

**POLITICAL REFORM IN BRAZIL:
INVESTIGATION INTO THE IMPACT ON THE PARTY SYSTEM
AND ON REPRESENTATION**

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1. Introduction

On October 5th, 1988, the new Brazilian Constitution was proclaimed in Brasília, Brazil. Considered by many as the final milestone of a long democratic transition, the new Constitution has quickly become the target of analysis by scholars and experts as to the functioning of political institutions brought about by the National Constituent Assembly.

These authors highlighted that a combination of a presidency system (of plebiscitary character) and proportional representation (PR) from an open list would make the Brazilian political system collapse. Among the possible solutions presented to avoid this outcome was that both the governmental system and the method of selecting federal level deputies should change, in order to ensure that parties would have greater control over their members, both in the electoral and in the legislative arena. As to the first proposal, the claims were exhausted after the 1993 plebiscite, when the option for the presidential system won, accounting for 69.2% of valid votes⁵. However, if the option of changing the governmental system has become a non issue among Brazilian politicians and scholars, this did not occur with the electoral system. Criticism of PR and of other characteristics of the legislative elections became harsher, and the reform of electoral rule remains central to the agenda of political reform very much debated in the Legislature as well as by the general public. The corruption scandals as well as other "dysfunctionalities" of public power feed a consensus that the methods of selecting representatives need to be altered, ultimately aiming to change the quality of representation.

One can roughly point to two common objectives of such proposals: making the party system less open to the entry by small parties and the strengthening of political parties. We can list among the proposed changes the exchange of an open list to a closed one, the end of electoral coalitions, the

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⁵ After the 1993 Plebiscite concerning the governmental form and system, only two reform proposals on governmental systems were registered: PEC (Proposal of Constitutional Amendment) 20/1995 by Eduardo Jorge (PT-SP) and PEC 282/2004 by Roberto Jefferson (PTB-RJ).

creation of a majority system of uninominal district, or a mixed proportional system *a la* Germany.

In spite of the number of proposals and suggestions for changing the electoral system, none of these structural changes came to pass. Although the effect of such changes on electoral rule is known theoretically or practically through the experience of other countries, it is worth wondering what impact a transformation of such magnitude would bring to the Brazilian political scene. In seeking help to answer this question, we conducted two simulation exercises of substantial changes in the electoral system: the end of coalitions and the redesign of electoral districts. The first exercise consisted of simulating the outcome of the 2006 and 2010 elections for all Brazilian states where electoral coalitions were not allowed, whereas in the second one we simulated the results for the State of São Paulo if smaller districts were created with a magnitude ranging from 3 to 7. Our results show that, in both exercises, the biggest parties would benefit.

Besides this introduction, this paper is organized into three sections. In the first section we present a summary of criticisms of the Brazilian election rules in the post-Constituent that support reformist arguments, focusing on some core aspects: PR, the magnitude of the districts, the open list, and electoral coalitions. Secondly, we will present the methodology and results of the exercises. Finally, we will provide some considerations about the results and the proposals for reform in general.

2. Criticism of the Electoral System: A Brief Review of the Literature

Before we start to present the criticisms of the Brazilian election rules, we will explain how the legislative elections work. Brazil adopts an open listed proportional election system for selecting members to the lower federal legislative house. The seats are distributed sequentially, according to the D'Hondt formula, giving priority first to the parties who yield the highest means (number of votes divided by the electoral coefficient), and the remainder of seats are given to the parties with the highest electoral results. This system is also used for elections in State and municipal assemblies. Its main objective is to guarantee a more precise correlation between votes cast and parties' share of legislative seats. The proportional method also ensures better minority representation than the plurality system, because proportional representation minimizes its bipartisan bias, caused through Duverger's law (1987). This, in turn, gives a better representation of social and political cleavages, but also enhances multiparty tendencies, by allowing small parties to have a national reach.

Electoral coalitions are regulated in the Electoral Statute, which states, among other things: 1) that parties are free to enter into electoral coalitions; 2) that electoral coalitions may register up to double the number of candidates in elections than single parties; 3) that the allotted free media time (television and

radio) will be the sum of each electoral coalitional member's; 3) that the electoral coalition constitutes a legal entity for tax and judicial purposes, which means that, in practice, the coalition works as a provisional party in the legal system.

