget Fund for Assisting Exporting States, transferred since 2004 (regulated by provisional measure, which then became law).

These Funds are analyzed in Volume 3 Section 6 from FFEF, as they are characterized as compensations and not returns. It is important to mention that 25% of the amounts transferred to the states in relation to these funds, are transferred to municipalities according to the same participation index used for the ICMS municipal share. The logic behind this is that for all effects, compensatory transfers are a peculiar type of return, as the legislation ensures that states have a right to this revenue, lost in exports fiscal burden reduction. It is as if the state governments ceased collecting possible revenue and the federal government compensated them for this.

1.2 Brief background of the ICM and ICMS municipal share

The return type revenue sharing system was instituted by the 1967 Tax Reform for the main consumption tax, the then created Tax on the Circulation of Goods (ICM), under the states’ taxing power. It was then defined that 20% of this tax was to be transferred to municipalities, with the shares being credited within the deadline and in the manner provided for by federal law.

Only in 1972 did the military government edit Decree-Law number 1.216/72, regulating the constitutional device of the municipal share. The most relevant aspect of the norm was

instituting the VA concept as a revenue sharing criterion, based on economic-fiscal information provided by taxpayers. The municipal share should be distributed proportionately according to the VA by operations on the circulation of goods in each municipality's territory. It was specified that the VA in the fixed period could be calculated by the difference between the value of outgoing and incoming goods. These incoming and outgoing operations should constitute the taxable event, even when: the payment of the tax is anticipated and deferred; the tax was reduced or excluded due to exemption; when operations are not subject to taxation such as the case with books, newspaper and periodicals, as well as the paper on which they are printed (art. 19, item III, letter "d" of CF/67) as well as operations involving industrialized products for export and other cases specified by law (art. 23, paragraph 7 from CF/67).

Until Decree-law number 1.216/72 was edited, there was no federal norm which regulated the criterion for the ICMS municipal share. As there was no federal norm regulating how distributions were made and deadlines for them, the municipal share became fragile and each state adopted the criterion more convenient to them. There was a lot of political interference and lack of information on behalf of City Halls, as well as technical, functional and operational problems: in short, there were few clear cut criteria which allowed a lot of discretion on behalf of governors. However, somehow there was some parameter for the tax collected by the state at the municipal level, effective mirroring the return of resource to municipalities; something similar to what the result would be if the municipality itself could charge its own ICM. There was no redistributive connotation involved. Possibly, some states implemented more sophisticated mechanisms before the referred decree-law. For example, it was possible to ascertain that since 1968 in the state of Paraná, although precariously and with political and operational problems, the ICM municipal share was distributed based on participation indexes, calculated by the taxed and non-taxed operations of the ICM. Therefore, these aspects distinguished the distribution of the municipal share in Paraná as if a withdrawal was being made at the teller's counter in a bank.

From 1972, with the development of the VA concept, revenue sharing started to benefit municipalities with bigger economic base, in particular those with a more developed industrial base, triggering a 'war' between municipalities for investments from industrial sectors. According to GARCIA (2002, p.24),

This model suffered a lot of criticism throughout the 1970s, notably in relation to the concentration of resources in municipalities already favored in terms of

revenue generation, in prejudice of municipalities with an agricultural economic base, services or even those with a small commercial base.

The specified VA, very similar to the one used today, approaches the gross profit concept by considering taxed and non-taxed operations in the calculation, awarding municipalities in cases where a significant part of operations carried out in their territories do not result in ICM (until 1988) and ICMS (ever since 1989) being collected. Therefore, the return transfer type of the municipal share became something which is no longer 'returned' to the municipality where the tax was collected, but follows a criterion based on the economic result generated by companies that have set up shop in the municipalities and are liable for this tax. However, this aspect does not mean that the municipal share loses its return nature characteristic.

An interesting peculiarity is that although 100% of the municipal share was based on the VA, there was nothing hindering the adoption of other criteria, as long as a tax agreement was reached for a determined length of time, signed as a result of an agreement by **all** municipalities of the state (art. 11 of Decree-law 1.216/72). The participation coefficient of each municipality was obtained between its VA and the state's total VA in the two fiscal years immediately previous to the determination period, procedure in force until today.

In 1980, an important alteration to the municipal share system was made when Constitutional Amendment 17/80 determined that up to 25% of the revenue sharing criterion could be the object of free disposition from state law. Respecting the minimum of 75% for the VA, the states started to enjoy certain autonomy to include other variables in revenue sharing. Thus, since the constitutional amendment came into force, with 25% of the share in revenue being regulated by autonomous state norm, this share could assume several characteristics, such as redistributive, redistributive/compensatory, redistribute/intergovernmental cooperation or return even. The criteria for the municipal share became hybrid and continue to be so until today.

Gradually, after Constitutional Amendment 17/80, many state laws regulated the distribution criteria for the ICM and ICMS municipal share. The states began adopting criteria bound to economic, social and environmental variables, as well as others in an attempt to soften the inevitable concentration related to the VA criterion, as it can be verified in the present text, in the section that addresses the criteria adopted by state legislations. For example, the State of Espírito Santo regulated Constitutional Amendment 17/80 in 1982 and Paraná only from 1987

onwards, including in the state norm, variables such as population, number of rural real estate property, area and linear⁴.

After the 1988 Constitution, the share of the now ICMS earmarked for the municipalities went from 20% to 25%, provided for in article 158, clause IV, using the same revenue sharing criteria as Constitutional Amendment 17/80. Thus the CF establishes that from the collection of ICMS, 75% is earmarked for the state and 25% for municipalities, whose values will be transferred based on the participation indexes verified, according to the following criteria: minimum of 3/4, in the proportion of the value added on taxes on the circulation of goods and services in their territories and up to a 1/4, according to provisions in the state law⁵. In other words, the imposing fraction was kept at 75% (minimum) for the valued added criterion and at 25% for criteria established by state law.

In 1990, CL 63/90 regulated article 158 of CF. paragraph 1 of article 3 of this law was altered by CL 123/06, establishing that ‘in the possibility of simplified taxation referred to in the sole paragraph of article 146 of the CF, and in other situations where the incoming controls are discarded, the percentage of 32% (thirty-two percent) of the gross revenues will be considered the value added’.⁶

It is felt that some clarification is needed. With Constitutional Amendment 14/69, Fundef was created. As a result, from 1998 to 2006, 15% of the ICMS municipal share was withheld for this fund, which together with other sources made up the fund’s total resources⁷. It is important to point that from a financial point of view, the amount of ‘net’ resources distributed are of 21.5% for the referred period, done so in consonance with the VA criteria and other criteria established in state legislations. In other words, 15% of the share is withheld

⁴ The ‘linear’ criterion distributes a determined proportion of the share in equal parts among all municipalities of the respective state.

⁵ CF, art. 158: “It Belongs to Municipalities: [...] IV – twenty-five percent of the State tax revenue for the circulation of goods and interstate, intermunicipal transport and communication services. Sole paragraph. The shares of revenue earmarked for Municipalities, mentioned in clause IV, will be credited according to the following criteria: I – a minimum of three quarters in the proportion of the value added on taxes on the circulation of goods and services in their territories; II – up to a quarter according to provisions in the state law, or in the case of territories, federal law.”

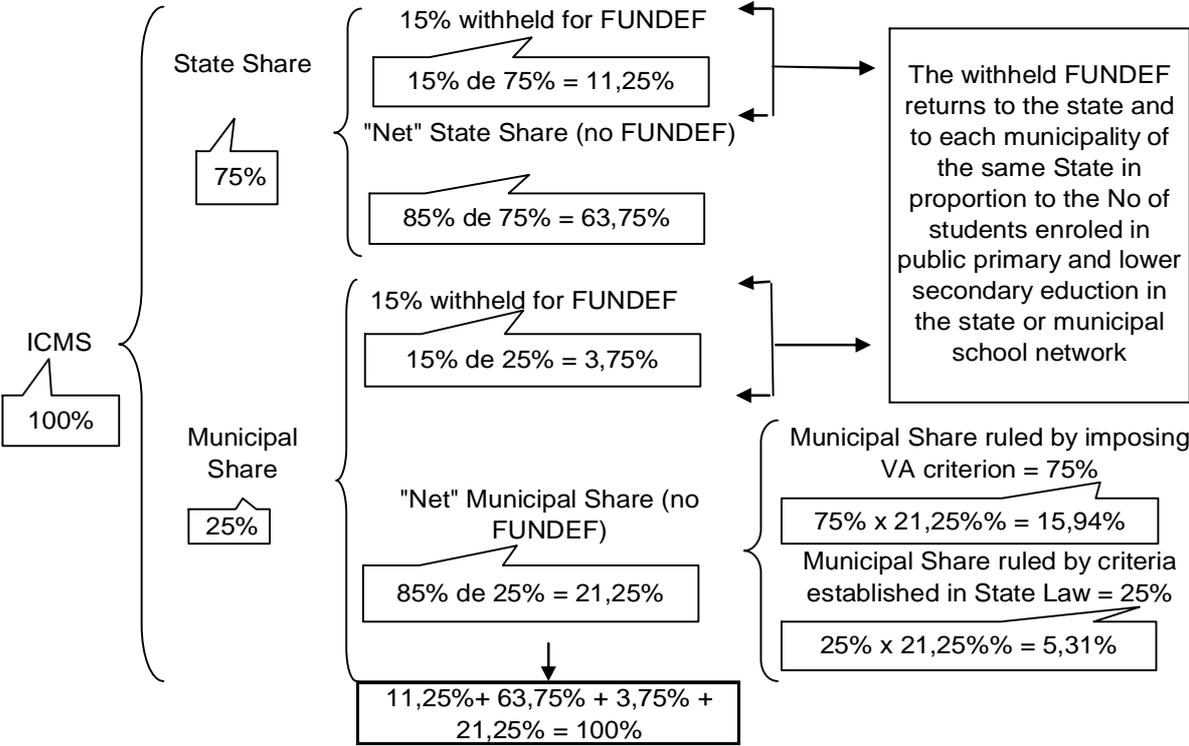
CF, art. 161. “The complementary Law is charged with: I – defining the valued added for purposes of what is provided for in article 158, sole paragraph I; [...]”.

⁶ LC 123/06, art. 87: “Paragraph 1 of art. 3 of Complementary Law 63 from the 11th of January 1990, comes into force with the following text: Art 3 paragraph 1: The value added will correspond for each Municipality: I – the value of outgoing goods, plus the value of services in their territories, minus the values of incoming goods, in each civil year; II – in the possibility of simplified taxation, to which the sole paragraph of article 146 of the Federal Constitution refers to and in other situations where incoming controls are discarded, 32% of the gross revenue should be considered as the value added share.”

⁷ Withholding for Fundef reaches 15% from the following sources: ICMS state share; State Participation Fund, state share in ‘compensations’ from ‘Kandir Law’; ICMS municipal share; Municipal Participation Fund;

for the Fundef (3.75% of the total ICMS tax collected) and proportionately shared based on the number of students enrolled in primary and lower secondary education of public state and municipal school networks. The difference of 21.5% (25% x 85%) was distributed to municipalities based on criteria for the municipal share.

Graph 1 facilitates illustration
ICMS intergovernmental revenue sharing



Source: authors

To sum up this section, the municipal share was rigorously a return transfer at the beginning (bound to total tax collection or even as if a withdrawal was being made at the teller’s counter in a bank). From 1972 onwards, it started to be 100% distributed based on the VA criterion, similar to a return characteristic, as a criterion for legislation over the tax was achieved. Notwithstanding, even if the VA criterion does not correspond to an ideal definition of a return, it has all its basic properties. The distribution started to be based on the local economic activity, where the ICM (and after 1988 ICMS) was applicable, characterizing the share as a return and therefore, non-redistributive. From 1980, with the VA weight reduced to

Municipal share in the IPI Fund for exports; municipal share in ‘compensations’ from the ‘Kandir Law’ and supplements from the Union (several sources).

75%, the municipal share begins to show hybrid characteristics, but still presents return aspects due to the VA's weight.

2. CURRENT SITUATION OF THE MUNICIPAL SHARE

2.1 Criterion determined by federal complementary law – value added

In this section, the imposing fraction of the municipal share, regulated by complementary law, from the conceptual, normative and operational point of view, is analyzed. Its tendency towards spatial concentration is also discussed, related to the criterion which regulates the distribution of the principal fraction of the municipal share, at a minimum of 75%, which is the value added. It is a necessary assessment so that we may distinguish between alternatives for the VA, keeping it or not, and if so in what proportions and conditions.

2.1.1 Operational aspects for calculation

According to CL 63/90 art. 3, paragraph 1, the value added of each municipality will correspond 'to the value of outgoing goods, added to the value of services rendered in its territory, deducting the value of incoming goods, in each civil year'. Paragraph 2 of article 3 establishes that

for effects of calculation of the value added, the operations and provisions which make up the taxable event will be computed, even when payment is anticipated or deferred, or when the tax credit is deferred, reduced or excluded due to the exemption of other benefits, incentives or fiscal favors; [such as] tax exempt operations, according to item 'a' and 'b' of clause X of paragraph 2 of article 155 and item 'd' of clause VI of article 150 of the Federal Constitution.

Therefore, the VA mirrors the municipality's economic movements only in cases where the ICMS is applicable. It is obtained through information provided by taxpayers registered in the tax register, monthly or annually, depending on the state. Some operations made by natural people or legal entities not registered in the taxpayer register, are also considered for calculating the VA, as long as they qualify as ICMS taxable events, as is the case with journalism companies, rural producers (when not registered) who trades his/her own production and municipal water supply companies. Tax assessments recorded by the state fiscal authority are also part of the calculation, due to operations omitted by taxpayers in their fiscal bookkeeping.

In this case, the operations are computed to the VA in the same year the result of the fiscal suit becomes definitive, as the administrative decision is unappealable.

Consequently, the calculation for the VA is made based on the effective value of the operation; in other words, what Sinief denominates the ‘book value’ of incoming and outgoing operations declared by taxpayers, which includes taxable and non-taxable operations.

Here, it is useful to mention specifics for calculating the VA, as the case of some fiscal operations not computed. The acquisition of fixed assets and assets for the use and consumption of companies are not included, as they are assets that have already had their final destination (for company investment or consumption); in other words, assets that are not acquired with the aim of (re)selling or transformation. As a result, any disposed asset or used or consumed (used) assets are not computed. Furthermore, disposals that do not qualify as a commercial operation are not considered, such as a simple remittance for storage, industrialization, fares and exhibitions.

It is worth mentioning that CL 63/90 does not refer to inventory. In many states, the VA is adjusted to consider inventory variation, counting the opening inventory at the beginning of the base year, to which the information refers to, and deducting the difference from the final inventory at the end of the fiscal year.

Hence, the VA index is reached based on the value added obtained by the companies in each municipality (VAM) and the total value added of all companies in the state (VAE), in the two fiscal years immediately previous to the determination period. As determined by CL 63/90, the value added index considers the average of the two civil years immediately prior to the determination period in order to avoid accentuated variations. The result is multiplied by the weight assigned to the value added criterion on behalf of the respective state (which should be at least 75%)⁸, obtaining the Municipal Value Added Index.:

$$IVAMi = [(VAMi-3 / VAEi-3) + (VAMi-2 / VAEi-2)] / 2 * \text{Weight of VA criterion}$$

where:

IVAMi = Municipal Value Added Index year i;

VAMi-3 = Municipal Value Added Index year i-3;

VAEi-3 = Municipal Value Added Index year i-3;

VAMi-2 = Municipal Value Added Index year i-2;

VAEi-2 = Municipal Value Added Index year i-2.

⁸ Some states adopt weight over 75%, according to state norm.

2.1.2 Conceptual and operational problems

What follows are comments on some of the difficulties and problems to determine the VA. The objective is to determine some issues that, as they are not clearly defined by CL 63/90, hinder the interpretation and harmonization of the VA calculation and end up generating a number of controversies with municipalities, which has taken several decisions to court. These comments are mere examples, as they do not exhaust the subject, which would need a different study. Notwithstanding, they are aspects which help to clarify the problem.

VA from electric power generating companies

CL 63/90 does not establish how the VA obtained from the power plants should be distributed. Some states believe that the VA obtained from a power plant should be assigned in its totally to the municipality where the power is actually generated, based on the principle of the taxable event taking place locally. Other states believe that the contribution of municipalities involved in the power generating process should be considered, due to the volume of water accumulated in lakes (in other words, the raw material for power generation) in their territories and adopt the flooded area as parameter. This has created an ‘industry’ of legal disputes in municipalities, leading to several different court decisions, which in turn has paved the way to different criteria for distributing the VA obtained from power plants in the same state being established.

VA from electric power transmission companies

Although the transmission of energy is an ICMS taxable event, there is great difficulty in identifying where the beginning of the transmission took place. Some states appropriate the VA for transmission only to municipalities that have transmission substations, based on the fixed assets value, parameter that has no relation to the taxable event of transmission. There are states that distribute the VA from transmission equally among all municipalities, while others do not even consider it.

VA from companies that produce fuel and derivatives

Here, the problem is of a conceptual nature. The so called ‘refineries’ accentuate far too much the concentrating characteristic inherent to the VA criterion. In this case, the paradigm ‘small municipality versus big plant’ fits well. In general, municipalities that are home to oil refineries, also concentrate the majority of fuel distribution companies, increasing the level of

concentration even more. It is also difficult to identify to whom the VA, obtained in oil exploration in platforms in territorial seas, belongs.

VA from service rendering, communication, electric power distribution and water supply companies

The general rule is that the VA is computed in consonance to the municipality where the service or product is delivered, procedure adopted by the identification of the addressee on invoices. The fact that this procedure characterizes a typical case of VA appropriation at the place of consumption draws attention, which could indicate that this is not a VA concept, but a variable included in the concept of consumption, subject also analyzed in this paper.

VA from companies with more than one establishment

A frequent problem is questioned by municipalities in relation to the appropriation of the VA from companies that have headquarters and branch/branches in the state. The VA tends to concentrate on the establishment that engages in the sales operations, instead of those that engage in operations of goods transfer (or that operate only as a warehouse) and hence practically no VA is obtained.

VA with negative result

Logically, this occurs in companies where the values of inflows are greater than the values of outflows. Regardless of the values being significant or not, it involves a conceptual aspect of whether it is pertinent to compute the VA as a negative result to reach the total VA for the municipality. CL 63/90 does not contemplate this aspect, requiring alteration to provide for such hypothesis, so that an understanding may be reached.

VA from companies in the simplified tax system

Taking CL 123/06 into account, the *Simples Nacional*, the Brazilian simplified tax system, and considering the different systems in the states, it has been difficult to obtain essential elements for the adequate calculation of the VA. This occurs because in these systems, the tax is charged over billing, and not by the common debit and credit system. In the *Simples Nacional* for example, a margin of 32% is added to the gross sales value of all operations made by taxpayers who choose to use this system. This gives a different characteristic to the VA concept, as obviously, the VA margin differs from one company to the other. This issue is analyzed further in Annex II.

VA and the tax replacement system (TR)

In this case, there is no inconsistency in the VA concept, but an operational difficulty resulting from the ICMS TR system. In the case of TR of subsequent operations, the book value of operations in this system, have the value of the taxpayer's operation, plus the ICMS of the replaced operation or operations. In order to allocate the VA to the correct municipality, the book value declared needs to 'decontaminated' by the replacement, removing the ICMS of the replaced operation. The opposite occurs with the so called TR of previous operations, the so called deferment system, where the incidence of tax is moved to a posterior stage of the production or commercialization chain. In this case, the book value of the deferred operation does not incur ICMS, as there was no incidence; thus, the value of the operation is lower than if it was subjected to the common ICMS tax system. No operational adjustment can be made on the VA calculation.

It is worth mentioning that the TR system affects the allocation of the VA, as in the case of municipalities with significant agricultural base, as the deferment system is frequently used in the commercialization of primary products.

In fact, it can be seen in abovementioned examples, that CL 63/90 does not provide all the necessary elements to calculate the VA for certain activities. There is a lot of room for interpretation, which has exposed the states to many legal disputes, generating legal insecurity. Several unusual ways of trying to divert the concentration of the result of a production variable have been attempted.

The problems highlighted may or not have its operational complexity increased as a result of the very nature of the tasks bound to the calculation of the VA. The diversity and complexity of the information required for the calculation demand constant enhancement, as is the case with information technology, auditing of information supplied by taxpayers, standardization of procedures, etc. Developing mechanisms and instruments to improve quality, transparency and control of several data bases, which integrate the calculation of the ICMS municipal participation coefficient is a constant task.

On top of the difficulties to calculate the VA, as well as the exemplified conceptual frailties, it is important to observe that it is inherent to the return characteristic of this transfer, the possibility of oscillations accentuated in the VA, as it is a variable that suffers not only economic pressure, but also climate, as is the case with agricultural activities. The high weight of the VA in revenue sharing stops oscillations from being reduced by other criteria; this can generate instability in the municipal resource flow, possibly compromising the financing of

public policies, according to the weight of the share in the composition of the municipality's total revenue.

As the VA is bound to the place of production, in other words, it is a variable ruled by the principle of origin, it has triggered a 'fiscal war' for investments, as frequently occurs between states in relation to the ICMS. Not always do municipalities compete to increase their VA in a virtuous way. They concede fiscal benefits to attract companies, feeding other battles in this war, compromising tax collection and the neutrality of taxes that interfere in competition among companies.

2.1.3 Critical assessment – tendency to concentrate

An important issue in assessing the VA is the tendency it has to concentrate in determined geographic areas. From the conceptual perspective of tax obligation, it has to do with the territorial aspect of the ICMS incidence hypothesis, where the 'taxable event' takes place. Some of the main criticism directed at the VA is that it has led to a very elevated coefficient result for certain municipalities with relative low population, generating an unusually high per capita municipal share.

Without a doubt, all states have extreme examples. Among many of the indicators that can be developed, the one that expresses the municipal share in per capita terms is useful. This and other indicators are analyzed in section 2.3, after the analysis of the criteria adopted by states and established in the respective state legislations.

Going back to the discussion about the concentration of the VA, the factor which explains this trend is the nature of the variable itself, bound to the place of production and not for example, the place of consumption or residence of population. The VA maintains a relation with the principle of origin, while consumption maintains a relation with the principle of destination, as discussed further in a specific section of the present paper. Thus, a different discussion stream takes place at the level of the reform proposed for the state VA, which among other aspects, involves the adoption of the principle of destination in appropriating tax collection of interstate operations.

When the ICM came into force in 1967, the interstate jurisdictional coordination was ruled by the principle of origin, so the criterion for the VA was adjusted to the tax logic. The ICM and then the ICMS, gradually migrated throughout the years to a mixed system, called of restricted origin, with the aim of sharing revenue among states, by adopting differentiated interstate tax rates, lower than those practiced in intrastate operations. Therefore, in practice, through the interstate rates, automatic revenue sharing among states was achieved, bound in

part to the place of production and in part to the place of consumption. In other words, partially ruled by the principle of origin and partly, by the principle of destination. It was observed that in the old ICM, the revenue of tax collection in the state already had a significant relation to the place of production, but also with the consumption in each state.

After CF/88, the ICM became the ICMS and the system tended towards the principle of destination a bit more, as from 1989, interstate ICMS rates were reduced even more for outgoing goods from the South and Southeast (except Espírito Santo) to the North, Northeast, Midwest and Espírito Santo. Notwithstanding, the CF/88 did not modify the VA variable, with a minimum weight of 75% for the ICMS municipal share. Needless to say that the variable kept had a straight, distinguishing, not to say integral relation, with the principle of origin.

Another aspect which altered the configuration of the ICMS quite a lot in the CF/88 was the increase of its incidence field, adding important contributive bases to the tax. The tax also started to apply to electricity, fuels and minerals, as well as interstate and intermunicipal transport and communication services, which until then were under the taxing power of the Union. In fact, the prior taxes paid to the Union ceased to exist. In 2005, 42% of the total of ICMS revenues in Brazil came from the energy, fuel and communication sectors, the so called 'blue chips' of the ICMS. They are economic activities which have an elevated weight in the economy and particularly in the case of electricity and fuels, have highly concentrated production. Consequently, the criterion based on the VA started to show an even bigger tendency to concentrate than when the ICM was in force.

As the margin to reduce the concentration of the VA is of only 25% (autonomous state norm), it has been alleged that it is not enough to decrease the concentration of the ICMS among municipalities.

For the concentration of the VA to be minimized and for a certain legislative gap to be filled, the VA of certain economic activities has been calculated with a mixed criterion, bringing consumption characteristics to the VA variable, conceptually bound to production. For example, this is the case of the VA in the electric power distribution sectors, water supply and communication services, whose calculation is not being done based on the principle of origin, but on the principle of destination, as previously analyzed. For these activities, the VA started to be appropriated by the place of consumption, in a fragile way, as it depends on the interpretation given to CL 63/90, which as we said, is not detailed enough to back up and harmonize certain procedures which the states have been using.

Next, an analysis of the criteria adopted by the states for the autonomous fraction of the municipal share, as it is understood by the state law that regulates it. By this, we intend to provide a complete assessment of the criteria and then, verify some results for the year 2006 and start the section which addresses alternative solutions for sharing the revenue.

2.2 The criteria regulated by state law

In this subsection, the system for the municipal share ruled by the revenue sharing criteria is analyzed, established in state norm as 25% maximum, adopted in the old ICM – from 1980, when the autonomous fraction was inserted for alteration -, and until today, regulates the municipal share in the ICMS.

2.2.1 Role or characteristic of fraction regulated by state law

We have seen that the municipal share was originally a fully return transfer and that it progressively moved away from this pure return format. In 1980, an important measure did in fact turn the municipal share into a hybrid device, made up of a major part (75%), which kept its registered return characteristic and the other 25%, which had its distribution decided by state law. This measure was basically a way of reducing the rigidity in the criterion for allocation of this important resource flow, enabling states to adapt its distribution to the specific needs of their internal economies and/or priorities they deemed more relevant.

It is important to remember that contrary to the rest of Federations in the world, in Brazil, states do not have administrative and financial control over their municipalities. Thus, also contrary to other Federations, the transfers from states to municipalities, until this measure was approved, were basically free, without the state government being able to interfere in its use. Therefore, the state share is an isolated case in our Federation, as it allows state governments to interfere, in some way or other, through state law, in the destination of part of municipal resources. This is valid, even when considering that establishing resolutions in state law, is the task of legislative assemblies, where municipal forces are also present through municipal associations.

The Constitution does not establish any restriction to the choice of criteria by state law. The state may decide on highly redistributive criteria, benefitting poor municipalities, or they may simply choose to replicate the VA criterion, with the 25% being added to the 75% under a unified criterion at the national level. Therefore, as it is an autonomous state norm, the criteria may have several characteristics, as verified below.

2.2.2 Analysis of criteria adopted by the fraction regulated by state law

It is useful to submit the analysis of the criteria adopted based on the fraction regulated by state law to a methodology bound to some conceptual logic and ordinance. Hence, empirical interpretations, merely descriptive analyses and excessive details of the criteria adopted are avoided. The analysis involves many dimensions. Depending on the objective, the criteria may be separated according to its link to economic, social, fiscal, environmental and other indicators, in a type of sectoral classification. In this case, the ‘agricultural production’ criterion is an economic variable, while the ‘preservation area’ criterion has a string of environmental component. The classification presented here is merely practical, as in some cases the criterion may be seen in more than one way. They are rarely ‘pure’ and as a result may have more than one classification.

That said the choice was rechanneled to the typology of intergovernmental transfers which have backed up FFEB studies since 2005 and is proposed by PRADO (2003a and 2003b). Thus, the criteria adopted by states were organized according to the following classification:

- Criteria for returns;
- Redistributive criteria;
- Redistributive/compensatory criteria; and
- Redistributive criteria bound to intergovernmental cooperation programs.

This paper has shown that the role of return criteria (fiscal return) is of distributing resources in consonance with each jurisdiction’s economic capacity, in close correlation with the development level of income generated in its economic space.

As a general rule, the redistributive criterion is every criterion which does not have a fiscal return characteristic. It aims at transferring the value which the entity would not obtain if it held the taxing power itself. Most of the times, it attempts to reduce inequalities in expenditure capacity between jurisdictions where inexpressive economic activity does not allow for quality public services to be rendered. It brings per capita revenues closer between places, situation where the redistributive criterion has an equalizing role. However, it is important to remember that not all redistributive criteria reduce disparities.

As a result of this, as well as the variety in criteria adopted by states, a subdivision was adopted for criteria with redistributive/compensatory characteristics and intergovernmental

cooperation/redistributive features. Compensatory criteria directly part of the share to compensate negative impacts in the municipal economic base or award certain practices and behaviors. Here, the so called intergovernmental cooperation criteria are those associated with the health and education sectors, in the form of intergovernmental transfers for expenditure in the Fundef and Fundeb (education) and SUS (health) programs.

In relation to the flexibility inherent to the autonomous portion and the variety of criteria adopted by the states, the predominance of some variables was identified. Table 1 shows the typology result with the criteria adopted by the states, identifying also the weight of each criterion for the group of states. In order for the degree of importance of each country average to be visualized, a variable had to be elected which enabled the criteria to be weighted. Thus, the average of the groups of states was obtained weighting each criterion against the ICMS collected in each of the 26 states. This allowed for the proportion of the municipal share ruled by the Brazil average criterion to be verified in financial terms. This procedure was chosen because the calculation of arithmetic averages (simple) was not deemed opportune. For example, it would not be adequate to calculate the arithmetic average (simple) of the population criterion of states as different as São Paulo and Amapá. Obviously, it is the variable itself that is adjusted to the weighted population average; however, for criteria such as reverting child mortality rates, preservation areas and garbage collection and treatment, among many others, it would be very difficult to gather information on all 26 states. Therefore, the choice was made for the collection of ICMS, as it seemed to be the most adequate information as a common reference for the calculation of weighted averages.

It should also be informed that this subsection addresses only a fraction of the municipal share regulated by state law. In this way, the 25% maximum, earmarked by the Federal Constitution to be regulated like this, here is equivalent to 100% of the state norm and thus, are expressed in the percentages on the table and in the descriptive analysis. First of all, the criteria are analyzed as a result of the average for the group of states that adopt them (total country average); following his, the comments are made per state, so that peculiarities may be better verified.

Table 1 – Typology and proportion of criteria regulated by state law for the ICMS municipal share

Typology and Summarized Description of Criteria	% of Fraction Regulated by State Law *
a) Returns:	6.6%
Value added **	6.6%
b) Redistributive:	67.0%
Population	30.7%
Linear	19.5%
Geographic area	9.4%
Planted area	4.1%
Number of rural properties	2.7%
Opposite of population, area and value added indexes	0.6%
c) Redistributive/compensatory:	20.9%
Own revenue	8.6%
Bound to the environment	4.2%
Preservation area	
Conservation unit (indigenous land)	
Areas flooded by electric power plants	
Area and quality of watersheds	
Mining municipalities	
Sewage and garbage treatment	
Agricultural production	3.1%
Stabilize transfer flows in municipalities with loss in the coefficient	2.0%
Municipality with low preliminary index	1.5%
Primary productivity	1.0%
Cultural and historical heritage	0.4%
Score in the Partnership Project	0.1%
d) Redistributive/intergovernmental cooperation:	5.6%
Health	3.1%
Education	2.5%
General total	100%

Source: developed by authors based on state legislation.

* ICMS weighted average for each of the 26 states.

** VA used beyond the 75% established in the CF/88 and by CL 63/90.

Criteria for returns

According to the typology used, five states adopt criteria of this nature, which in the country average resulted in a weight of 6.6% of the fraction legislated by state law dedicated to one variable with a return characteristic, which is the value added. There may be an increase in the level of concentration inherent to this variable in the distribution of the municipal share of

the states that adopt it, unless the economic activity of these states is better distributed from a spatial point of view, which is improbable.

The state that assigns the heaviest weight to the VA is Goiás, where 60% of the municipal share autonomous fraction is distributed according to this criterion. If we add the weight of the VA in this state, taking into consideration the fraction regulated by state law, as well as the fraction determined by CL, 90% is obtained, which leads to the municipal share in Goiás having an evident return characteristic. The same may be considered, even if at a lower degree, for Santa Catarina, where 40% of the state norm is used for the VA. Rio Grande do Norte, Minas Gerais and São Paulo also ‘beef up’ the municipal share using the VA with a weight over the 75% established by law.

Table 2 – Criteria for returns per state

State	Value Added
Goiás	60%
Santa Catarina	40%
Minas Gerais	18.72%
Rio Grande do Norte	20%
São Paulo	4%
Country average weighted by the ICMS of each state	6.6%

Source: developed by authors based on state legislations.

An important singularity is that Amapá, due to operational difficulties, does not calculate the VA for the fraction determined by CL. Until 2005, 100% of the municipal share was distributed in proportion to the collection of the ICMS, with participation indexes being calculated annually until 2002, being ‘frozen’ since then. From 2006 the State started to apply 10 criteria established by state law for the 25% of the municipal share, keeping the index related to the participation in collection with a weight of 75%. This procedure gives an even more concentrating characteristic to the Amapá municipal share, as the collection criterion is more concentrated than the VA criterion.

Redistributive criteria

The weight of the group of criteria bound to some redistributive logic calls attention, with a participation of 67% in the country average. If we add the redistributive/compensatory and redistributive/intergovernmental cooperation criteria, 93% of the fraction regulated by state law is obtained, mainly dedicated to reduce the level of concentration

triggered by the VA criterion, which is imposed by the Federal Constitution and CL. By adopting the VA in a bigger proportion than what is compulsory, it was seen that only 6.6% on average of the state norm is a return. In this sense, it may be pertinent to adopt a redistributive variable in the norm's imposing share, as an effort was noticed to reduce the even more evident return characteristic of the municipal share, produced by the VA criterion.

In another subsection further ahead, the hypothesis for the compulsory adoption of the population criterion will be analyzed. It should be observed that population is a variable which on its own, weighs more than any of the other redistributive criteria, with an average of 30.7% in all 26 states. This criterion contributes to reduce the VA's tendency to concentrate and is the one that adjust itself the most to the principle of accountability, in the sense that public resources should be transferred to the treasury of the jurisdiction where there is a demand from citizens for public services.

The elevated participation of the linear criterion causes surprise, as it weighs 19.5% on its own in the Brazil average. Denominated in state legislations as 'equitable', 'equalitarian', 'fixed' and 'minimum share', it consists in distributing a determined proportion of the municipal share in equal parts among all municipalities of the respective state. The implicit rationale is to favor municipalities with small population and inexpressive economic activity, but the difficulty is in understanding the logic behind this criterion, which presents no technical sense. As the revenue is divided simply by the number of municipalities, it is evident that it is not associated to the relevant need for resources, which can be more efficiently reached by the population variable. The only (and with no connection) explanation is that it is a per capita distribution for each municipality, which in its turn, cannot be considered an argument for the defense of the linear criterion.

The third most important criterion is geographic area, with 9.4% of the country average. If we add the planted area criterion it results in 13.5% of the state's weighted average. It is a relevant criterion considering that the municipality's territorial extension, often involves more elevated costs for service deliver and is not taken into account in any municipal transfers. In the MPF, the criterion is only population and whether it is concentrated or spread out in the municipal geographic space does not matter. In the municipal share, the criterion is only production which has a tendency to concentrate. Thus, it is reasonable that some states, particularly those that have some municipalities bigger than the state average, try to compensate these costs.

Table 3 – **Redistributive criteria per state**

State	Population	Linear	Area	Planted area	Rural properties	Inverse pop., area and VA	TOTAL
Acre	100%						100%
Alagoas	20%	60%	20%				100%
Amazonas	4%	96%					100%
Maranhão	20%	60%	20%				100%
Pará	20%	60%	20%				100%
Paraíba	20%	80%					100%
Piauí	50%		50%				100%
Roraima		100%					100%
Sergipe		100%					100%
Rio de Janeiro	27.8%	32.7%	30.8%			6.9%	98.2%
Rio Grande do Norte	40%	40%					80%
Rio Grande do Sul	28%		28%		20%		76%
São Paulo	52%	8%		12%			72%
Bahia	40%		30%				70%
Mato Grosso do Sul	20%	20%	28%				68%
Rondônia	2%	56%	2%				60%
Santa Catarina		60%					60%
Amapá	19.6%	28.0%	4.4%	5.6%			57.6%
Ceará	20%	30%					50%
Tocantins	8%	32%	8%				48%
Espírito Santo			20%		28%		48%
Paraná	24%	8%	8%		8%		48%
Minas Gerais	18,8%	22%	4%				44,8%
Goiás		40%					40%
Mato Grosso	16%		4%				20%
Pernambuco							0%
Country average weighted by the ICMS of each state	30.7%	19.4%	9.4%	4.1%	2.7%	0.6%	67.0%

Source: developed by authors based on state legislations.