Seat assignment between the coalition members proceeds as if the electoral coalition is a single party. It means that to find out the seats awarded to a party or coalition in a proportional election, one must add all the votes cast inside a given district to all the parties and candidates in a coalition, thus treating it as a single party, then divide that value by the electoral coefficient – calculated by dividing all the valid votes casted in a given district by the number of seats –, casting aside, for the moment, the leftovers produced by the decimals. That gives you the electoral coalition's coefficient. The same thing can be done to single parties that have not entered into an electoral coalition, adding up the votes either cast to the party members, or simply to the party itself. The assignment of seats is done following the coefficients, in a descending order, and afterwards one proceeds to deal with the leftovers in the same manner. The seats acquired by a single party (who has not entered in an electoral coalition) or by an electoral coalition are then assigned to the candidates with the most votes inside the coalition, or inside a single party, if it has not entered into a coalition. It is important to note that the most voted candidates gets the seats assigned to the coalition, regardless of his party's total number of votes.

Brazil's electoral system was first analyzed to understand the consequences of institutional choices over the behavior of political actors, and its possible consequences to the consolidation of the democratization process. Roughly speaking, this pioneering debate that dealt with the consolidation of our institutions since the last re-democratization brought pessimistic diagnoses of the functioning of the Brazilian political system. There are several reasons for this, overlapping historical, structural, cultural and, above all, institutional issues. For the latter kind of arguments, most of our problems could be attributed to electoral arrangements. The rules used to transform votes into seats in Congress are the target of constant criticism for their permissiveness, and for alleged encouragement to a politician's individualism at the expense of political parties. Consequently, electoral reform has been based on this ever since.

The most general aspect of legislative elections, the proportional method, is questioned due to its impact as being considered particularly negative in the Brazilian case. It is known that the two "great families" of the electoral system – majority and proportional ones – cater to different principles and produce specific effects on the party system, governance and representation. As to the party system, these effects are widely covered in literature since the seminal study by Duverger (1987), exempting more details here. As to the other ones, we will summarize the debate that permeates the literature of Political Science.

The main point of the defenders of the majority system is that the PR splits power into many different units, since a large number of parties wins representation in parliament, which hampers the production of a stable majority that can govern. There would be a constant need of negotiations between the

Executive and other parties, which could lead the political system to crises of paralysis. Another criticism states that proportional systems hamper the accountability of the political system (Arato 2002; Shugart and Carey 1992; Powell and Whitten 1993). The reason would be that the need of the government to make coalitions in order to become a majority would transform the attribution of responsibility by the voter into a complicated task. This way, voters would not have an obvious correspondence between action and its responsibility, making the retrospective aspect of the vote difficult.

In turn, the main argument of those who defend PR is that representation, before being an issue of governance, is a matter of justice (Urbinati 2006; Santos 1987; Amy 2002). PR would be the only system that could give voice to minority groups from the population, because it does not adopt a territorial criterion to define an electoral district, thus making possible the representation of groups that are spatially disperse. A central issue is that representation should not be seen as a concession of the benefit from the majority to minorities, but as a condition which, if not met, makes the political system unfair. Thus, some authors suggest that certain electoral systems are more suitable than the others in view of the political and institutional context. Elster (2008), for example, argues that PR is desirable as a selection mechanism for members of the Constituent Assemblies due to the fact that it acts as a mirror of social diversity, enabling the formation of rational beliefs by means of the greater amount of information brought by constituents' heterogeneity. Amy (2002) argues against the notion of the instability of PR systems that majority systems can lead to radical changes in politics depending on who wins the elections. Another argument raised is that the PR "politicizes" populations by adding substance to political campaigns, introducing diversified viewpoints into the political arena aiming towards representation in parliament (Amy 2002).