The population, linear and area criteria, which together correspond to 59.5% of the autonomous fraction of the municipal share in the country average, have the advantage of being simple to calculate, as well as having information easily available. Below, an analysis of the redistributive criteria is done per state, so that some specific characteristics may be verified and commented on.

It is relevant to observe that the state of Pernambuco does not adopt any redistributive criteria for its municipal share. Acre, Alagoas, Amazonas, Maranhão, Pará, Paraíba, Piauí, Roraima and Sergipe destine 100% of the state norm for redistributive, population, linear and area criteria, hence, minimizing the concentrating effect of the VA variable.

For many years Acre has not applied the criteria defined in the CF/88 of at least 75% for the VA and 25% maximum, according to state law. Instead it has used a unique criterion, defined by a public administrative rule, which is the result of an agreement among all mayors, who opted for the population criterion, per layers, based on the method used for sharing the revenue of the MPF.

The population variable is analyzed in detail in another subsection and hence, comments will be made about the redistributive criteria. The linear criterion is used by 19 states. In the case of Roraima and Sergipe, the autonomous fraction in its totality is assigned to this criterion, followed by Amazonas and Paraíba, which respectively destine 96% and 80% of this variable. The bigger the weight, the bigger the distortion it may cause in per capita terms, due to there being no link between the linear criterion with any economic or social logic.

A total of 16 states adopt the geographic or planted area criteria (in the latter, only São Paulo and Amapá) and none of them with a weight over 50% in the group of criteria regulated by state law. In the case of Rio Grande do Sul, when the area includes environmental preservation areas or areas flooded by dams, it is multiplied by three in the calculation for each municipality's index. This gives an environmental characteristic to the area variable in this state and as it is impossible to separate both areas, they cannot be classified as 'the environment'.

The number of rural properties and the inverse of the population, area and VA criteria complete the redistributive criteria. The number of rural properties is used by Espírito Santo, Rio Grande do Sul and Paraná. The inverse of the population, area and VA criteria is used by Rio de Janeiro, causing some surprise due to the fact that for the VA, the calculation of its inverse enables redistribution favoring poorer municipalities, but the same cannot be said of the inverse for population and area. What is the sense of applying the inverse of population? To increase the municipal share of less populated municipalities? And using the inverse of the area? The smaller the territorial extension the bigger the municipal share? It is possible that we are not interpreting this criterion correctly.

Another singularity in Rio de Janeiro is that the state is divided in nine regions in order for the criteria to be applied, with a view of reaching interregional distribution. For example, the index which corresponds to population is the result of the relation between the percentage of resident population in the municipality and the total population of the respective region. The same procedure is adopted for the other criteria.

Redistributive/compensatory criteria

According to our typology, 20.9% of state norms, in the country average, are used to redistribute the municipal share, following parameters and variables bound to some compensatory mechanism. These adopted variables have the aim of ‘compensating’:

- In the form of ‘reimbursement’, alternative use of geographic space which may not be used for other economic purposes (preservation areas, indigenous conservation units, areas flooded by electric power plants, area and quality of watersheds);
- In the form of ‘awards’ for determined practices and behaviors (own fiscal collection effort, preservation of historical and cultural heritage, sewage and garbage treatment, elevated primary productivity); and
- As well as ‘compensating’ adverse factors in the case of municipalities with a reduction in the coefficient, or that presents a low preliminary result, suppression of revenues from the tax on mineral products in the country, which was terminated in 1988 (criterion: mining municipalities).

A lot of these criteria may also be considered redistributive. It should be clarified again that the classification in the compensatory family does not imply that they do not have redistributive characteristics, or are associated to intergovernmental cooperation programs between the state and respective municipalities. On the other hand, some compensatory criteria are aimed at one target and may in fact benefit only a few municipalities, such as the case of compensation for areas flooded by electric power plants and indigenous land conservation units.

Even with all the notoriety that goes hand in hand with the political exploration of criteria bound to environmental preservation, the variety of criteria established for this category, the complexity and operational costs in its calculation, means that only 4.2% of the municipal share is assigned according to environmental compensatory criteria, when the average is considered for Brazil in total. The own revenue criterion, usually expressed in the fiscal collection effort, has double the weight of environmental criteria; in other words, 8.6% of the fraction regulated by state law.

The agricultural/livestock production, equivalent to 3% of the fraction regulated by state law on average in Brazil, is an indicator which is reached similarly to the VA for the agricultural sector, which in most states is closer to the concept of production than VA. This because the intermediary consumption used in this sector is not deducted. This aspect instills a return characteristic to the agricultural/livestock production variable, which was classified as compensatory criteria because it leads to a ‘dual counting’ of the VA criterion. Thus, it aims to

‘compensate’ municipalities with an agricultural or livestock base, as agricultural products are not as developed as industrialized products and therefore, these municipalities generate less VA. More often than not, this criterion is adopted by states with a strong agricultural base.

Table 4 – Redistributive/compensatory criteria per state

State	Own revenue	The environment	Agricultural production	Stabilize transfer flows	Municipalities with low preliminary index	Primary Productivity	Cultural and Historical Heritage	Score in partnership project	TOTAL
Pernambuco	4%	12%		68%					84%
Mato Grosso	16%	20%							36%
Tocantins		40%							40%
Mato Grosso do Sul	20%	12%							32%
Bahia					30%				30%
Espírito Santo			24%						24%
São Paulo	20%	4%							24%
Amapá	10.4%	5.6%					5.6%		21.6%
Paraná		20%	32%						52%
Rondônia		20%	20%						40%
Minas Gerais	8%	4.4%	4%				4%		20.4%
Rio Grande do Sul						14%		2%	16%
Rio de Janeiro	1.8%								1.8%
Country average weighted by the ICMS of each state	8.6%	4.2%	3%	2%	1.5%	1%	0.4%	0.1%	20.9%

Source: developed by authors based on state legislations.

Criteria to stabilize transfer flows are also part of compensations for municipalities with low preliminary index, primary productivity, historical and cultural heritage and score in the partnership project.

In relation to redistributive/compensatory criteria per state, Pernambuco is by far the state that applies such criteria the most, with 84% of the state norm dedicated to this type of criterion. This is particularly aimed at stabilizing the transfer flow of municipalities that show loss in the coefficient, criterion which has a weight of 65%. As the weight attributed to this criterion is elevated, it is believed that it instills a certain ‘freezing’ characteristic to the participation coefficients. It attempts to reduce the instability of the municipal share transfers, which could be opportune in emergency situations, such as during floods or droughts. However,

if used whenever there is a reduction in the participation indexes, it may discourage the municipality from collecting its own tax revenue.

A similar parameter is used in the state of Bahia, where 30% of the autonomous fraction aims at adjusting the municipal participation coefficients with low preliminary results of 0.18001% in the coefficient. Actually, this is the only compensatory criterion used in Bahia.

Minas Gerais and Amapá are the only states that compensate by awarding the preservation of historical and cultural heritage; while Rio Grande do Sul awards primary productivity with 14% and score in partnership project with 2%.

As mentioned before, the most significant compensatory criterion is the one that encourages municipalities to obtain their 'own revenue'. This is adopted by seven states and it is a commendable effort, even if it does involve some difficulty or a certain level of subjectivity to calculate this measure.

The environment is part of the concerns of only nine states, where losses are compensated or practices bound to environmental aspects are awarded. In Tocantins, Paraná and Rondônia, compensatory criteria are integrally dedicated to this type of variables, with the weight of 40%, 20% and 20% respectively, in the fraction regulated by state law. Different variables, compatible with regional environmental concerns are adopted, with the following specific characteristics: conservation unit (indigenous land) in Mato Grosso; preservation area, sewage and garbage treatment, and mining municipalities in Minas Gerais; preservation area, and area and quality of watersheds in Paraná (first state in Brazil to adopt the ecological factor in 1992); preserved area and area flooded by electric power plants in São Paulo; the environment, conservation unit, soil conservation and fire fighting in Tocantins; conservation and garbage treatment unit in Pernambuco and preservation area in Rondônia. As the areas in Rio Grande do Sul may not be separated, the calculation does not include this state, where the environmental preservation area or areas flooded by dams are worth three times more than 'normal' geographic areas.

Only Paraná, Espírito Santo, Minas Gerais and Rondônia use the agricultural or livestock production criterion. Paraná, considered a state with a strong agriculturally based economy, is the one that adopts the autonomous fraction with the biggest weight, 32%. This means that some municipalities have a participation index higher than the value added index, thus, compensating the reduced level of industrialization of these municipalities.

Redistributive/intergovernmental cooperation criteria

Criteria bound to intergovernmental cooperation programs are part of the municipal share typology. This link is established between the grants and purpose of municipal expenditure in the health and education areas and although the grants of the municipal share are not subject to other agreements, municipalities must utilize the resources in consistence with the criterion. It is worth noting that these are criteria which may also be associated to those that were typically classified as redistributive and compensatory.

In the country average, these criteria represent 5.5% of the autonomous fraction of the municipal share, 3% of variables subjected to the health sector and 2.5% to the education sector. It is important to consider if it is worth adopting criteria subjected to the education sector in the municipal share. The reason for this is that 15% of the collection of ICMS was withheld in Fundef from 1998 to 2006, as well as withholdings for Fundeb of 16.66% in 2007, 18.33% in 2008 and 20% since 2009. This affects the state as well as the municipal share. The resources are deposited in a specific account and internally distributed in each state, according to the number of enrolled students in the state or municipal public school network, in primary and lower secondary education in the case of Fundef and basic education in the case of Fundeb.

In the states assessment, it was verified that eight of them use variables subject to health and education in the respective state legislations. The states of Ceará and Mato Grosso assign a significant fraction to these sectors. In Ceará, 50% of the fraction regulated by state law is assigned to education, in a calculation that considers the expenditure with primary and lower secondary education over the total current revenue. In Mato Grosso, 44% is subjected to health, where the social coefficient is calculated using the Human Development Index as reference.

Table 5 – Redistributive/intergovernmental cooperation criteria

State	Health	Education	TOTAL
Ceará		50%	50%
Mato Grosso	44%		44%
Espírito Santo	28%		28%
Amapá	10.4%	10.4%	20.8%
Minas Gerais	8%	8%	16%
Pernambuco	8%	8%	16%
Tocantins	16%		16%
Rio Grande do Sul	4%	4%	8%
Country average weighted by the ICMS of each state	3.1%	2.5%	5.5%

Source: developed by authors based in state legislation.

Then, we have Espírito Santo which destines 28% of the state norm for criterion in the health sector, measured by various parameters: health service rendering consortium, municipal expenditure on health and sanitation and advanced health management. On top of that, the state is the only one to distribute 2% of the municipal share linearly, among the 10 municipalities with the highest value added, with the condition that each of them take part in the advanced management of the health system.

In Amapá, Minas Gerais and Pernambuco, the weights are divided equivalently between health and education, with the following specific characteristics: in Amapá, education is measured through the percentage of enrolments; in Minas Gerais, municipal expenditure is measured through education and health services, as well as teams working in this area and population catered for, in order to encourage municipalities with specific family health development programs; in Pernambuco, primary and lower secondary education is used as an educational indicator and reduced child mortality for health.

Rio Grande do Sul benefits municipalities which perform best in reducing illiteracy, which is measured as the opposite of the school dropout rate, and child mortality, which is measured as the opposite of the child mortality rate. Tocantins in its turn uses basic sanitation and water conservation as parameters to measure the health criterion.

Final considerations

Some states adopt several criteria, identifying a certain fragmentation, as in the case of Amapá, Espírito Santo, Minas Gerais, Rio Grande do Sul and Tocantins. Without considering the possibility of increasing operational and control costs, resulting from the need of addressing so many variables, it is worth questioning if despite fragmentation autonomy is being put to good use.

It is worth furthering this study to investigate the reasons for the adoption of each criterion and in under which historical circumstance and political context they emerged. This would show how the principle of autonomy has been used and permit a verification of whether such autonomy should be increased – with a view to allowing for more flexibility and margin for maneuvering when adopting criteria subjected to regional governmental programs and policies – or reduced. If the studies indicate that the states that adopt a variety of criteria have put autonomy to good use in state law, fragmentation would then indicate the current 25% limit might be a bit ‘tight’. The adoption of many criteria could also be verified, as this could be a signal of disputes among interest groups, making political use of this space for state law.

Not only Representatives make political use of the municipal share, as the Executive Power may also have specific interests. For example, in Paraná, in 1998, the law was altered to replace the total population criterion for the rural population criterion with the aim of increasing the revenue share of small municipalities, which began to offer this income source as guarantee on loans borrowed from the State. In fact, it was the loan awarding body that obtained political support from State Representatives to ensure that the law was approved swiftly.

The data presented shows that there is probably a strong trend by state governments to use a high number of variables. An excess of variables increases costs, operational complexity and fragmentation. The Brazilian experience suggests that frequently, different pressures on state governments due to varied municipal interests are resolved not by discussing and choosing a comprehensive state policy, but by fragmenting allocations, without a more general criterion.

It is worth highlighting the significant weight that the population variable has on state criteria. It is a clear indication of the need for questioning in some way, the extremely concentrating impact of the main imposing criterion for the 75% of the VA. We shall return to this issue further ahead to discuss the convenience of assigning more importance to this criterion, in the municipal share allocation mechanism.

2.3 Assessment of the 2006 municipal share for selected cases

In subsection 2.1.3 we saw that an important perspective in the VA assessment is related to the tendency it has of concentrating in certain geographic areas. A useful indicator identified is the one that expresses the municipal share amount in per capita terms. This is a highly relevant indicator if considering that the revenue of the municipal share is also allocated to the municipal budget and that the demand for services has a close link to the number of inhabitants.

The amounts of the municipal share accounted for in this subsection are the ones that respective states transferred to municipalities in 2006. The original source is the National Treasury Secretariat (STN, 2006) and the universe of municipalities that provided information was of 4,807, through a consultation held in September 2007. The total amount of the municipal share transferred to these 4,807 municipalities in 2006 was of R\$ 38.6 billion, not including municipalities that did not provide STN with the information requested. These are net values, in the sense that 15% was withheld for Fundef (see graph 1).

It is also important to point out that the municipal share value is a result which considers the VA criterion for revenue sharing, as well as other criteria regulated by state law. In other words, the transfers are proportional to the each municipality's participation index, result of the

criteria applied. Notwithstanding, the elevated weight of the VA in the criteria, makes it difficult and even stops others from – in the case of redistributive criteria – instilling a more homogenous spatial distribution of the municipal share, as seen in the analysis of the indicators on the tables presented in this subsection. This aspect will be further analyzed later.

As R\$ 38.6 billion was transferred to municipalities in 2006, the average value of the municipal share in the country was of R\$ 226.7 per inhabitant, as seen on table 6. On average, capital cities have a per capita municipal share of R\$ 218.2, which is 3.75% lower than the national average. Thus, it is observed that disparities are not accentuated when the indicator is visualized under more widely average terms. Differences begin to emerge more clearly when the per capita municipal share transfer is calculated per region. Discrepancies are evidently accentuated in clusters which represent the average of the 100 municipalities with the highest per capita municipal share and the average of the 100 municipalities with the lowest per capita municipal share. While the first group showed an average per capita municipal share of R\$ 1,777.6, the same indicator for the second group was of only R\$ 18.4.

As already mentioned, concentration is much accentuated in the case of the 100 municipalities ranked in the group with the highest per capita municipal share. With 1.74% of the country's total population, they hold 8% of the total municipal share, which in per capita terms is 6.8 times more than the Brazilian average. It should be observed that no capital city is among these 100 'extreme' cases.

Table 6 – Indicators for the 2006 ICMS municipal share per region and selected clusters

Regions and municipalities Selected	Population	Municipal Share		Participation in the Brazil Total		
	Million of inhabitants (1)	R\$ Million (1)	Per capita in R\$	Population	Municipal Share	Per capita Municipal Share
North Region	11.5	1,950.8	170.3	6.7%	5.1%	75%
Northeast Region	47.4	5,814.6	122.6	27.8%	15.1%	54%
Midwest Region	11.6	2,664.6	229.3	6.8%	6.9%	101%
Southeast Region	73.7	21,695.1	294.2	43.3%	56.2%	130%
South Region	26.1	6,484.9	248.7	15.3%	16.8%	110%
Total capitals	41.8	9,113.2	218.2	24.5%	23.6%	96%
Total 100 municipalities with highest per capita value	1.74	3,093.0	1,777.6	1.0%	8.0%	784%
Total 100 municipalities with lowest per capita value	2.85	52.4	18.4	1.67%	0.14%	8%
Brazil Total	170.3	38,609.8	226.7	100%	100%	100%

Source: developed by authors with data from STN (2006).

(1): the 4,807 municipalities that forwarded information to STN are in the population and municipal share universe.

States which integrate the country's most industrialized regions collect more ICMS; thus, the amount of the municipal share is also higher, feature kept even when values are divided by number of inhabitants.

The Northeast Region presents the lowest municipal share per capita, i.e. R\$ 122.6 per inhabitant, approximately half of the total country average, it is also important to mention that the region concentrates a large population (27.8% of the country) with a lower level of economic development and its participation in the municipal share corresponds to 15.1% of the Brazil total. The North Region is not much industrialized also; however, it has low demographic density and as a result of this, its participation in the per capita municipal share is more favorable than the Northeast Region, when comparing the average for the country. The Midwest Region shows a more balanced position in terms of the population indicator and the municipal share; in other words, the participation in population and municipal share is similar. Therefore, the region has a per capita value very close to the country average. The per capita municipal share in the South Region is 10% higher than the national average and in the Southeast Region, 31%. The latter corresponds to 56.5% of the total national municipal share and 43.2% of the country population. On top of the Southeast region being the most economically developed in the country, the systematic taxation of the ICMS contributes to its superior municipal share, as it is partially taxed in the origin.