Therefore, comprehensively, you can point to the majority system as the method that best facilitates governability, while PR is identified as a means of ensuring greater representation. Naturally, given the fear in literature developed in the 1990's that the newly established democratic order would once again be broken in Brazil, governability becomes a central concern. PR will then be accused of contributing to the fragmentation of Brazilian party system, thus generating, on the one hand, high costs for the government to approve its agenda, and, on the other hand, impairing the intelligibility of the party system and making the control of politicians by the electorate difficult (Lamounier, 1994; Ames, 1995; Mainwaring, 1991, 1999).

On the issue of governance and democratic stability, in the core of these analyses there was significant progress with the work by Figueiredo and Limongi (1999). In examining the decision-making structure in Congress, the authors confront the traditional claims of conflict among various powers, the excessive fragmentation and undisciplined behavior of parliamentarians, and deconstructing the premise that the legislative arena would be a direct reflection of the electoral arena. With this displacement they observe exactly the opposite of recurrent diagnoses: discipline rates are high, and the organization pattern of legislative work is highly centralized around the parties.

However, other elements must be added to the debate to compose a more general criticism than is done to the legislative elections. Consequences associated with the open list model, for example, deepen the perennial criticism as to the parties' fragility. Kinzo (2004) argues that, despite the stability of the functioning of the Brazilian democratic system, fragmentation provided by the proportional method remains a problem since it affects the intelligibility of the electoral process by the excessive number of candidates. Moreover, voters' influence in the selection of candidates would be a detriment to the control by party leaders of the nomination process. The open list would encourage the formation of personalistic leadership and the creation of non-partisan loyalties by politicians with their clientele, so that disputes for the legislature would more likely be among individual candidates than among parties, thus not producing solid political identities. More than that, the open list would encourage competition among candidates of the same party. A logical consequence of this reasoning would be the emptying of the parties' role as relevant actors in the structuring of the electoral competition for the legislature.

Criticism of electoral coalitions, in turn, goes along the same lines: parties would not be differentiating units in electoral competition, but there would be a myriad of candidates in electoral coalitions composed of various ideologically indistinct parties. For Kinzo, the practice of electoral coalitions would be a necessity because of the fragmentation of the party system, while at the same time it would be responsible for ensuring the entry of small parties. The reverse of the strategic resource to electoral coalitions by parties would be the lack of clarity of the party system to the electorate, which often does not have a clear picture of what party their votes benefit. Therefore, another negative consequence of electoral coalitions: the transfer of votes within the coalition would lead to distortions in the number of votes and the number of seats in the legislature, especially for small parties that would obtain space not corresponding to their electoral ballast (Fleischer, 1997). These factors would directly compromise the effective vertical accountability, increasing the disparity between the electoral party system and the party system in the arenas of decision making.

Still as far as the system's capacity to provide a representation link between politicians and voters, there is a recurring debate about the magnitude of electoral districts in Brazil, more than the debate over the incorporation of the major elements in the legislative elections, according to Cintra (2005). The most general argument is that the great extension of voting circuits would make accountability more difficult. In the absence of defined electoral bases, deputies would enjoy considerable autonomy in their parliamentary activity. Cheibub (2007) also points to another aspect of district sizes: the high level of competition in legislative elections. Going against the current argument about the personal vote, the author states that legislators do not have enough assurance that they will be awarded by retrospective voting, given the excessive competition and high campaign costs involved in these disputes that forces candidates into private fund-raising. In the same way, Cintra argues that the advantages of the open list in terms of a direct approach between politicians and voters with accountability do not manifest themselves given the magnitude of electoral districts in Brazil.