Considering that the distribution of the municipal share does not cross state borders and taking into account the heterogeneity of one same region, table 7 allows for the same indicators to be visualized per state, in the order of increasing values of the municipal share per capita.

Table 7 – Indicators for the 2006 ICMS municipal share per state

States	Municipalities	Population	Municipal share	Municipal share	Participation in the Brazil total		
	Number (1)	Thousand Inhabitants (1)	R\$ million (1)	Per capita in R\$	Population	Municipal share	Municipal share per capita
Maranhão	162	5,268	406	77.1	3.1%	1.1%	34%
Piauí	188	2,836	259	91.4	1.7%	0.7%	40%
Roraima	12	141	14	101.9	0.1%	0.0%	45%
Alagoas	94	2,931	304	103.8	1.7%	0.8%	46%
Paraíba	198	3,397	370	108.8	2.0%	1.0%	48%
Ceará	175	8,069	888	110.1	4.7%	2.3%	49%
Amapá	9	561	66	117.1	0.3%	0.2%	52%
Pará	79	5,325	628	117.9	3.1%	1.6%	52%
Acre	21	682	88	9.0	0.4%	0.2%	57%
Tocantins	119	1,113	147	131.9	0.7%	0.4%	58%
Bahia	315	12,122	1,699	140.2	7.1%	4.4%	62%
Pernambuco	172	8,141	1,178	144.7	4.8%	3.1%	64%
Sergipe	68	1,822	273	149.9	1.1%	0.7%	66%
Rio Grande	140	2,847	436	153.3	1.7%	1.1%	68%
Goiás	212	5,442	1,037	190.6	3.2%	2.7%	84%
Rondônia	51	1,559	329	210.8	0.9%	0.9%	93%
Minas Gerais	716	17,883	3,952	221.0	10.5%	10.2%	97%
Rio de Janeiro	77	14,400	3,226	224.0	8.5%	8.4%	99%
Paraná	354	9,963	2,246	225.4	5.8%	5.8%	99%
Santa Catarina	273	5,519	1,423	257.8	3.2%	3.7%	114%
Amazonas	57	3,184	826	259.4	1.9%	2.1%	114%
Rio Grande Sul	468	10,589	2,816	265.9	6.2%	7.3%	117%
Mato Grosso	128	2,774	761	274.4	1.6%	2.0%	121%
Mato Grosso do	77	2,292	719	313.8	1.3%	1.9%	138%
São Paulo	574	38,453	13,388	348.2	22.6%	34.7%	154%
Espírito Santo	68	3,007	1,130	375.6	1.8%	2.9%	166%
Brazil Total	4,807	170,321	38,610	226.7	100%	100%	100%

Source: developed by authors with data from STN (2006).

(1): the 4,807 municipalities that forwarded information to STN are in the universe.

A useful way for establishing clusters is to classify municipalities in population brackets, with the aim of verifying the allocation of resources for the municipal share per capita according to the size of municipalities. By looking at table 8, the perception is that the per capita municipal share, clustered in population brackets, produces an erratic result. This occurs due to the VA criterion not taking into account the number of inhabitants in the municipalities, as well as by the diversity of criteria adopted in the fraction of the municipal share regulated by state law, as mentioned before.

Table 8 – Indicators for the 2006 ICMS municipal share: municipalities classified in population brackets

Municipalities	Municipalities	Population	Municipal share	Municipal share	Participation in the Brazil total		
					Number (1)	Thousand Inhabitants (1)	R\$ Million (1)
Classified by number of inhabitants	Number (1)	Thousand Inhabitants (1)	R\$ Million (1)	Per capita - in R\$	Population	Municipal share	Municipal share per capita
up to 5,000	1,185	3,942.7	1,355.1	343.7	2.3%	3.5%	152%
5,001 to 10,000	1,086	7,830.4	2,002.3	255.7	4.6%	5.2%	113%
10,001 to 20,000	1,113	16,020.7	3,126.9	195.2	9.4%	8.1%	86%
20,001 to 30,000	505	12,318.7	2,499.9	202.9	7.2%	6.5%	90%
30,001 to 40,000	244	8,365.7	1,640.0	196.0	4.9%	4.2%	86%
40,001 to 60,000	226	10,795.9	1,769.2	163.9	6.3%	4.6%	72%
60,001 to 80,000	125	8,622.9	2,323.3	269.4	5.1%	6.0%	119%
80,001 to 100,000	75	6,726.6	1,391.8	206.9	3.9%	3.6%	91%
100,001 to 150,000	88	10,635.5	2,792.5	262.6	6.2%	7.2%	116%
150,001 to 200,000	35	6,133.9	1,551.8	253.0	3.6%	4.0%	112%
200,001 to 300,001	49	11,786.1	2,474.5	209.9	6.9%	6.4%	93%
300,001 to 400,000	28	9,680.7	2,196.8	226.9	5.7%	5.7%	100%
400,001 to 500,000	13	5,840.5	1,304.6	223.4	3.4%	3.4%	99%
500,001 to 1.000.000	22	15,512.0	3,803.9	245.2	9.1%	9.9%	108%
> 1.000.001	13	36,108.7	8,377.3	232.0	21.2%	21.7%	102%
Brazil Total	4,807	170,321.1	38,609.8	226.7	100%	100%	100%

Source: developed by authors with data from STN (2006).

(1): the 4,807 municipalities that forwarded information to STN are in the universe.

Using the national average per capita municipal share of R\$ 226.7 as reference, the biggest disparity identified in relation to this average is in small municipalities, with up to 5,000 inhabitants. There are 1,185 municipalities in this bracket, representing only 2.3% of the total population of the 4,087 municipalities included in the sample. Together, these 1,185 municipalities have 3.5% of the municipal share in the country, which in per capita terms is 52% more than the national average. The second bracket (from 5,001 to 10,000 inhabitants) which brings together 1,086 municipalities also presents a per capita municipal share above the national average, but in smaller proportion, 13%. The following four brackets (10,001 to 20,000, 20,001 to 30,000, 30,001 to 40,000 and 40,001 to 60,000 inhabitants) have a per capita municipal share below the national average. This situation is once again inverted in the 60,001 to 80,000 inhabitant bracket, and from then on, oscillations are seen. This reinforces the statement made previously, that the municipal share is not bound directly to the size of the population and it could not, after all, 75% of the revenue sharing is ruled by the VA criterion. Surprisingly, what has been believed is that the VA criterion in the municipal share benefits big municipalities because these are economically stronger (with the exception of dormitory cities).

However, the municipal share shown through population brackets tells a different story. Obviously, the municipalities' absolute values are higher, but in per capita terms, the municipal share is regressive, in other words, it favors very small municipalities.

Table 9 indicates that the more detailed the information, the more extreme cases are diluted in broader classifications. The per capita municipal share shows accentuated differences in the same state. In order to make visualization easier, the municipality with the **highest** per capita municipal share is presented, as well as the municipality with the **lowest** per capita municipal share, the state's **capital** city and the **second** most populated municipality in that state.

Table 9 – 2006 ICMS per capita municipal share: selected municipalities

<i>States/municipalities</i>	<i>in R\$</i>	<i>Ranking</i>	<i>States/municipalities</i>	<i>in R\$</i>	<i>Ranking</i>
<i>São Paulo</i>			<i>Bahia</i>		
Paulínea	8,492	Highest value	São Francisco do Conde	4,620	Highest value
Francisco Morato	61	Lowest value	Mirante	43	Lowest value
São Paulo	308	Capital city	Salvador	98	Capital city
Guarulhos	363	2 nd most populated	Feira de Santana	92	2 nd most populated
<i>Mato Grosso do Sul</i>			<i>Rio Grande do Sul</i>		
Alcinópolis	3,439	Highest value	Triunfo	3,369	Highest value
Ladário	114	Lowest value	Alvorada	49	Lowest value
Campo Grande	211	Capital city	Porto Alegre	213	Capital city
Dourados	240	2 nd most populated	Caxias do Sul	345	2 nd most populated
<i>Minas Gerais</i>			<i>Rio de Janeiro</i>		
Araporã	3,215	Highest value	Porto Real	2,725	Highest value
Ribeirão das Neves	39	Lowest value	São Gonçalo	67	Lowest value
Belo Horizonte	168	Capital city	Rio de Janeiro	203	Capital city
Contagem	296	2 nd most populated	São Gonçalo	67	2 nd most populated
<i>Mato Grosso</i>			<i>Santa Catarina</i>		
Alto Taquari	2,261	Highest value	Ita	2,087	Highest value
Confresa	66	Lowest value	Camboriú	54	Lowest value
Cuiabá	208	Capital city	Florianópolis	137	Capital city
Várzea Grande	130	2 nd most populated	Joinville	279	2 nd most populated
<i>Paraná</i>			<i>Pernambuco</i>		
Araucária	1,619	Highest value	Ipojuca	1,606	Highest value
Sarandi	40	Lowest value	Cumaru	17	Lowest value
Curitiba	163	Capital city	Recife	283	Capital city
Londrina	150	2 nd most populated	Jaboatão dos Guararapes	158	2 nd most populated
<i>Sergipe</i>			<i>Goiás</i>		
Rosário do Catete	1,591	Highest value	São Simão	1,489	Highest value
Itabaiana	35	Lowest value	Águas Lindas de Goiás	11	Lowest value
Aracaju	138	Capital city	Goiânia	155	Capital city
Nossa S ^a do Socorro	90	2 nd most populated	Aparecida de Goiânia	50	2 nd most populated
<i>Amazonas</i>			<i>Espírito Santo</i>		
Presidente Figueiredo	1,453	Highest value	Anchieta	1,399	Highest value
Iranubá	86	Lowest value	Piúma	118	Lowest value
Manaus	289	Capital city	Vitória	855	Capital city
Parintins	101	2 nd most populated	Vila Velha	121	2 nd most populated

Source: developed by authors with data from STN (2006).

The municipal share may be assessed by analyzing some indicators which refer to the capital cities, which have been considered in part in previous tables. Due to the importance of capital cities and the problems resulting from the metropolization process they have incurred, table 10 presents more detailed indicators.

Table 10 - Participation coefficient for capital cities in the total municipal share of respective states and other indicators

Capital Cities	Reg.	State	Per Capita Municipal Share 2006 In R\$	% of Municipal Share in the Total Revenue in 2006	Population - Thousand			% Coefficient in the State's Total Municipal Share		
					2000 A	2007 B	Variation B / A	2000 (2) A	2007 (3) B	Variation B / A
Macapá	N	AP	109.2	16.1%	267	368	37.9%	55.9%	56.6%	1.3%
Boa Vista (1)	N	RR	92.8	14.6%	171	250	45.7%	ND	ND	
Rio Branco	N	AC	133.2	16.8%	269	314	16.7%	ND	ND	
Porto Velho	N	RO	150.7	18.2%	315	381	21.1%	22.6%	18.2%	-19.3%
Manaus (4)	N	AM	289.0	34.2%	1,286	1,689	31.3%	65.0%	57.8%	-11.1%
Belém	N	PA	118.3	15.5%	1,200	1,428	19.0%	24.7%	20.3%	-17.8%
Palmas	N	TO	99.5	7.2%	133	221	65.8%	9.5%	12.7%	34.2%
São Luiz	NE	MA	213.6	22.7%	855	998	16.7%	ND	46.0%	
Teresina	NE	PI	180.2	19.8%	704	802	13.9%	ND	51.5%	
Fortaleza	NE	CE	149.4	17.5%	2,139	2,417	13.0%	45.1%	41.1%	-8.7%
Natal	NE	RN	216.0	22.7%	699	790	12.9%	36.5%	36.5%	-0.1%
João Pessoa	NE	PB	164.7	17.6%	595	672	13.0%	29.0%	28.5%	-1.8%
Recife	NE	PE	283.1	24.7%	1,388	1,515	9.1%	36.2%	34.6%	-4.5%
Maceió	NE	AL	102.9	14.1%	806	922	14.4%	38.0%	30.9%	-18.7%
Aracaju	NE	SE	137.9	13.4%	451	505	12.0%	ND	ND	
Salvador	NE	BA	97.6	14.1%	2,332	2,714	16.4%	18.2%	13.8%	-24.5%
Cuiabá	CO	MT	208.2	21.6%	460	543	17.9%	16.6%	15.1%	-9.0%
Campo Grande	CO	MS	210.7	17.2%	665	765	15.0%	18.8%	24.3%	29.1%
Goiânia	CO	GO	155.0	13.6%	1,073	1,220	13.7%	27.2%	17.7%	-34.7%
Belo Horizonte	SU	MG	168.0	13.2%	2,154	2,400	11.4%	10.8%	9.6%	-11.4%
Vitória	SU	ES	854.8	33.6%	272	317	16.5%	25.6%	23.9%	-6.8%
Rio de Janeiro	SU	RJ	203.2	14.9%	5,614	6,137	9.3%	41.3%	32.6%	-21.1%
São Paulo	SU	SP	308.5	19.6%	10,009	11,017	10.1%	26.7%	23.7%	-11.3%
Curitiba	S	PR	162.6	10.4%	1,618	1,789	10.5%	16.2%	13.2%	-18.8%
Florianópolis	S	SC	136.7	10.7%	285	407	42.5%	3.6%	3.6%	1.0%
Porto Alegre	S	RS	213.2	13.9%	1,322	1,441	9.0%	13.9%	10.5%	-24.5%
Total Capital Cities			218.2	17.7%	37,085	42,022	13.3%			

Source: developed by authors with data from STN (2006); IBGE (population) and State Secretariats of Finance (participation coefficients).

NA: not available.

- (1) The value of the municipal share for Boa Vista is from 2004, as the municipality did not provide STN with any information about 2006.
- (2) Cuiabá's participation coefficient is for 2001 and not 2000.
- (3) The participation coefficient for Porto Velho and Porto Alegre is for 2006 and not 2007.
- (4) In Amazonas, the state law that regulates the autonomous fraction was declared unconstitutional (ADI no 2728). While the problem is not solved, the state has been applying the 2004 coefficients.

When they are added together, capital cities have a reasonably balanced position, with 24.5% of the country total population and 23.6% of the total municipal share. As there is balance between the participation in population and in the amounts, the per capita municipal share value is very close to the national average, being only 4% below it.

With few exceptions, capital cities have the highest participation indexes among municipalities in their respective state. In general, the capital city is also the most populated municipality in a state and almost always has a developed economic base, justifying the elevated participation coefficients identified. In 2007, the biggest coefficients belonged to capital cities in the North and Northeast regions: Manaus, 57.8%; Macapá, 56.6%; Teresina, 51.5%; São Luiz, 46%; Fortaleza, 41.1%; Natal, 36.5% and Recife, 34.6%, showing a higher economic concentration in capital cities of poorer regions.

However, the coefficients need to be brought together with other variables in order for this issue to be put into context. Although most capital cities have an elevated participation coefficient, in almost all of them it has declined in recent years. Table 10 indicates a reduction in the 2007 coefficients in relation to 2000, which is rather worrying, as in every capital city, the population has grown in the period. For example, Goiânia, which has the biggest reduction in coefficient (34.7%), has seen its population grow by 13.7%. Its municipal share corresponds to 17.7% of the total of the state, but it is likely that it is going through budgetary difficulties. The same is probably happening with Salvador, Porto Alegre, Rio de Janeiro, Porto Velho, Curitiba, Maceió and Belém, which together have shown an elevated decline in the coefficient in relation to demographic growth. Among these cities, Salvador, Porto Velho, Curitiba, Maceió and Belém have an aggravating problem, a per capita municipal share below the national average.

Although the coefficient for Florianópolis is stable, it is the lowest of the capital cities, corresponding to 3.6% of the State of Santa Catarina. Belo Horizonte and Porto Alegre also have low coefficients, which together with the decline in the coefficients in 2007 in relation to 2000 and the increase in population, points to difficulties.

The only place where the coefficient increased more than the population was in Palmas. In Campo Grande, the 2007 coefficient is also higher than the 2000 coefficient, but in this case the population growth is less than what was verified in the coefficient.

The reduction in the participation coefficients of capital cities may be explained by a trend in the industrial sector of moving from the capital city to metropolitan areas and hinterlands in many cases, because of a lack of space and environmental restrictions. This industrial movement needs to be assessed with another trend, the concentration of services in big metropolises, which goes hand in hand with the increase in population due to migration. Thus, the service sector contributes to the generation of municipal revenues through the ISS (service tax) in much bigger proportion in big cities, among them capital cities, where the reduction in the municipal share coefficient has been compensated by the increase of the municipality's own revenues. However, we can not state that one is compensating for the other in an equivalent manner, as a survey of the historical background of municipalities' revenue sources has not been conducted. It is possible that the most damaging distortions for capital cities are those resulting from the revenue sharing criterion in the MPF, with only 10% of its total being destined to capital cities. While on average, the municipal share represented 17.7% of the total revenues in capital cities in 2006, the MPF corresponded with only 6.3% in the same year.

3. ALTERNATIVES TO REDUCE CONCENTRATION OF VALUE ADDED CRITERION

In the previous sections, it was observed that the main criticism of the constitutional criterion that regulates the distribution of the 75% of the municipal share is its concentrating characteristic, benefiting municipalities with bigger economic capacity. In the same way, it was seen that state legislation uses around a third of the resources regulated by it to compensate this concentration in some way. All of this leads to an important question: up to what point is it desirable for the municipal share to have its criteria altered with a view to reducing the concentration brought about by using the value added variable?

Looking at the municipal share current structure, two alternatives to achieve this result become evident. One of them would be to adopt a hybrid criterion for the fraction regulated by complementary law and the other alternative could be to increase the fraction regulated by state law. The first option is more effective in principle and it would entail replacing the current VA criterion with an intermediate situation; in other words, adopting a combination of several

criteria, with some of the resources subjected to the VA criterion. The second alternative involves a totally different approach, reducing the VA fraction by increasing the fraction regulated by state law, today limited to 25%.

The basic issue behind these alternatives is how to address state autonomy, which even mitigated by municipal interests are very much present in state legislative assemblies. The choice of changing the main criterion does not affect the current situation as state autonomy would continue to be restricted to a quarter of the resources. However, the second option would be to increase autonomy, as state legislative assemblies would be able to regulate over the majority of resources based on their own criteria.

3.1 Autonomy versus uniform national criteria: a discussion

It is naive and delusional to believe that autonomy is a value to be chosen at any cost. It presents several disadvantages: the first refers to the frail and unqualified local political decision making systems, which allow for policies at the national level to be more efficient. However, if the fiscal federalism theory is taken into account, the provision of public services should always be more efficient if delivered by local governments. PRADO (2003a and 2003b) believes that the negative experience in Brazil, related to fiscal transfers bounded by criteria and conditions until the 80s, led to this being strongly rejected, however, recent experience in education and health has made this alternative be considered a less radical option. Systems such as Fundef and SUS show that a reduction in subnational autonomy can lead to good results. The author carries on to say that the possible advantages prevail over local inefficient or corrupt political systems, ensuring that at least part of the resources are allocated following a technical criterion, as well as being a relevant instrument for the implementation of overarching national programs that address sectoral or functional public spending and involve local execution in some way.

The second disadvantage is that as it is based on autonomy, the option of increasing the state share does not ensure that the redistributive criterion will be broadened. The balance in the allocation of the resource may be guaranteed if the option to change the imposing criterion is changed, as it would not depend on a decision by the states. However, increasing the state share may not result in more redistribution in many states, only benefitting some municipalities.

On top of that, the imposing criterion in the constitutional text aims at ensuring the participation of each municipality in the ICMS municipal share. Therefore, no municipality runs the risk of losing the minimum amount established by the Constitution – which currently corresponds to $\frac{3}{4}$ of its VA - , which could happen in case the criteria were based only on state

decisions. The limit imposed by the Constitution does not allow the state legislator to look to municipal governments, in order to find more convenient formulas to provide for their specific political wishes or wishes of any other nature. Imposing an equal or higher fraction to the one in current use ensures the municipal constitutional right of receiving its share of ICMS.

On the other hand, the argument for increasing the fraction regulated by state law takes for granted that states would be interested in putting it to good use, which may not be so evident. This could be a type of autonomy that state managers just do not want to have; in other words, an inevitable arena of conflicts of interest, which may be observed in subsection 2.2 by analyzing the criteria adopted in various states.

Increasing the fraction regulated by state law could translate into a space for states to liaise and coordinate more with municipalities. Here, it is important to take into consideration that the link between them has weakened, partly due to the 1988 Constitution turning municipalities into federated units. It can also be looked on as a way of increasing the possibility to reduce the VA's tendency to concentrate, as long as it is clear that the municipal share has a mixed quality, aimed at reducing its return function.

A stage for negotiation between governments and municipalities could be created in the Brazilian Federation, where municipalities would be autonomous. This could be an additional encouraging factor for state governments in Brazil to play a basic role which they play in all Federations in the world: plan public action at the municipal level.

In relation to the abovementioned dilemma, no choice may be defended, as it is a political decision and should be addressed as such. Its also makes no sense discussing the municipal share separately, as what matters is the total result of the municipal vertical transfer system, where the MPF, SUS and Fundeb are also very important. The definition of a model for the municipal share should be the result of an integrated and joint analysis of the municipal financing matrix and in a wide reform process, should rely on the role assigned to each important component of this matrix.

3.2 Research development perspectives

An analysis of criteria adopted by state legislation suggests that it would be interesting to further study the historical background of the municipal share in each state. It should offer a political, institutional point of view, as well as more elements for assessing whether it is convenient to alter the autonomous fraction of the municipal share.

Not enough research was done for this type of conclusion to be reached. However, some comments can be offered, indicating elements that could possibly be researched on another occasion. Topics for future studies at the level of the FFEb could be:

- a) The trade off between autonomy and the risk of fragmentation (lack of harmonization) resulting from a more or less autonomous choice. This aspect needs to be analyzed and put into perspective;
- b) An analysis of political science aspects could without a doubt be very useful in providing new outlooks on the criteria. It requires an assessment of the political context and historical background of criteria adopted in each state, after all, the municipal share is over 25 years old. We do not have the historical background of criteria available and we do not know how they were altered during the years. Such information would be useful to analyze the social, economic and political interests that determine the revenue sharing;
- c) The relation between state and municipal governments in Brazil; if the promotion of municipalities to autonomous federated units affected its relations with state governments; how governors and legislative assemblies have dealt with the several and opposing interest groups in relation to establishing revenue sharing criteria; if the governors have or not acted as coordinating agents of inevitable disputes and conflicts around these issues;
- d) The dispute between municipalities, a type of ‘fiscal war’, so that taxpayers ‘beef up’ information used for calculating the VA.

In relation to the proposal to alter the VA, FFEb studies should be directed at designing simulations for the new variables suggested in the present text, to indentify if the result will reduce the concentration of the VA and distribute the ICMS municipal share better.

4. PROPOSAL FOR THE MUNICIPAL SHARE

Our basic assumption is that it might be convenient to make the criteria of the main municipal share more sophisticated, so that it may be adjusted according to municipalities’ financial needs. The current criterion is rigid and carries with it enormous distortions. On the other hand, the municipal share plays an important role in the financing matrix of Brazilian municipalities today: it is the base for the financing of big municipalities. While the MPF distributes resources mainly to small and medium sized municipalities, the municipal share

balances the system in some way by allocating resources to big municipalities, suggesting that such criterion should not be eliminated. It is flawed in relation to big municipalities, which in terms of population is not as proportionately big in economic capacity, such as the case with dormitory cities.

Therefore, the first reasonable conclusion is that the VA criterion should be kept, but with reduced weight. After determining that the return type imposing fraction of the municipal share should be reduced, it is worth looking at variables that should integrate the imposing fraction of the municipal share. What other criteria could be considered?

There are two criteria that show relevant virtues and could be considered in an approach where multiple criteria for the municipal share were adopted. First, the population criterion, incorporating a redistributive component into the system, which should result in a more balanced distribution of this resource, even if said balance has to be assessed for the whole group, something yet to be done in FFEB studies. The second criterion would be consumption, which should be considered based on the fact that the ICMS, in current tax reform proposals, would become a consumption type tax, ruled by the principle of destination for revenue allocation. These two criteria will be discussed in more detail further ahead.

As a result, the imposing characteristic of the municipal share would continue to be bound to a return typology (VA and consumption), but in a smaller proportion. With the inclusion of the population variable, the imposing fraction of the municipal share would start having a redistributive role. The solution for reducing the concentration of the VA does not reside solely in increasing the fraction in the revenue sharing criterion regulated by state norm (currently at 25%), as this fraction may assume any characteristic. Defining the intended quality of the imposing proportion through a CL is important for establishing the municipal share.

How could these criteria be put together? An alternative is a system like the one which was used in the Indian Federation for over 50 years for distributing the fraction of the federal income tax destined to states. The total amount of resources was sliced, establishing fractions of the resources which were subjected to different criteria. In our case, this would mean establishing three fractions of resources distributed by the VA today, each one distributed according to a criterion: population, VA and consumption. With this, balance is reached between the advantages and disadvantages of each criterion. Evidently, percentages should only be decided after many detailed simulations and a wide political debate in the context of the reform of the Brazilian federative fiscal system.

Below specific aspects of these two alternative criteria are discussed.

4.1 Why the consumption criterion in the municipal share

In another FFEB document (Cadernos Fórum Fiscal nº 5, 2007), the principle of destination is proposed for allocating revenues collected from the state VAT. For the tax system the proposal is to adopt dual taxation over goods and services, with two VAT type taxes: one under the taxing power of the Union and the other under the taxing power of the state.

A relevant characteristic of the state VAT after a transition period is the adoption of the principle of destination for the interstate jurisdictional coordination, meaning that the tax collection of each state would be related to the size of its consumer market. What is important to understand is that each state will collect taxes on what it consumes, no longer as the result of a hybrid system, bound significantly to its production. The details of the operational form/mechanism/model proposed to obtain the principle of destination are irrelevant.

FFEB and most of the proposals for the reform of the main state tax consider that revenue appropriation should be related to how much each state consumes, different from the current system (mixture of origin and destination), where important part of the revenue is bound to production.

When the VA criterion was regulated in 1972 (Decree-Law 1.216), the ICM was predominantly ruled by the principle of origin. The dispute among producing and consuming states over the ICM (which followed the principle of origin) was only beginning. They wanted to change the ICM to a mixed origin/destination system, by reducing the interstate tax rate, thus, establishing a revenue sharing operational model between producing (remitting) and consuming (destination) states. Therefore, in 1972, the consumption criterion was not put forward for revenue sharing as the principle of origin, place of production criterion was chosen, the VA. Throughout the years – first in the old ICM and after the 1988 Constitution, the ICMS -, the system was closer to the principle of destination, by reducing interstate tax rates, so that the destination state would receive a higher revenue share. Despite this, the VA remained unchanged. Only in 1983 did the 25% of the municipal share start being distributed according to criteria established by state norm.

With the mixed criterion for the appropriation of ICMS revenue and the proposal for adopting the principle of destination in the reform, it is worth questioning the pertinence in adopting the consumption criterion in the revenue sharing of the imposing fraction of the municipal share, together with the VA.

An aspect to be considered is that the purpose of the consumption variable is not to make the municipal share more equitable, although it does contribute to it. This variable would change the way the distribution using the return criterion is made for the municipal share, it

would be as if the ‘returning’ was done in diverse formats of the ‘return’ ruled by the VA criterion, thus, mitigating its concentration and allowing for a better conceptual adaptation of the municipal share to the principle of destination. Such adaptation may be opportune, particularly because the place where there is a demand for public services is closer to where consumption takes place than to where the VA is obtained. If consumption is included, the return quality of the municipal share is kept, but less accentuated, as the ‘return’ would be diversified. To reduce the VA’s tendency to concentrate, the population criterion could be adopted, as we will show in the next subsection.

One could say that it is a paradox that in every discussion for the reform on the taxation of goods and services, the principle of destination is proposed as a state tax and that the relevance of this choice is not discussed in relation to revenue sharing. In other words, it could be safe to say that this distribution should take place base on a criterion related to how much each municipality consumes.

Adopting consumption to distribute the municipal share is not an alternative never seen before, at least on one occasion it was actually a proposal. In the tax reform discussion process, in April 1999 (Constitutional Amendment Proposal - CAP - number 175), the National Federation of State Fiscal Authorities (Fenafisco) proposed a CAP to CAP – 175 (signed by Representative Eduardo Campos), contemplating the adoption of consumption as a criterion for revenue sharing in the imposing fraction of the municipal share.

Evidently, the principle of destination may be chosen for appropriating the revenues from the state VAT collection, keeping the principle of origin as a criterion for the municipal share, with the VA criterion. In other words, proposing that the state VAT be related to the size of each state’s consuming market does not mean that the municipal share criterion has to follow the same revenue appropriation logic. However, as criticisms directed to the VA have been systematic, the consumption variable would contribute in making the revenue sharing criterion more compatible with the design of the state VAT proposed (principle of destination), as well as reducing the problem of ‘small municipality versus big plant’. It would also make the municipal share system more compatible with the accountability principle, which indicates that public resources should be transferred to where there is a demand for public services. Even with imperfections, the place of consumption has a closer correlation to the place of residence and demand for public services than the production criterion, or VA.

Imagine if the municipal share was collected directly by the municipalities, through a VAT under municipal taxing power. If a municipality exported all its production to another municipality (common case in some regions in many Brazilian states), and the principle used

was of origin only, the current distribution method based on the VA would be adequate. But, if the principle is of destination, this municipality (in the case of direct tax collection) would not obtain any revenue from exporting, as the tax would be collected in another municipality, state or country. It would be a poor municipality in a state, from the perspective of a hypothetical municipal tax on goods and services.

An advantage of adopting the consumption criterion (with no relation to the revenue sharing criterion) is the possibility of establishing an additional economic indicator per municipality, which is not measured by IBGE. This agency conducts the Family Budget Survey (POF), but irregularly and restricted to metropolitan regions, in other words, the survey is not done per municipality. The fiscal value added has been used as a proxy of municipal GDP, constituting an important indicator for economic and social planning of governmental actions and also by the private sector. Thus, the calculation of the 'fiscal' consumption would also be a useful indicator.

Another advantage is the possibility of bringing legitimacy to a practice which is already adopted by states and as far as we can tell, without any legal backing of harmonization. As already mentioned, consumption is being adopted by states for some economic activities. This is the case for determining the 'VA' – which is closer to the concept of consumption – the distribution for electric power, the fraction related to communication services and water supply. In other words, in practice, states are already 'interpreting' the legislation to calculate the VA closer to consumption than production. Perhaps, all that is missing is to admit that the consumption criterion has already been adopted, even if it is fragile, as it is not always that it has unquestionable legal base and not always as a result from an agreement between the state and municipalities. Sometimes, the tax administration in charge of managing the VA is exposed to legal controversies and sometimes, municipalities are not aware of some operational procedures that may be questioned. However, this does not mean that VA managers are acting incorrectly, there is a need for more detailed elements in the CL to provide legal base to specific situations, so that arbitration of procedures may be avoided and the determination of the VA made operational.

In relation to the weight assigned to the consumption criterion, there is no need to say that it takes various proportions, including the total replacement of the VA criterion. However, the inclusion of the population and consumption criteria - still to be established by the Constitution and CL -, does not mean that the VA should be suppressed completely, but it should be assigned a lower weight in the imposing fraction of the municipal share. Value

added, consumption and population should be accommodated in the 75%, as long as the 25% maximum is kept as the fraction subjected to autonomous state norm.

The consumption criterion has two dimensions: conceptual, already analyzed and operational. It is important to verify the possibility of obtaining fiscal elements to calculate municipal consumption from the perspective of the product. We chose to address operational aspects in Annex II of this report, namely those bound to the municipal consumption calculation. In the referred Annex, this calculation is shown and each of the elements in the so called consumption equation are analyzed.

The inclusion of the consumption variable should not imply in a cost increase for the tax administration. Operationally, the idea is that the same technological and human resources used in the calculation of the VA are also used to calculate consumption. This could be seen as an advantage in the extent that it allows for a new criterion to be calculated without additional costs to the tax administration. It is important to note that the origin of the information to obtain the consumption criterion would be the same as the VA information, in other words, the economic-fiscal information provided by the taxpayer. As the VA is also calculated indirectly, the quality of its results will rely on the information provided by ICMS and state VAT taxpayers. The same is true for consumption.

4.2 Why the population criterion in the municipal share

This subsection explores the viability of including the population criterion in the imposing fraction of the municipal share. The imposing fraction of the norm, today at 75% minimum reserved for the VA, or even mitigated with consumption, as suggested, would continue to have a return quality and hence, tending to concentrate in the producing or consuming municipality. On top of that, considering the frailty and complexity in calculating the VA and consumption, it is pertinent to mitigate the imposing fraction of the criterion by adopting the population variable.

The population criterion contributes to reducing the tendency to concentrate of the VA and consumption criteria. The population variable is pertinent to the place where public services are demanded by citizens (namely in the social area), which justifies its adoption. States that do not adopt population as a criterion would be obliged to do so – which is considered opportune – and states that already use it, would be able to assign an even higher weight to it, as they will be able to earmark the autonomous fraction for other criteria.

Adopting the population variable would solve a big part of the problems of some less industrialized capital cities (Florianópolis for instance) and of highly populated municipalities in metropolitan regions, considered dormitory cities. Certain municipalities have faced serious infrastructure and urban clustering problems due to a growing demand for public services. This demand flows also from neighboring cities where productive activity may no longer grow due to a lack of available areas, environmental issues, among others. Different from past decades, the problems in capital cities have aggravated because of metropolization and their participation in the VA has reduced, as table 10 showed.

Apart from a system for equalizing resources according to the expenditure capacity of jurisdictions, another FFEF study shows that perhaps, only the population variable could allow for resources from the municipal share to flow to dormitory cities. As these municipalities are populated by people who work and consume in other municipalities, which tend to have a strong industrial and commercial base, they contribute to the generation of the VA, as well as goods and services in other municipalities. Consequently, their capacity to provide quality public services to their citizens is compromised.

Like consumption, this proposal has been seen before; in fact, many CAPs have been proposed in this sense, some are still going through the channels in the National Congress. The modifications address the distribution criteria of the municipal share in the ICMS, suggesting that the population variable be adopted together with the VA, or even using only population⁹.

Table 11 shows the weight assigned to the population variable in the municipal share of each state currently. As the dimension of this variable in the group of criteria is also of interest, the weight of the fraction regulated by state law is also presented in relation to the totality of criteria, including the VA and the imposing fraction.

Among the criteria adopted by states in using the autonomous fraction, the higher weight is assigned to the population variable, which in the country average corresponds to 30.2% of the municipal share distributed according to this criterion, considering that the country average was obtained by the ICMS weighted average in each state. Even so, when the VA is included in the calculation, the weight of the population is diluted, reaching only 7.6 % of the country average, which is considered very low.

⁹ Among them, amendments No 29/99 and 39/99 from Senator Paulo Hartung. Amendment No 29/99 proposes that 25% of the ICMS tax collection was distributed in direct proportion of the municipality's population in relation to the state's. Amendment No 39/99, that 50% was distributed in the VA proportion (three year average), 45% in the proportion of population and 5% equally among all municipalities.

Table 11 – **Population Participation in the municipal share criterion**

Federated Unit	% of fraction regulated by state law	% in the criteria total (including VA)
Acre	100.0%	100.0%
São Paulo	52.0%	13.0%
Piauí	50.0%	12.5%
Bahia	40.0%	10.0%
Rio Grande Norte	40.0%	10.0%
Rio de Janeiro	27.8%	6.9%
Paraná (only rural population)	24.0%	6.0%
Rio Grande Sul	20.9%	5.2%
Alagoas	20.0%	5.0%
Ceará	20.0%	5.0%
Maranhão	20.0%	5.0%
Mato Grosso Sul (only electorate)	20.0%	5.0%
Pará	20.0%	5.0%
Paraíba	20.0%	5.0%
Amapá:	19.6%	4.9%
Population	10.4%	2.6%
More populated municipalities	9.2%	2.3%
Minas Gerais:	18.8%	4.7%
Population	10.8%	2.7%
Population of 50 biggest municipalities	8.0%	2.0%
Mato Grosso	16.0%	4.0%
Tocantins	8.0%	2.0%
Amazonas	4.0%	1.0%
Rondônia	2.0%	0.5%
Espírito Santo	0.0%	0.0%
Goiás	0.0%	0.0%
Pernambuco	0.0%	0.0%
Roraima	0.0%	0.0%
Santa Catarina	0.0%	0.0%
Sergipe	0.0%	0.0%
Country average weighted by the ICMS of each state	30.2%	7.6%

Source: developed by authors based on state legislation

Acre is an unusual case, where population is adopted to distribute 100% of the municipal share. This is due to an agreement between the 21 municipalities to adopt the population criterion, following population brackets, using the same procedure applied in the MPF.