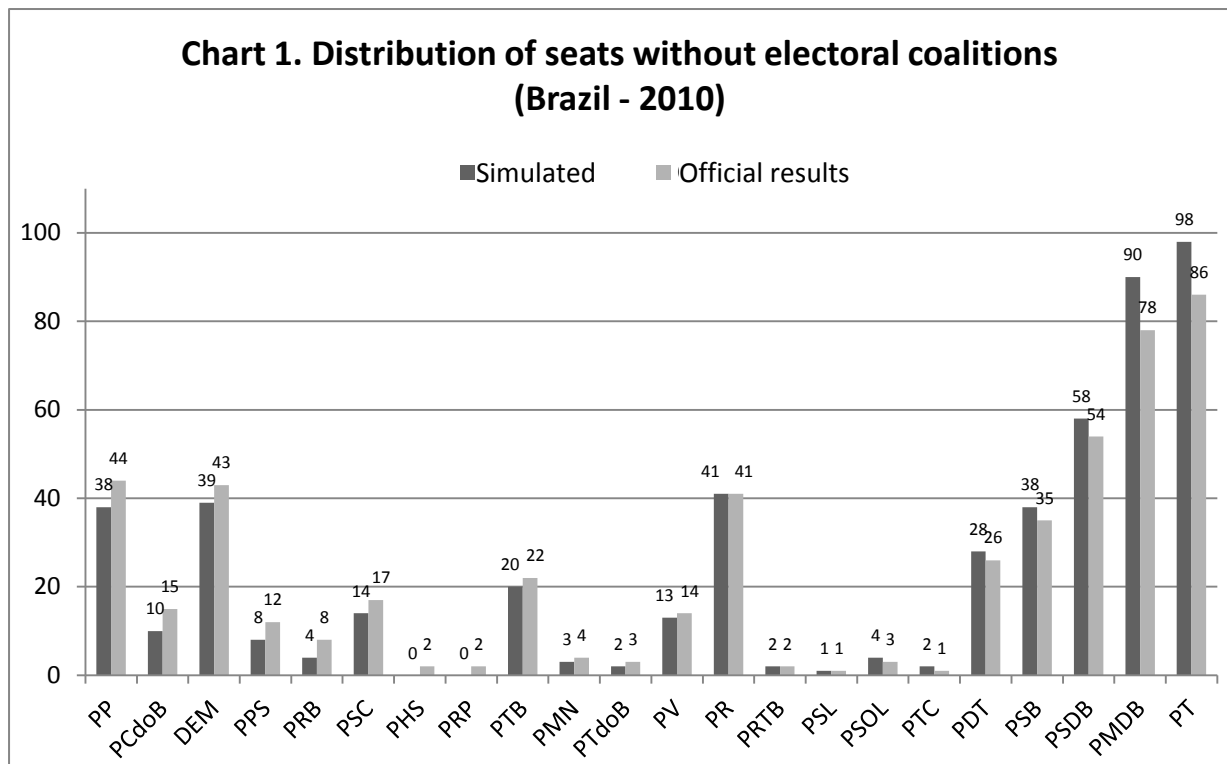
3. Methodology and Results

As mentioned in the introduction of this work, we performed two exercises of electoral system reform. The first one was aimed at verifying the impact of the end of electoral coalitions, while the second one was to evaluate the impact of the redesign of electoral districts for the State of São Paulo. In this section, we present the methodology used and the results obtained from such exercises.

Exercise 1 – Brazil without electoral coalitions

In this first exercise we intend to evaluate the impact of prohibiting electoral coalitions in the election results for the lower house in Brazil. As already pointed out, in the core of this proposed reform is the argument that electoral coalitions favor the non-proportionality of the political system and generate an increase in the number of small parties represented in the House.

To examine the effects of any prohibition, we disregard the distribution of seats in electoral coalitions, that is, we distributed the seats only considering the parties. The simulation results are presented in Chart 1.



Parties are ordered by the variation of the number of seats between the official result and that of the simulation, from the one that loses the most to the one that wins the most. It is observed that PHS and PRP are the only parties that would not get seats in the absence of electoral coalitions. PR, PRTB and PSL would not have their number of seats changed. By using the index of

effective parties by Laakso and Taagepera (1979) we obtain the value 10.43 for the official result and 9.09 for the simulation. It should be noted that the reason why a few parties fail to receive representation is that two of the parties that would lose the most representatives with the change are parties with average-sized representation⁶; nominally PP, PCdoB, DEM, PPS and PSC, besides the small PRB. Yet it is noteworthy that two small parties, PSOL and PTC, would have benefited the most with one more seat each, discounting the electoral coalitions.