São Paulo, Piauí, Bahia and Rio Grande do Norte assign significant importance to the population criterion, with respective weights of 52%, 50%, 40% and 40% in the group of criteria regulated by respective state legislations.

In the states of Rio de Janeiro, Paraná (only rural population), Rio Grande do Sul, Alagoas, Ceará, Maranhão, Mato Grosso do Sul (only number of electorate), Pará, Paraíba, Amapá, Minas Gerais and Mato Grosso, population has a weight that varies from 27.8% (Rio de Janeiro) to 16% (Mato Grosso). Some specific characteristics are used in the population criterion in the state of Paraná, Mato Grosso do Sul, Amapá and Minas Gerais.

In 1998, Paraná replaced the criterion of total population for rural population. This is a common case of the municipal share being used politically; in this specific case, it was an initiative of the state Executive branch. The law was changed swiftly; only later it was possible to identify that the objective was to favor small municipalities from the hinterlands, as these offered the municipal shares as guarantee for loans borrowed from the state, which in turn, took out loans from international organizations and transferred them to the municipalities to use in programs bound to these loans.

Mato Grosso do Sul considers only the number of electorate, a dubious choice. What is the purpose of this? Amapá has two criteria bound to the population variable, earmarking a fraction to the total population and another to distribute among the most populated municipalities. Minas Gerais also uses more than one indicator, total population and the population of the 50 most populated municipalities.

Population has a reasonably low weight in the states of Tocantins, Amazonas and Rondônia. Espírito Santo, Goiás, Pernambuco, Roraima, Santa Catarina and Sergipe do not adopt the population criterion. In the case of Espírito Santo and Pernambuco, there is an indication that there is no room left for population as both these states adopt a variety of criteria. This cannot be said of Goiás, Roraima, Santa Catarina and Sergipe, as these assign their autonomous fraction to criteria such as the linear criterion, for 'beefing up' the VA criterion (Santa Catarina and Goiás). I was not possible to find out more about the historical background of the municipal share in these states to verify why they do not adopt the population criterion.

Generally, even though it is an important variable in the country average, population has to compete with a number of other criteria. Thus, this competition between criteria in the 25% earmarked for state regulation has made assigning more importance to population difficult, which considering the strong link this variable has with the demand for public services is not a good thing. The fragmentation of criteria in some states could be favoring less populated municipalities, where the pressure for public services is lower, in prejudice of more populated ones. The low weight assigned to the population criterion in many states (some do not even adopt the criteria) indicates that its adoption would be opportune. Therefore, the mandatory

adoption of the population variable in the municipal share criterion is probable, even if simulations still have to be conducted at the level of studies developed at FFEB. Only in the case of Paraná simulations were possible, as the next subsection shows.

The difficulty in adopting the population variable is political, as from the operational point of view there are no obstacles, as populational statistics are very reliable in Brazil. Thus, on top of the conceptual relevance, the population variable in the imposing fraction of the revenue share also relies on other simplification attributes and low implementation costs.

The weight assigned to the population criterion depends on simulations and impact, and the index corresponding to this criterion should not be applied per municipality brackets as the MPF (IPI and IR participation), but directly and proportionately. This is an important aspect as the fact that the MPF generates distortions to benefit very small municipalities could be raised. It is not the population criterion that causes significant differences in the MPF per capita, but how the criterion is applied, including municipalities with very different sized populations in the same population bracket. Another factor which causes differences in the MPF per capita is the division of the fund is two rigid components: 90% of the resources to municipalities in the hinterlands and 10% of resources to capital cities.

4.3 Case study - simulation of municipal share impact in municipalities in the State of Paraná

In annex II of this report the elements and parameters needed to calculate consumption per municipality are shown, clarifying that it is not possible to make the calculations with the information available in the state fiscal systems. To calculate consumption, for state ICMS and VAT, more detailed information on taxpayers is needed than what is available on Sinief. This does not imply in more difficulty or bigger obstacles. Generally, all big taxpayers already supply such information through the so called ‘magnetic files’, as is the case with Sintegra. Thus, it is likely that the tax administration already has the necessary information, although at the moment it is not available at the managerial level, which does not allow for a simulation of the impact of adopting consumption to be conducted.

Due to the restriction in calculating consumption, the simulation conducted for the municipalities in Paraná as a case study, verifies the impact of reducing the weight of the VA criterion in half and adopting the population criterion instead, without changing any of the other criteria regulated by state law. The weight of 37.5% assigned to the VA and population is arbitrary, as it may enable various proportions and as consumption is not defined nor included,

it was decided that the VA and population would be used in the percentage earmarked for the VA. In order to make interpreting the results easier, the current criteria in force in Paraná should be considered in the simulation.

Table 12 – Criteria for the simulation of municipal share impact in municipalities in the State of Paraná

Description	Criteria	Criteria for 'alternative scenario'	
	Current	Pertinent Example	Simulation conducted
Criteria determined in CF and LC:	75%	75%	75%
Value added	75%	25%	37.5%
Consumption		25%	Not available
Population		25%	37.5%
Criteria regulated by state law:	25%	25%	25%
Value of agricultural/livestock production	8%	8%	8%
Rural production	6%	6%	6%
Preservation area	2.5%	2.5%	2.5%
Area and quality of watersheds	2.5%	2.5%	2.5%
Area	2%	2%	2%
No of rural properties	2%	2%	2%
Linear	2%	2%	2%

Source: developed by authors based on data from the Secretariat of Finance of the State of Paraná/Caec.

The simulated scenario was conducted using the municipal participation coefficients which were used in the municipal share transfers in 2007 (calculated in 2006, based on information of the average VA in 2004 and 2005 and other years for other criteria, on a case by case basis). The population of municipalities used in the simulation is an IBGE estimate for 2006, which was applied by TCU (Federal Court of Accounts) to calculate the municipal participation coefficients in other transfers, such as the MPF and municipal share in the Cide-fuel tax. The total value of the municipal share transferred to municipalities in 2006 – as 2007 is only partial – was of R\$ 1,915.8 million, already deducting the 15% for Fundef (as shown in graph 1). In relation to amounts of the municipal share expressed in per capita terms, the total of R\$ 1,915.8 million was considered, which was distributed among municipalities in proportion to their participation coefficients in force in 2007. The result was then divided by each municipality's population to obtain the per capita municipal share.

It is not practical showing the results for all 399 municipalities in the state of Paraná. In order to facilitate analysis, the impact indicators were grouped together according to two categories:

- a) Table 13, municipalities are classified by population brackets, so that the impact according to the size of municipalities may be verified;
- b) Table 14, the same indicators are presented for municipalities or selected clusters, relevant to the analysis.

Due to issues already analyzed in the reports, as well as others which are part of FFEB studies, it should be verified that the results of the simulation do not contradict the analysis and are compatible with the objectives targeted, among them:

- a) Reduction of the VA criterion's tendency to concentrate;
- b) In principle, not to imply reduction for the capital city, based on the difficulties which such cities face and the verified decline in their participation coefficients as already analyzed, and because the revenue sharing criterion of the MPF does not favor them;
- c) Also in principle, not trigger an elevated increase for very small municipalities, as the MPF criterion is biased towards them.

These issues are only pointed out in this report, as the intention is not for a compared analysis considering the tax and intergovernmental revenue sharing system, contemplated in FFEB studies.

Table 13 – Municipal share impact in municipalities in the state of Paraná resulting in the hypothesis of reducing the ‘value added’ criterion and adopting the ‘population’ criterion – Municipalities classified in population brackets.

Classification	Municipalities	Participation	Participation in municipal share total		Per capita municipal share (R\$)		Variation in per capita municipal share:
			With current criteria	With simulated criteria	With current criteria	With simulated criteria	Simulated using current situation
Population brackets	Number	Total population					
Up to 5,000	111	3.8%	5.9%	6.1%	287	296	3%
5,001 to 10,000	110	7.6%	10.2%	10.5%	246	254	3%
10,001 to 20,000	90	12.3%	14.1%	14.8%	213	223	5%
20,001 to 40,000	48	12.8%	11.8%	12.9%	171	186	9%
40,001 to 100,000	22	13.4%	9.6%	11.1%	132	153	16%
100,001 to 200,000	10	11.6%	16.5%	13.6%	262	215	-18%
200,001 to 500,000	7	21.3%	18.6%	17.9%	161	155	-4%
> 500,001	1	17.2%	13.2%	13.1%	141	140	-1%
State total	399	100%	100%	100%	184	184	0%

Source: developed by authors based on data from the Secretariat of Finance of the State of Paraná/Caec.

The result of the simulation does not contradict any of the three concerns pointed out. Taking into consideration that the VA criterion tends to concentrate more than the population criterion, the first perception is that a redistribution of resources to medium and small municipalities would occur. Relevant impacts are noticed in the 20 to 200 thousand population bracket. Consequently, it is in this bracket that results should be checked to ensure that they are what expected, in particular in the sense of reducing the concentration level of the municipal share. The 48 municipalities belonging to the 20 to 40 thousand population bracket would have a 9% increase, 22 municipalities in the 100 to 200 thousand population would have a 16% increase and 10 municipalities, also medium sized, in the 100 to 200 thousand population bracket, would provide the biggest contribution to reduce current concentration, as they would have their municipal share reduced in 18%. For these brackets, the results are compatible with expectations.

The 10 municipalities in the 100 to 200 thousand population bracket proportionately speaking have more economic activity than population. They correspond to 11.6% of the state's total population and 16.5% of the municipal share currently, and according to the simulated scenario would suffer a reduction, instilling a more balanced and compatible distribution to its participation in population and municipal share. The gain of municipalities in the 20 to 40 thousand population bracket and in the 40 to 100 thousand population bracket would also mean more balance between population and participation in the municipal share. Improvement here is seen as equity in the per capita municipal share, with an increase from R\$ 171 to R\$ 186 in municipalities in the 20 to 40 thousand population bracket, R\$ 132 to R\$ 153 in the 40 to 100 thousand population bracket and a reduction of R\$ 262 to R\$ 215 in the 100 to 200 population bracket.

In extreme cases of very small municipalities (less than 20 thousand inhabitants) and big municipalities (over 200 thousand inhabitants), the impact would not be significant, in the sense that the very small will not gain much and the very big will not lose much. However, this perception needs to be put together with other studies and requires further investigation.

Curitiba, the capital city and only municipality in the over 500 thousand population bracket has a per capita municipal share of R\$ 141 with current criteria and it would go to R\$ 140 in the simulation which reduces the VA criterion and adopts population. This result is practically neutral as there is an accentuated balance in these two variables in the city, in other words, its participation in the VA and the state's total population is very close. It is important to mention that the inclusion of consumption in quantifying would have a positive impact in Curitiba's municipal share result, as its participation in the state's total consumption is higher

than its participation in the VA. This is opportune if considering that Curitiba's per capita municipal share is lower than the state average and its participation coefficient in force in 2007, of 13.9% is 29% lower than in 1996 and 19% lower than in 2000.

Similar comments are valid for the case of seven big municipalities in the 200 to 500 thousand population bracket. The impact indicates a not very significant reduction in relation to the current situation (4%). The per capita municipal share of R\$ 161 would be reduced to R\$ 155. As these municipalities present a per capita municipal share below the state average of R\$ 184, only by including consumption, could we verify if they recover the loss incurred by the inclusion of the population criterion. As there are only seven municipalities, some additional comments are needed, as this small number of uncommon cases distort the average. Let us analyze their profile.

São José dos Pinhás, municipality with high VA, namely from the automotive hub there, would suffer a reduction of 28%, but its per capita municipal share of R\$ 353, which would go down to R\$ 256, would still be very much above the state average. Foz do Iguacu, which concentrates VA from the generation of electric power, would lose 14% and its per capita municipal share of R\$ 203 would go down to R\$ 173, which would be below state average. Ponta Grossa would lose 8% and its per capita municipal share of R\$ 176 would go down to R\$ 162, an undesirable reduction for the expected purpose, as it is not an isolated case. Colombo, a dormitory city in Curitiba Metropolitan Region would have an increase of 70%, compatible with the purpose of favoring cities with such characteristics. Cascavel, Londrina and Maringá, big cities in the state's hinterland, with an expressive agricultural economic base, would experience an increase of 18%, 11% and 5% respectively, which is in line with the objectives targeted.

Small municipalities in the three first brackets, the last one with up to 20 thousand people, which together make up 80% of the state's municipalities, would experience an average increase of 4% in their municipal share. Although not very significant, this may not be necessary if considered that their per capita municipal shares are very much above the state average. For a more conclusive analysis, we have separated the 311 municipalities in these three brackets in two groups: those that would suffer a reduction in municipal share due to the simulation and those that would see an increase. Classified in this way, the results for small municipalities in the three referred brackets are more consistent with expectations. 219 municipalities would have a positive result, varying from 130% gain, in the case of the first ranked municipality, to a neutral variation, in the case of last ranked municipality. On average, these 219 municipalities would have an increase of 13.6% in the municipal share, which in per

capita terms would go up to R\$ 240 in relation to the R\$ 212 achieved with the current criteria. However, 92 municipalities would suffer a loss of 10.4% on average, with the highest reduction at 32.2% and the lowest at 0.3%. As these 92 municipalities have an average per capita municipal share of R\$ 357, which would drop to R\$ 320, an average gain of 4% is noticed when the result of the simulation is analyzed visually for the three brackets, hiding the desired result, which is reductions in municipalities which have the highest per capita municipal shares.

It was said that small municipalities are favored in the MPF current revenue sharing criterion. In this sense, our concern is that they do not gain so much with the inclusion of population in the imposing criterion of the municipal share. As well as comments already made, another aspect that draws attention is the fact that these small municipalities are benefitted with the criteria adopted by the state of Paraná in the autonomous fraction of the municipal share, in particular with the linear criterion, which distributes 2% in equal shares. On top of this strange criterion, small municipalities benefit from criteria applied to the value of agricultural and livestock production, rural population and number of rural properties. Thus, the hypothesis for changing the MPF revenue sharing criterion is suggested in another FFEb study. The state of Paraná may use the fraction of the municipal share regulated by state law to develop criteria which allow for more equity among municipalities in the state, reducing the gain of small municipalities that have a per capita municipal share very much above state average. Actually, this could be pertinent even without a wider reform of the intergovernmental revenue sharing system.

The results in table 14 are analyzed below. This table contemplates the same indicators of the previous table for other selected sample which are relevant to the analysis, as they allow for some specific characteristics to be verified, more extreme cases which were diluted in a more comprehensive classification using population brackets.

It is useful to separate municipalities with per capita municipal share above the state average from those with below average per capita municipal share to verify the impact of the simulation, regardless of size, in other words, population. This group also shows the results aimed for. It is noticed that municipalities with below average municipal share would be favored. The 150 municipalities with per capita municipal share below the state average would have an average increase of 26% and the 249 municipalities with per capita municipal share above the state average would suffer an average reduction of 2%; in other words, only 2% of loss is enough to enable a relevant increase for below average municipalities. Table 14 also shows how distribution would become more equitable.

Table 14 – Simulation of municipal share impact on municipalities in Paraná with reduction of the ‘value added’ criterion and adoption of the ‘population’ criterion: selected cases

Selected Cases	Characteristics	% in Total Population	% in Municipal Share Total		Per Capita Municipal Share - R\$		
			With Current Criteria	With Simulated Criteria	With Current Criteria A	With Simulated Criteria B	B / A - In %
Weighted Average of:							
399 Municipalities of the State		100%	100%	100%	184	184	0%
249 Municipalities with Per Capita Municipal Share Above State Average		30.2%	51.4%	44.8%	299	292	-2%
150 Municipalities with Per Capita Municipal Share Below State Average		69.8%	48.6%	55.2%	133	167	26%
Curitiba	capital city	17.22%	13.19%	13.08%	141	140	-1%
Araucária	highest per capita municipal share; oil refinery	1.14%	8.21%	4.58%	1,329	741	-44%
Saudade do Iguaçu	second highest per capita municipal share; electric power generation	0.04%	0.22%	0.14%	889	567	-36%
São José dos Pinhais	automotive sector: Curitiba metropolitan region	2.51%	4.82%	3.50%	354	256	-28%
Foz do Iguaçu	electric power generation; tourism	2.98%	3.27%	2.80%	203	173	-14%
Jaguariaíva	paper mills for printing; no incidence of ICMS	0.34%	0.54%	0.44%	295	242	-18%
Sarandi	lowest per capita municipal share	0.85%	0.16%	0.41%	35	89	155%
Almirante Tamandaré	dormitory-city	1.09%	0.34%	0.62%	57	105	84%
Colombo	dormitory-city	2.23%	0.77%	1.31%	64	108	70%
Matinhos	Coast; 2 nd lowest per capita municipal share	0.32%	0.06%	0.17%	37	94	156%
Pontal do Paraná	Coast; 4 th lowest per capita municipal share	0.18%	0.04%	0.10%	42	97	130%
Piraquara	area with watersheds; Curitiba metropolitan region	1.00%	0.66%	0.98%	121	181	50%

Source: developed by authors based on gross data from the Secretariat of Finance of the State of Paraná/Caec.

Five selected cases (Araucária, Saudade do Iguaçu, São José dos Pinhais, Foz do Iguaçu and Jaguariaíva) are from municipalities with elevated concentration in VA generation due to its industrial profile. The reduction in its respective municipal shares would contribute to a more equitable distribution in the whole state. There would be a 44% reduction in the municipal

share earmarked for Araucária, municipality with the highest per capita municipal share, 7.2 times more than the state average, an extreme case justified by its elevated industrialization level, which includes an oil refinery. Even with a 44% reduction, its per capita municipal share would still be four times the state average. Similar considerations can be made of Saudade do Iguaçu and Foz do Iguaçu, municipalities that generate electric power and would have a reduction of 36% and 14% respectively. São José dos Pinhais, although a highly populated municipality, shows a high VA concentration compared to its population, as a significant part of the state's automotive industry can be found there, and it would incur a 28% reduction with the simulated situation. Jaguariaíva generates elevated VA due to paper mills, which do not incur ICMS due to a constitutional device. Its per capita municipal share would drop 18% and even so it would still be above state average.