Parties considered to be large, with over 50 seats, were all benefitted by the end of electoral coalitions. It is noteworthy that PT and PMDB, which formed the winning group in the presidential election, would be the two biggest beneficiaries of such a change, both would receive 12 more seats. Thus, even though the elimination of electoral coalitions does not contribute to a sharp decrease in the number of effective parties, the number of seats of allied parties to assemble a governmental coalition would be smaller, at least considering the 2010 election results.

In 2006⁷, the variation in the number of effective parties is from 9.3 for the official results and of 8.3 for the simulation. There are three parties that lose representation: again PHS, PAN and PRB. Some fluctuations occur in relation to 2010, but in general, the same parties lose or gain seats. Among the exceptions is DEM, which is among the biggest losers in 2010, but in 2006 it benefits with two more seats. PT, in turn, would have won only two more seats in 2006, in contrast to the 12 that it would have won in 2010.

The argument against electoral coalitions rests on the assertion that they exacerbate fragmentation. We observe, however, that the number of parties which would not get any representation is low. Therefore, the number of effective parties does not suffer from a significant reduction. Small parties are affected, but the over-representation of tiny parties does not seem so stark. The more substantial loss of seats is by average-sized parties. As expected, the biggest parties would benefit the most by the end of electoral coalitions. The effect that seemed to us more evident concerned the composition of the governmental coalition in 2010.

Exercise 2 - Redesigning the electoral map in the case of São Paulo

Our second exercise aimed to simulate the 2010 election results in the largest Brazilian electoral base, the State of São Paulo, covering voting districts of magnitude 3-8. We chose these parameters based on the argument by Cheibub (2007) and Carey and Hix (2011).

Cheibub claims that the Brazilian electoral system, a PR with an open list, gives voters the option of choosing the candidate and the party, as well as

⁶ Big parties were considered the ones that obtained at least 50 seats, and the average-sized ones obtained over 10 seats.

⁷ Results are attached at the end.

only the party itself. For this reason, he argues that the electoral system should have their more general setting maintained. He points out, however, that there is no reason why the system would not suffer from incremental change and suggests a change: decreasing the magnitude of Brazilian districts by a number varying between 3-6 seats. The reasons for such a change would be: lowering campaign costs, encouraging politicians to build bonds with their voters, and increase the degree of institutionalization of Congress (Cheibub 2007).

In turn, Carey and Hix perform a comparative study to determine what the ideal magnitude would be to maximize both representation and accountability of a political system. They reach the minimum value of 3 and the maximum of 8 seats. Using data from 81 countries covering the period 1946-2006, the authors note that an addition of 8 seats of representation, understood as the increase of parties represented in parliament, is not sufficient to justify an increase in district magnitude. If $3 < M < 8$ would maximize representativeness, Carey and Hix incorporate arguments arising from psychology (cf. Miller 1956) to justify this roof in M to maximize accountability. According to the authors, people can choose strategically with a maximum of seven options. In scenarios with a number of options higher than 7, people tend to act "honestly" and to choose in a non-strategic way since they would not know how to calculate the odds of each one of the possibilities of winning out. On the one hand, in systems where the number of viable candidates is higher than 7, accountability would be affected. On the other hand, in districts with low magnitude, voters would tend to act in a similar way that they would act in uninominal districts. Therefore, our choice of a magnitude 3-8 was supported both by Cheibub's suggestion and by the results of Carey and Hix.

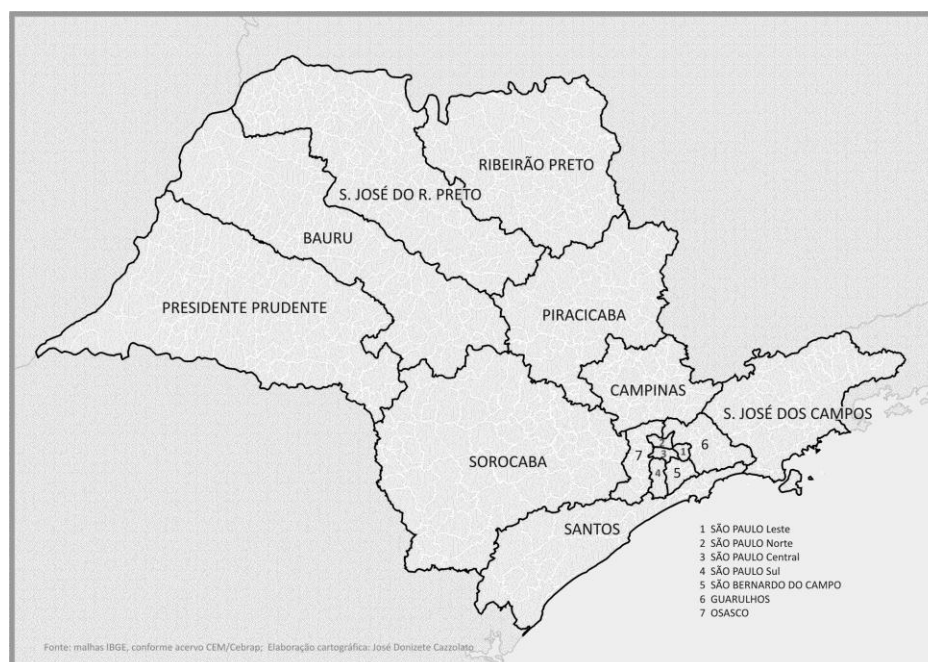
However, before presenting the method used to divide the State of São Paulo, it is necessary to add a comment on the study by Amorim Neto et al. (2011) that aimed to redesign electoral districts in 12 Brazilian states. Regarding a definition for districts, the authors used the software SKATER (Spatial Cluster by Tree Edge Removal) that "defines homogeneous and adjacent areas from the grouping of smaller areas, according to variables of homogeneity" (Amorim Neto et al. 2011: 56). The variables of homogeneity used were IDH-E (Index of Educational Human Development) and general IDH, calculated on basis of the 2000 Census. After using the software, the number of districts generated for each of the states varied from 8 (São Paulo) to 2 (Santa Catarina, Ceará, Maranhão and Goiás). The authors emphasize that "SKATER does not seek to maximize the number of areas created, but rather to homogenize them according to control variables" (ibid.: 57). Yet, it is in relation to the use of social identifiers that our criticism of the authors is approached.

By using variables such as IDH and IDH-E to create homogeneous districts, an undesirable effect was generated by creating districts with opposite social compositions: districts of municipalities with high IDH and others with low IDH. This process of separating types of municipalities can be harmful to the political system because, ultimately, more developed municipalities are being separated from less developed ones, which can lead to problems in creating and maintaining programs in the redistribution of assets and wealth.

Aiming to avoid a similar effect, we chose to draw electoral districts from already established geographic areas. For such a purpose, we used as a basis: Administrative Regions (RA), Government Regions (RG), and Metropolitan Regions (RM). The use of these regions gave us three advantages, one technical and two substantial ones. The technical advantage is that, despite some adjustments to the design of regions that have been made in order to use them as electoral districts, only the City of São Paulo, because of its size and population, had to be divided. On the other hand, the substantial advantages were that (1) as the regions are at least 30 years old and they are largely used for planning and executing state government policies, we eliminated the possibility of employing a criterion that could, formerly, favor any party. And (2), because they are used to produce policies, these regions also have strong regional cohesion (Cazzolato, 2009), an important element in the electoral system if it is considered that representation also takes place on territorial bases.

Thus, based on the three types of regions, 16 electoral districts were created: four of them originated from the division of the capital, three from the remainder of São Paulo's metropolitan region, seven from mixed merger of government regions and municipalities, and two maintained the metropolitan areas of Campinas and Baixada Santista. The smallest district, Marília, received approximately 1.8 million inhabitants and the largest one, Campinas, got 4 million. Figure 1 represents the 16 electoral districts⁸.