It is opportune to verify how some extreme cases would fare in relation to our criterion for analysis, as they would present significant gain in the municipal share, in an attempt to make the municipal share more equitable in the simulated scenario. These are the six municipalities with municipal share very much below the state average: Sarandi, Almirante Tamandaré, Colombo, Matinhos, Pontal do Paraná and Piraquara. Sarandi, with a per capita municipal share of only R\$ 35 would have its municipal share more than doubled, experiencing a 155% increase and even so would only reach R\$ 89, which is still very much below state average. Also, as expected, two uncommon and severe cases which the inclusion of the population criterion would help solve, are the cases of Almirante Tamandaré and Colombo, dormitory municipalities in Curitiba Metropolitan Region. Both have a large population, but small economic base and would have an increase of 84% and 70% respectively, bringing their municipal share closer to the state average.

Two of the selected cases are municipalities on the coast, with an even smaller economic base from activities that incur ICMS; therefore, with little VA fiscal generation. Matinhos, which has the state's second lowest municipal share and Pontal do Paraná, the fourth lowest. Both would have an expressive boost with the inclusion of population in the revenue sharing criterion, increasing 156% and 130% respectively.

Piraquara, which would have a 50% increase in its municipal share, is also a municipality in the Curitiba Metropolitan Region and it has watershed reserves which are used in the water supply for Curitiba.

5. FINAL CONSIDERATIONS

As seen in this report, the ICMS municipal share, the main system for the transfer of resources from the state to municipalities, has been using the same VA criterion for 35 years for distributing the municipal shares. Firstly, from 1972 to 1980, totally based on the VA generated in the municipality and from 1980, mitigating the VA with criteria established by state law for the 25% earmarked for the municipal share.

We have seen that the VA has a tendency to concentrate and the 25% of the autonomous fraction regulated by the state is not sufficient to reduce this concentration satisfactorily. In the country average, the redistributive criteria are the most used in state norms, seeking for a more equitable distribution of the municipal share.

Although the concentration characteristic of the VA, it is considered pertinent keeping it in the revenue sharing criteria of the municipal share, but with lower weight than currently, allowing for the adoption of the consumption and population variables in the imposing fraction of the norm. The VA is a criterion which has been used for many years and it should not be completely suppressed, among other reasons because:

- a) Infrastructure costs of big metropolises indicate that we should consider the principle of origin (VA) in the revenue sharing criterion of the municipal share;
- b) The VA is very consolidated in state administrative practices and it has legal base, although it presents operational and conceptual difficulties, to which legislative enhancement measures were proposed in this paper;
- c) The VA is a statistical survey and has been used as proxy for municipal income, as well as a very useful economic indicator for governmental action planning.

In this way, supposing that the VA is kept in the revenue sharing criteria of the municipal share, it needs to be enhanced due to the difficulties pointed out. It is the case of not enough detailing in CL 63/90, which does not offer all necessary elements for the calculation of the VA of certain activities taxed by the complex ICMS legislation, which leads to states adopting other different forms for appropriation of the VA. In this sense, at least two issues need to be mentioned. One of them is that CL 63/90 needs to be altered/enhanced to:

- a) Specify better how the VA for certain activities should be determined;
- b) Harmonize the conceptual interpretation and procedures for calculating the VA on behalf of states;

- c) Provide legal assurance to involved agents (states that need to calculate the VA, municipalities that compete with each other for the same slice of resources and taxpayers who supply information);
- d) Strengthen, from the institutional perspective, state sectors in charge of calculating the VA, reducing the margin for legislative interpretation, political interferences, the industry of municipal legal advisory offices and even, the risk of corruption associated to surveying the VA.

The CF and CL may also be altered to incorporate something already verified in practice, which is the determination of the VA for certain activities by the consumption and not the production criterion. This is a conceptual inconsistency, because if the calculation took into consideration the consumption of certain activity, the variable is not compatible with the VA concept. Thus, it is more appropriate to suppose that the VA does in fact lead to some inadequacies, as there is nothing binding what happens between the VA and population when a big economic activity is conducted in a municipality with a small population, which as a result has less budget pressure over the public services it has to offer.

A less arbitrary way of addressing this issue, instead of forcing an interpretation of CL 63/90 is to assign a lower weight to the VA and incorporate other variable/variables in the imposing fraction of the norm, as it was pointed out, increasing the fraction regulated by state law does not ensure that the concentration of VA will be reduced.

It is important to have in mind that keeping the VA with lower weight and enhancing the legislation that regulates it, will allow for uniform national procedures, which together with the adoption of as a consumption revenue sharing criterion in the municipal share still gives a 'return' quality to the municipal share. However, harmonized practices should be adopted to determine the VA and reduce its concentration, based on the importance assigned to the consumption and population criteria.

If population is also adopted – to make the inclusion of a redistributive variable in the municipal share mandatory -, the result will be a mix of criteria, enabling the objective of reducing the concentration of the municipal share to be reached. However, part of its return feature would be kept, supposing that the MPF would play a redistributive role. It is important to note that the state that wants to increase the redistributive feature even more, will be able to do so in the 25% earmarked for state regulation (whose objective will be easier reached to the less concentrating characteristic of the imposing fraction of 75%) and by the fact that the population (if moved to the imposing fraction of the municipal share) will leave room in the

fraction regulated by state law for the adoption of criteria which allow a more balanced redistribution from the spatial point of view.

In relation to the weight assigned to the VA, consumption and population in the 75% is an aspect which still needs simulations – as well as the ones conducted for the case of Paraná in this study - , and should be done so at the level of FFEB for the 2007-2009 Work Program. In particular in relation to the consumption variable, due to state information systems not allowing for consumption to be calculated by municipality, it was not possible to simulate and verify the impact of including this variable in the municipal share criterion, *vis-à-vis* the current VA system. We said that if this variable was included, the states can start to request additional information from taxpayers to make calculating the municipality's consumption easier. What can be said for now is that as consumption is less concentrated than the VA, it leads to different allocations of resources.

This topic should be studied further in the FFEB Work Program with FGV, not only for aspects related to the consumption criterion, but also in relation to all criteria for the municipal share. The Work Program of the first two fiscal periods did not prioritize the municipal share, as emphasis was given to studying an equalization system to replace the revenue sharing criteria in MPF and SPF.

A line of study which needs further investigation is related to the size and criteria autonomously regulated by state law. Certainly, the diversity in reality and situations in the country, demand that some of the municipal share be earmarked for state autonomy, allowing states to adopt criteria they seem relevant. Keeping in mind that the current 25% established by state law do not need to include population and in the hypothesis that this variable be included in the imposing fraction, it is important to establish whether the 25% earmarked for state regulation should be kept or altered.

On top of the impact from the mix value added + consumption + population, the studies should consider the impact other alterations to the tax and revenue sharing systems have over the municipal share. Some issues mentioned here lead to a different result than the current municipal share, even without changes to the legislation, be it for calculating the VA, or adopting the consumption and population criteria.

It is necessary to take into consideration that the VA criterion tends to be distributed diversely, with the inclusion of all services subjected to state VAT, as proposed in another FFEB document (2007) addressing an alternative scenario for the tax system reform. The inclusion of the services in the state VAT favors exactly the municipalities that depend the most on revenues collected from the ISS, as proportionately they are the ones that render and receive

services the most. This aspect aids the problem of capital cities and reduces the level of VA concentration, binding it to the industrial sector. Taking into account that the bigger municipalities are the ones that resist the extinction of the ISS, this is an aspect to be considered in negotiations and quantifications.

It is also important to have in mind that the discussion about the municipal share criteria and the inclusion of services in the base of the state VAT should facilitate understanding. Optionally, the inclusion of services in the state VAT could result in an increase in tax collection equivalent to the current municipal collection of ISS, by fine tuning state VAT tax rates. The increase in state VAT collection would bring an automatic and proportional increase in the values of the municipal share, even with the 25% weight of the state VAT.

However, there is also the possibility of associating the extinction of ISS to an increase in the municipal share of over 25% of the state VAT, in proportion sufficient to accommodate the alterations in the tax system and the revenue sharing system in the Federation.

Care is necessary with this alternative as in the 1988 Constituent process, the municipal share was increased to 25%, as the ISS would be extinguished and the ICMS would incide over all services. The ISS was kept, the ICMS does not incide over all services, and still the municipal share was established in 25% (FFEB, 2007).

Another aspect, essential to any proposal to alter the tax or revenue sharing systems needs to be highlighted as it was not mentioned in this report. New studies and simulations by FFEB should consider a transition period for the new model of the municipal share to be adopted. This transition period should be compatible and in harmony with the other alterations to the system. For example, the rhythm at which the consumption variable is adopted in the municipal share should be compatible with the rhythm at which the principle of destination is adopted in the state VAT. In other words: as the principle of destination is included in the state VAT, the consumption variable is included in the municipal share criterion, so that both models would be finalized at the same time, after the transition period. Taking into consideration that the current ICMS system in interstate operations is already a mix of origin and destination, the speed at which consumption would be adopted could be even faster than the one mentioned.

An issue for guiding and justifying the choices pointed out in this report should be addressed. This issue could be raised in the extent that the need to bind transfers to subnational governments (and in this case, municipalities) to an equalization system emerges. Should the

municipal share be included in the equalization base for resources or should it be kept as an independent flow?

This question is based on the fact that the ICMS municipal share corresponds to over a third of the financing of Brazilian municipalities. The possibility that its criteria be altered should be considered, as it would act in a less concentrating way, making distribution less bound to the economic capacity of municipalities. This is proposed by using the population criterion in a good part of the distribution, which reduces the concentration of resources, but does not eliminate the return quality of the municipal share, as already mentioned.

In discussions held at the level of FFEF, the guideline of the proposed alterations for the tax and revenue sharing systems is in order to ensure that the municipal share continues to play a return role, but in smaller proportions. The redistributive role should be played namely by federal transfers, through an equalization system. The migration of the distribution of the main state tax to the equalization system would not be appropriate as it demands a number of requirements which need to be implemented, one of the most complex being how to measure municipal expenditure needs or capacity¹⁰. Even if this was appropriate, the implementation of a wider reaching equalization system for the municipal share in the state tax, it should not occur at the same time and speed that the equalization system is adopted.

It is important to be aware that such choice implies in perceiving that only one part of the vertical transfer system would migrate to an equalization system, keeping the return quality to a certain extent of the municipal share system. In this way, the proportion of the imposing criterion of the municipal share, based on the VA or consumption, would be distributed according to criteria which take into consideration the other municipal revenues – be it from own revenues or transfers -; hence, it should not be expected that they play the role of counterbalancing disparities in the final per capita expenditure capacity of municipalities. This is why adopting the population criterion as mandatory is pertinent, as bringing the per capita expenditure capacity closer is inherent of the population criterion.

¹⁰ Per capita expenditure capacity of each Federated unit, specific equalization study in the *Cadernos Fórum Fiscal* No 3, 2006.

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ANNEX I – REVENUE SHARING CRITERIA OF THE ICMS MUNICIPAL SHARE, PER STATE

State/criteria/description	Weight
ACRE	
Population (only criterion agreed between all municipalities; index calculated per population bracket, like the MPF)	100%
AMAPÁ	
Value added	75%
Linear	7%
Own revenues	2.6%
Population	2.6%
Education (indicator: students enrolled in school)	2.6%
Health	2.6%
Most populated municipalities	2.3%
Planted area	1.4%
Preservation area	1.4%
Culture	1.4%
Area	1.1%
Note: Amapá does not calculate the VA due to operational difficulties. Until 2005, 100% of the municipal share was distributed in proportion to the collection of ICMS, with the participation indexes annually calculated until 2002 and ‘frozen’ since then. From 2006, it started to apply the 10 previous criteria (except the VA) for 25% of the municipal share, keeping the index related to the participation in tax collection the same, with a weight of 75%.	
ALAGOAS	
Value added	75%
Linear	15%
Population	5%
Area	5%
AMAZONAS (the state law that regulated the autonomous fraction was declared unconstitutional (ADI nº 2.728). As a result, the state has been using the coefficients calculated for 2004).	
Value added	75%
Linear	24%
Population	1%
BAHIA	
Value added	75%
Population	10%
Area	7.5%
Adjustment for municipality with preliminary index lower than 0.18001%	7.5%
CEARÁ	
Value added	75%
Education (indicator: expenditure on primary and lower secondary education over total current revenue)	12.5%
Linear	7.5%
Population	5%
FEDERAL DISTRICT (Waives the revenue sharing criterion for the municipal share)	

Continuum

ESPÍRITO SANTO	
Value added	75%
No of rural properties	7%
Agricultural production	6%
Area	5%
Health (indicator: expenditure with health and sanitation over total expenses)	3%
Health (indicator: advanced management in health)	2.5%
Health (indicator: participation in health consortium)	1%
Linear (linear distribution between the 10 highest VAs, if the municipality is engaged in advanced management of the Health System)	0.5%
GOIÁS	
Value added	90%
Linear	10%
MARANHÃO	
Value added	75%
Linear	15%
Population	5%
Area	5%
MATO GROSSO	
Value added	75%
Social coefficient (indicator: inverse of municipality's HDI multiplied by the inverse of HDI of all municipalities)	11%
Conservation unit/indigenous land (indicator: conservation unit index of municipality over the sum of conservation unit indexes of all municipalities)	5%
Population	4%
Own revenue (indicator: own taxation revenues of municipality over the same indicator for the total of municipalities)	4%
Area	1%
MATO GROSSO DO SUL	
Value added	75%
Linear	7%
Area	5%
No of electorate	5%
The environment	5%
Own revenues	3%
MINAS GERAIS	
Value added	79.68%
Linear	5.5%
Population	2.71%
Population of 50 biggest municipalities	2%
Education (indicator: students enrolled in school)	2%
Own revenues	2%
Area	1%
Food production (indicators: planted area, small producers and municipal support structure for production and commercialization of agricultural products)	1%
Cultural heritage	1%

continuum

Health (indicator: team and population catered for)	1%
Health (indicator: expenditure on health)	1%
Preservation area	0.5%
Sewage and garbage treatment	0.5%
Mining municipalities (indicator: participation of municipality in the Only Tax on Minerals in the Country in 1988)	0.11%
PARÁ	
Value added	75%
Linear	15%
Population	5%
Area	5%
PARAÍBA	
Value added	75%
Linear	20%
Population	5%
PARANÁ	
Value added	75%
Value of agricultural and livestock production	8%
Rural production	6%
Preservation area	2.5%
Area and quality of watersheds	2.5%
Area	2%
No of rural properties	2%
Linear	2%
PERNAMBUCO	
Value added	75%
Transfer flow stabilizer for municipalities with a reduction in the VA index (indicator: participation of municipality with positive difference among the VA indexes in year t-1 and year t in the sum of positive differences in the state for this same indicator).	17%
Garbage treatment and disposal	2%
Health (indicator: inverse of the child mortality coefficient)	2%
Education (indicator: students enrolled in primary and secondary education in municipal schools)	2%
Conservation unit area	1%
Own revenue (indicator: per capita tax collection of municipal tax)	1%
PIAUI	
Value added	75%
Population	12.5%
Area	12.5%
RIO DE JANEIRO (The calculation is done by the participation of the municipality in the total of municipalities in the respective region, with nine regions in the state)	
Valued added	75%
Linear	8.18%
Area	7.7%
Population	6.94%

continuum

Economic adjustment (indicator: inverse sum of population, area and valued added index of each municipality in relation to the region's total)	1.73%
Own revenues (indicator: % of municipality own revenue, from taxes under its taxing power, in the collection of ICMS in the municipality)	0.45%
RIO GRANDE DO NORTE	
Value added	80%
Population	10%
Linear	10%
RIO GRANDE DO SUL	
Valued added	75%
Area (when it is an area for environmental preservation, or flooded by dams, the area is multiplied by 3)	7%
Population	7%
No of rural properties	5%
Primary productivity	3.5%
Education (indicator: inverse of school drop out rate)	1%
Health (indicator: inverse of child mortality rate)	1%
Mutual collaboration/partnership project actions	0.5%
RONDÔNIA	
Value added	75%
Linear	14%
Geographical occupation of conservation municipalities	5%
Agricultural and livestock production	5%
Population	0.5%
Area	0.5%
RORAIMA	
Value added	75%
Linear	25%
SÃO PAULO	
Value added	76%
Population	13%
Own revenues (indicator: proportion in relation to municipalities' total)	5%
Planted area	3%
Linear	2%
Area flooded by electric power plants	0.5%
Preserved area	0.5%
SERGIPE	
Value added	75%
Linear	25%
SANTA CATARINA	
Value added	85%
Linear	15%
Note: an old law from the state establishes that the VA of the agricultural sector be 'adjusted' when it presents a variation below the variation of the VA from other sectors (industry and trade). As the 'adjustment' would have the 1983 agricultural and livestock production as parameter, this device is not being applied, in fact, this is due operational impossibility.	

continuum

TOCANTINS (criteria in force since 2007)	
Value added	75%
Linear	8%
Conservation and indigenous land units	3.5%
Basic sanitation, water conservation and garbage collection and disposal	3.5%
Population	2%
Area	2%
Environmental municipal policy	2%
Fire control and combat	2%
Soil conservation and management	2%

Source: state legislation, among others: AMAPÁ – Law No 322/1996, ALAGOAS – Law No 5.981/1997, CEARÁ – Law No 12.612/96, ESPÍRITO SANTO – Law No 5.399/97, MARANHÃO – Law No 5.599/1992, MATO GROSSO DO SUL – CL 057/1991, MATO GROSSO – CL 157/2004, consolidated until CL nº 177/04, MINAS GERAIS – Law No 13.803/2000, PARÁ – Law No 5.645/1991, PARAÍBA – Law No 20.219/1998, PARANÁ – Law No 9.491/1990, PERNAMBUCO – Law No 12.432/2003, RIO DE JANEIRO – Law No 2.664/1996, RIO GRANDE DO SUL – Law No 11.038/1997, RONDÔNIA – CL 115/1994, RORAIMA -- Law No 010/1991, SERGIPE – Law No 2.800/1990, SANTA CATARINA – Law No 7.721/1989 and alterations, TOCANTINS – Law No 765/1995.