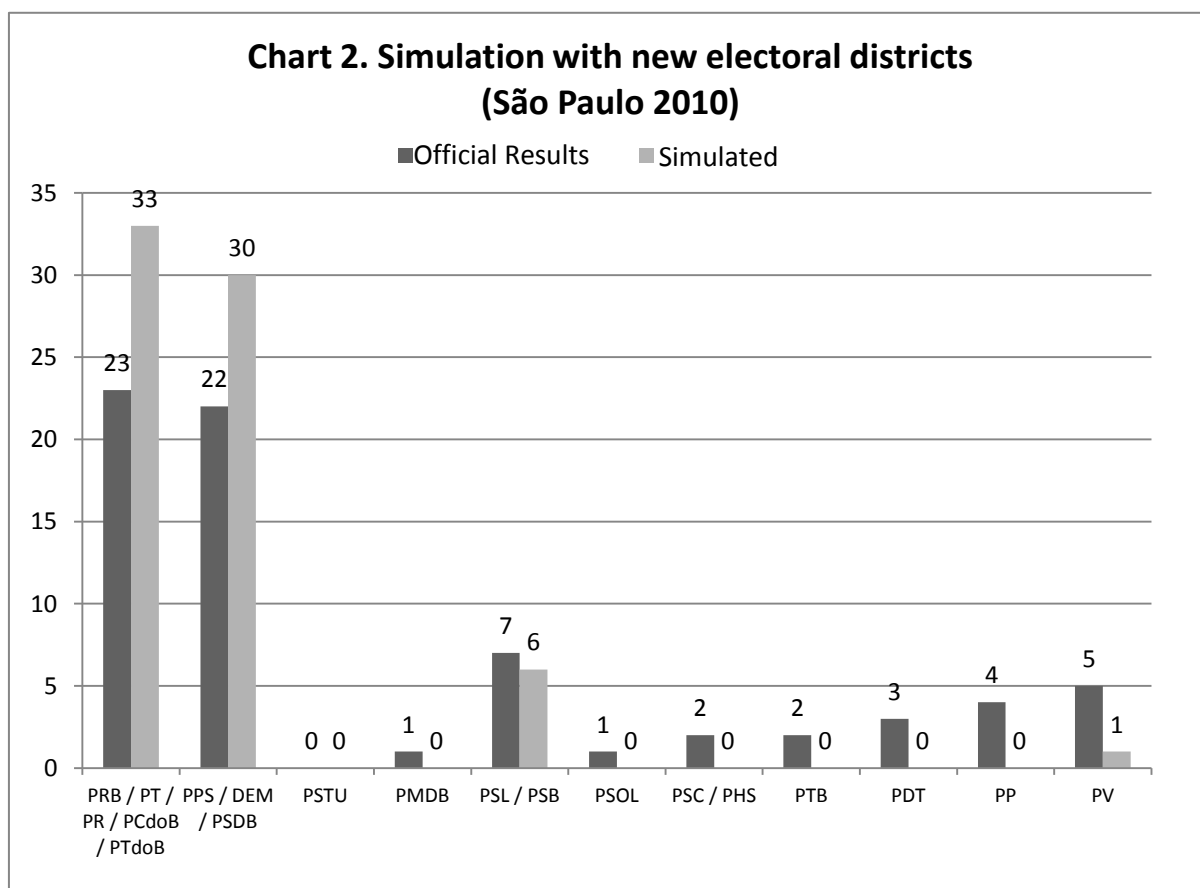
Figure 1: Map of the State of São Paulo Divided into 16 Electoral Districts



After projecting the districts, we carried out two simulations based on the results of the 2010 election to the Chamber of Deputies. In the first simulation, we used the electoral coalitions and compared the results obtained by coalitions

⁸ See annex for details on the process of designing electoral districts.

with the official ones. Our decision to use coalitions was due to the difficulty in distributing the seats among the parties in the coalitions because, as it was pointed out, in Brazil the distribution of seats within the coalition is performed based on the number of personal votes the candidate receives. That is, the order of the elected people depends on the number of votes received by candidates. Given this difficulty and the impossibility of knowing in what districts the party would launch each of the candidates, we chose to present the results by coalition. Chart 2 shows the comparison between the official result and the simulation.