ANNEX II – HOW TO CALCULATE MUNICIPAL CONSUMPTION

Municipal consumption may be obtained from economic-fiscal information supplied by ICMS taxpayers (or state VAT, if the ICMS reform is endorsed). Consumption is obtained indirectly, from the product's perspective, with elements that integrate the companies' businesses, in areas subjected to the state tax¹¹. What follows is a summary of the consumption equation, which is then detailed.

$C = (S - E) + A + N$, where:

C = municipality consumption

S = total value of outgoing operations obtained from taxpayers in municipality M_n , destined to taxpayers and non-taxpayers in municipality M_n itself.

E = total value of incoming operations obtained from taxpayers in municipality M_n , with origin in municipality M_n itself.

A = value of incoming operations obtained from taxpayers from Municipality M_n , with any origin, destined to the fixed asset and consumption or use by respective taxpayers.

N = value of purchases by non-taxpayers at Municipality M_n , from other municipalities in the same or other states.

$M =$ municipality $M_1, M_2, M_3, \dots M_n$

1. Explanation of economic-fiscal information used for calculating municipal consumption

S = total value of outgoing operations obtained by taxpayers in municipality M_n , destined to taxpayers and non-taxpayers in municipality M_n itself.

These are accounting values (taxed and non-taxed operations). The total of outgoing operations includes sales, transfers, returns and other 'outgoing operations'. In other words, such operations and services do not depend on its use, contemplating goods, the subject of trade, as well as other products which are accounted under fixed assets or for use and consumption. The total of outgoing operations refers to outgoing operations obtained from taxpayers and non-taxpayers of this tax, as well as taxes paid by the final consumer.

E = total value of incoming operations, obtained by taxpayers in municipality M_n , from municipality M_n itself.

¹¹ Technicians from Cotepe/ICMS (Quantification WG) calculated the consumption of states in 1999, on occasion of the quantification of impacts from PEC No 175. They based it on information supplied by states, which in turn were supplied by taxpayers themselves.

It also refers to accounting values (taxed and non-taxed operations). It includes incoming inputs, as well as finished products, acquired for transformation or commercialization. It also includes incoming goods destined to the taxpayer's fixed asset, or for his/her own use and consumption, as long as these acquisitions are from the municipality where the taxpayer resides.

A = value of incoming operations obtained from taxpayers in municipality M_n , from any origin, destined to the fixed asset and use or consumption of the respective taxpayers.

N = value of purchases obtained from non-taxpayers at municipality M_n , from other municipalities in the same or other states (see sub item 3.1).

2. Analysis and clarifications about variables that are used for calculating municipal consumption

2.1 Why does "S" only address the total value of outgoing operations obtained from taxpayers in municipality M_n , destined to taxpayers and non-taxpayers in municipality M_n itself?

Because outgoing operations and services, which have the 'rest of the world' as their destination do not concern the consumption of municipality M_n ; in other words, it will be consumed, renegotiated or employed in another municipality's productive process. Therefore, the equation only provides for outgoing operations of municipality M_n destined for municipality M_n itself.

2.2 Can everything under "S" be considered consumption?

No. Note that "S" (total value of outgoing operations) has operations and services which may or may not be destined for final consumption. Of total outgoing operations in municipality M_n , a fraction is destined to consumption (families, governments and companies), but a fraction is still considered intermediary. For example, it could be the case with raw materials or inputs. In this way, it will still be the subject of one or more subsequent operations. It may go through a close deposit, a mere transfer, a remittance to industrialization, and an operation in the partnership system, etc. Thus, the "S" variable corresponds to final and intermediary consumption.

2.3 Why and how should intermediary consumption be included in the "S" variable?

Intermediary consumption may not be considered consumption to avoid dual counting. For example, a cotton shirt: only one operation, destined to the final consumer should be accounted. Before it becomes a shirt, several operations were conducted, i.e. operations with

crude cotton bundles, cotton threads, textile material, dyeing the shirts, trading them at the wholesaling level, until they finally make it to the final consumer. Remember that for the VA to be calculated, the value of incoming operations is deducted from the value of outgoing operations, among other details, before it is determined.

As the idea is to obtain the final consumption, outgoing operations conducted by taxpayers not directed at consumption will consist of incoming operations in the taxpayer's establishment, which will be deducted from outgoing operations, as in variable "E" (total value of incoming operations). The most important thing to keep in mind here is that " $C = S - E$ ", or the total value of outgoing operations for the municipality, minus the total value of incoming operations of the municipality, equal to the municipality's consumption. In simpler terms: what leaves and does not come back because it was left along the way, in other words, consumed.

By calculating " $S - E$ " everything which was not destined for final consumption is eliminated from the 'total value of outgoing operations'. In other words, 'intermediary consumption' is deducted from the 'total value of outgoing operations' (raw materials, parts, components, inputs in general) and will be the subject of one or more subsequent outgoing operation.

Variable "E" is the simplest and most direct form of excluding intermediary consumption. However, the fact that it also excludes incoming operations destined to the taxpayer's fixed asset, use and consumption draws attention, as these are elements that could also be considered in consumption, depending on the concept aimed for. Thus, acquisitions for fixed assets, use and consumption should be brought back to the equation, which is done through variable "A".

2.4 What type of consumption is obtained from " $C = S - E$ "?

For the moment: final consumption of families + government consumption + consumption of companies which do are not liable for the tax; in other words, it just does not yet include, companies that do pay the tax, as the same was excluded with operations in variable "E". In other words, by deducting "A" from "S", all incoming operations are deducted, including those destined to the taxpayer's fixed asset, use and consumption.

2.5 Why does "E" only address the total value of incoming operations obtained from taxpayers in municipality M_n , **from municipality M_n itself?**

Because everything that comes into municipality M_n , obtained from taxes from the 'rest of the world' (other municipalities in the same state, other states, other countries) does not

constitute the consumption in municipality M_n . They are still intermediary operations; thus, are not included by “E”, which considers only the total value of incoming operations from municipality M_n . The fraction of incoming operations from the rest of the world which is not included in “E” and needs to be included in “S – E” at some point, is the type of incoming operation which does not leave later, in other words, it is part of acquisitions by taxpayers for their fixed assets, use or consumption (consumption of companies), as already mentioned. If the concept of municipal consumption aimed for is comprehensive, then the fraction corresponding to the companies’ consumption may be captured, adding “A” to the municipality’s consumption.

2.6 What type of consumption is obtained by (re)introducing “A” to the equation?

Fixed assets, use and consumption of taxpaying companies should be part of the municipal consumption, because consumption obtained from “ $C = S - E$ ” has fixed assets, use and consumption of non-taxpayers. Therefore, it is pertinent to contemplate this consumption fraction related to taxpayers.

As consumption is obtained indirectly, through information which integrates the state tax systems, where the calculation of the VA takes place, reflection is needed to obtain a result compatible with the concept aimed for. It is possible to enhance the municipal consumption calculation with information from the equation, captured in variables “A” and “N”.

Other types of consumption or investments should or not be included, depending on the concept aimed for. For example, goods destined to the companies’ fixed assets, is the type of incoming operation which can have any origin (the municipality itself, other municipalities, other countries) and has no subsequent outgoing operation. Generally, this good will go into the company and will no longer leave, except under the condition of used asset, as it was not acquired with the aim of being sold. It is an inversion of companies, from the perspective of national accounts, which integrates the gross fixed capital.

As verified in the equation, the value of incoming goods destined to fixed assets is added to municipal consumption. The purpose is to reach a more comprehensive concept of consumption, but this variable of the equation may be not be considered in case a more restrictive concept is aimed for, not including the investments of companies. However, it would also be necessary for the equation to be totally recomposed, as already mentioned, choosing a more restrictive consumption concept needs to take into account that “S – E” reaches the consumption of companies that do not pay the tax and the consumption of governments. “S”

also inverts the families. For example, vehicle acquisition is accounted under family consumption.

Thus, with the available elements it is relevant keeping the equation as proposed: $C = (S - E) + A + N$. Type of consumption obtained is the consumption of families, governments, companies that do not pay the tax and companies that do pay the tax.

2.7 How do we get “N” to complete the equation?

The values of purchases made by non-taxpayers in municipality M_n from other municipalities in the state, and in other states, is a difficulty faced and explained in sub-item 3.1.

2.8 Should stock be considered when calculating the consumption equation?

In order to calculate the VA, many states consider stock variation, adding incoming stock at the beginning of the base year to which the information refers, deducting it from the final stock at the end of the fiscal year. It is possible to enhance the consumption equation adopting the same procedure in “S” and “E”.

3. Limitations and difficulties to obtain some variables for the municipal consumption equation

Some limitations and difficulties bound to the consumption equation are operational. Next, some restrictions are commented on, with the aim of verifying if it is possible to indicate alternatives to overcome them, and when not possible, to what extent do they compromise or not the capability of calculating municipal consumption.

3.1 Purchases by non-taxpayers

“N” = value of purchases by non-taxpayers in municipality M_n from other municipalities in the state and in other states.

It is one of the elements of the consumption equation which is not available in the economic-fiscal information systems. Purchases by non-taxpayers in other municipalities in the state and in other states are not in “S” because non-taxpayers do not provide information to the fiscal authorities, “S” outgoing operations are not declared.

For a more comprehensive and complete municipal consumption concept there is at least one way of addressing this restriction: adopting the same methodological procedure used to

consolidate the interstate commercial balance between states¹². This consists of considering ‘purchases by non-taxpayers’ as information related to the ‘sales by taxpayers which are destined to non-taxpayers’. In other words, considered as ‘incoming operations by non-taxpayers’ what taxpayers inform that they sell to non-taxpayers.

However, what can be solved with the suggestion from a conceptual perspective faces an operational barrier. There is no way of requesting that taxpayers (from the same state or other states) be made to inform all their outgoing operations in enough detail, which would make identifying outgoing operations destined to non-taxpayers possible, per municipality of destination (any municipality in the country) of the non-taxpayer.

Therefore it is best that the consumption equation be left incomplete, as an estimate for consumption may not be obtained from the product perspective. In other words, the calculation of consumption is indirect, which will not include the fraction of consumption of those companies that are not part of the state taxpayers’ universe, when they purchase outside municipality M_n . It also means that the consumption of companies in the consumption equation is related to the consumption of companies registered in the tax and that provide the fiscal authorities with information. This also happens with the fraction of consumption of companies which are not registered for the tax, as long as purchases are made in their own municipality.

It is important to clarify that the calculation for the VA also does not consider purchases (incoming) by non-taxpayers. As a result, the result for the VA obtained for calculating the municipal share is overestimated, as it does not deduct from the outgoing operations, purchases (incoming) made by non-taxpayers of ICMS. This is one of the reasons why it is called ‘fiscal added value’, as it is different from the national accounts concept.

3.2 Detail of outgoing operations bound to municipality M_n and incoming operations coming from municipality M_n itself.

“S” = total value of outgoing operations by taxpayers in municipality M_n destined to taxpayers and non-taxpayers of municipality M_n itself.

“E” = total value of incoming operations obtained from taxpayers in municipality M_n from municipality M_n itself.

Generally speaking, the current models of the economic-fiscal information forms, required by the state from the taxpayers, does not include all elements necessary for calculating the municipalities’ consumption equation. For example, outgoing and incoming operations are

¹² Cotepe/ICMS, WG 43 – interstate commercial balance. The information is based on the Interstate Services and

not required to be provided according to municipality of origin or destination. The taxpayers already inform the destination of outgoing operations (in the state, to other states and abroad), but do not inform the destination if it is to their own municipality. As a result, this level of detail would need to start being requested. We would like to point out that it is not necessary for taxpayers to inform all municipalities of origin of their incoming operations, nor all municipalities of destination of their outgoing operations, but only those outgoing operations which are destined to their own municipality and those incoming operations from their own municipalities.

For now it is a serious restriction. However, as we have mentioned it is possible to set up the level of detail necessary, without significant operational difficulties. In fact, at the level of Sintegra (in ‘magnetic files’), it would be possible already to obtain the elements needed for the consumption equation, taking into account that the referred system has practically all the data in the fiscal invoice. In this way, projects are being developed, using the fiscal invoice and Sped to overcome these barriers in the calculation of municipal consumption, which leads us to believe that the restrictions pointed out in this sub-item may be overcome.

Therefore, restrictions related to the current detail of information indicate that adopting the consumption variable requires a transition period. It is important to keep in mind that the revenue sharing criterion of the municipal share is part of a comprehensive group of reform alternatives, which will also require a transition period in order to be implemented. This means that consumption cannot be adopted immediately, but could be included in the requirements necessary for the reform of taxes on goods and services and in the Federation revenue sharing.

3.3. Information provided by taxpayers in different tax regimes – *Simple Nacional*

Up to now, it looks like companies in the *Simple Nacional* tax regime will not be required to provide information on their ‘incoming operations’¹³. The fact that the *Simple Nacional* taxes profit means that maybe there is no intention of requiring information on incoming operations, the CL which established the tax regime has a device which arbitrates over the companies’ gross profit¹⁴.

Operations Guide (GI), complemented with information from the Sinief of the states.

¹³ CL 123/06, art. 25: micro and small enterprises registered in the *Simple Nacional* will submit one simplified declaration with socioeconomic and fiscal information to the Federal Revenue Secretariat, which will be made available to tax and social security authorities, following the deadlines and models approved by the Management Committee.

¹⁴ LC 123/06, art. 87: Paragraph 1 of art.3 of CL 63/90 comes into force with the following text: “ Art 3, paragraph 1: The value added will correspond to each Municipality: I – the value of outgoing goods, plus the values of the services rendered in its territory, deducting the value of incoming goods in each civil year; II – in the

This restriction (unavailability of information on incoming operations and arbitration of the valued added margin) brings implications for calculating consumption and the VA. It is a restriction that has no effect on elements of the consumption equation in particular, but presents difficulties in calculating consumption. It is important to mention that the “S” outgoing operations of companies in the *Simples Nacional* regime should be included in the municipal consumption calculation, even if the “E” incoming operations of these companies are not available. By omitting this information from companies the calculation for consumption is underestimated, even in the different mode, according to municipality. The participation coefficient of small municipalities would suffer the most. As a result, the information of the *Simples Nacional* taxpayers should be included when municipal consumption is calculated.

A favorable aspect is that for consumption to be calculated there is no need to arbitrate over the value added margins of taxpayers in the *Simples Nacional*, as established in CL 123/06, as this is only necessary to calculate the VA. For consumption to be calculated, a norm (the same CL which will provide for consumption) will be necessary to decide the proportion of the destination of outgoing operations of taxpayers in the *Simples Nacional* which will be considered in the final consumption; basically, the proportion of consumption in the total outgoing operations of establishments registered in the *Simples Nacional* of the municipality itself. For example, 80% of outgoing operations will be considered in the final consumption.

It is possible that the difficulties and restrictions pointed out in the *Simples Nacional* may be overcome in another context, not necessarily for solving the ‘problem’ of the consumption equation. Difficulties in efficient inspection are expected if the fiscal authorities do not have adequate information to control frauds. Thus, it is possible that companies in this tax regime be required to provide information in relation to the value of incoming operations or values in the ledger, as some of these elements are covered by CL 126/03¹⁵.

3.4 Final consumers purchasing outside their jurisdiction and purchases by taxpayers of the tax in municipality M_n destined to final consumers from other jurisdictions.

event of simplified tax, to which the sole paragraph of article 146 of the Federal Constitution, and in other situations where the control of incoming operations is discarded, **the value added is considered a percentage of 32% (thirty-two percent)** of the gross revenue (our comment).”

¹⁵ CL 123/06, art. 26: “micro and small enterprises registered in the *Simples Nacional* are obliged to: [...] paragraph 2: The other enterprises and small enterprises, as well as the provision in items I and II of the caption of this article shall keep the accounting ledger with its financial and banking transactions. [...] paragraph 4: the micro and small enterprises referred to in paragraph 2 of this article **are subject to other obligation to be established by the Management Committee** (our comment), with nationally uniform characteristics, without the establishment of unilateral rules by units participant in the system”.

These are direct purchases by final consumers, outside of the municipality where they reside.

The inclusion of the consumption criterion in the municipal share contributes to reducing the current distortion, relevant to the VA criterion, in its specific concentration aspect (small municipality with big plant). The calculation of consumption is done through the perspective of the product and not spent income. What taxpayers inform they sold will be considered consumption. As, for fiscal effects it is not common or plausible to require that the taxpayer identify the address or place of residence of the buyer when the operation is destined to the final consumer, the cross border shopping problem emerges (as well as the so called 'direct purchases'), which is final consumers who purchase outside of their jurisdiction. In the whole world, there is great concern with this issue, as it makes it difficult for the 'correct' allocation of the tax collected for consumption when using the principle of destination. In other words, it is difficult for compatibility to be achieved between tax collection and jurisdiction where consumers demand public services. When final consumers purchase outside their city, personally or on the internet, it has been impossible to adopt operational procedures which allow for the fraction of the tax collected in this transaction to be allocated to the municipality where these consumers reside.

In the whole territory (as the states' hinterlands), due to factors of scale, infrastructure, labor and clustering economy, 'commercial concentration hubs' have tended to emerge, with a vocation for sales destined to the final consumer¹⁶. The fact that this restriction cannot be avoided, means that the consumption may be obtained through the perspective of the product, as trade also seems to concentrate (shopping centers for example), namely in capital cities and metropolitan regions, and the consumption criterion also tends to concentrate.

It has been said that the VA tends to concentrate because it is a variable bound to the principle of origin. Consumption shows a tendency to concentrate because it is a variable that, from the operational point of view, does not manage to allocate consumption according to the principle perfectly. The factors that lead to the concentration of consumption and the VA should be considered, as they are of different nature and in this way, the proposal to include consumption in the municipal share still stands.

¹⁶ Here we call attention to an aspect: 'wholesaling commercial hubs' are not a problem for the consumption equation, as they do not contribute to the final consumption, they are not sales that are allocated to the 'wrong' jurisdiction. The consumption equation includes operations destined to taxpayers of the tax, in the way that sales (outgoing) to taxpayers will be the object of resale, and hence are not considered consumption of the municipality with the 'wholesaling hub', but consumption of the municipality where the final acquisition is made.