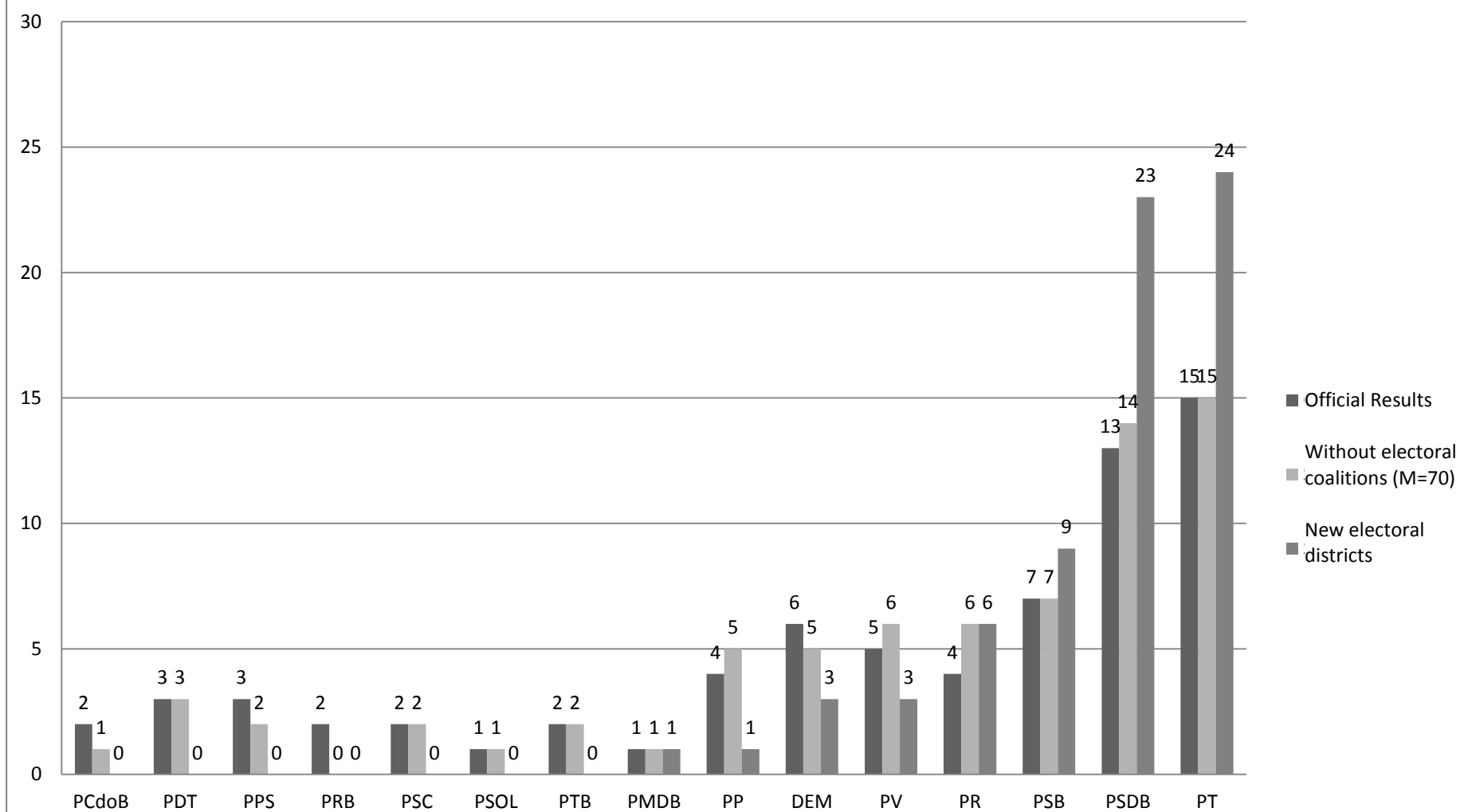
It is observed that the electoral coalitions that would benefit from the proposed change would be the ones with two parties that currently polarize the electoral dispute in Brazil: PT and PSDB. The PT coalition would obtain 10 seats, while the PSDB, would have 8. All the other electoral coalitions and parties that competed alone would lose seats.

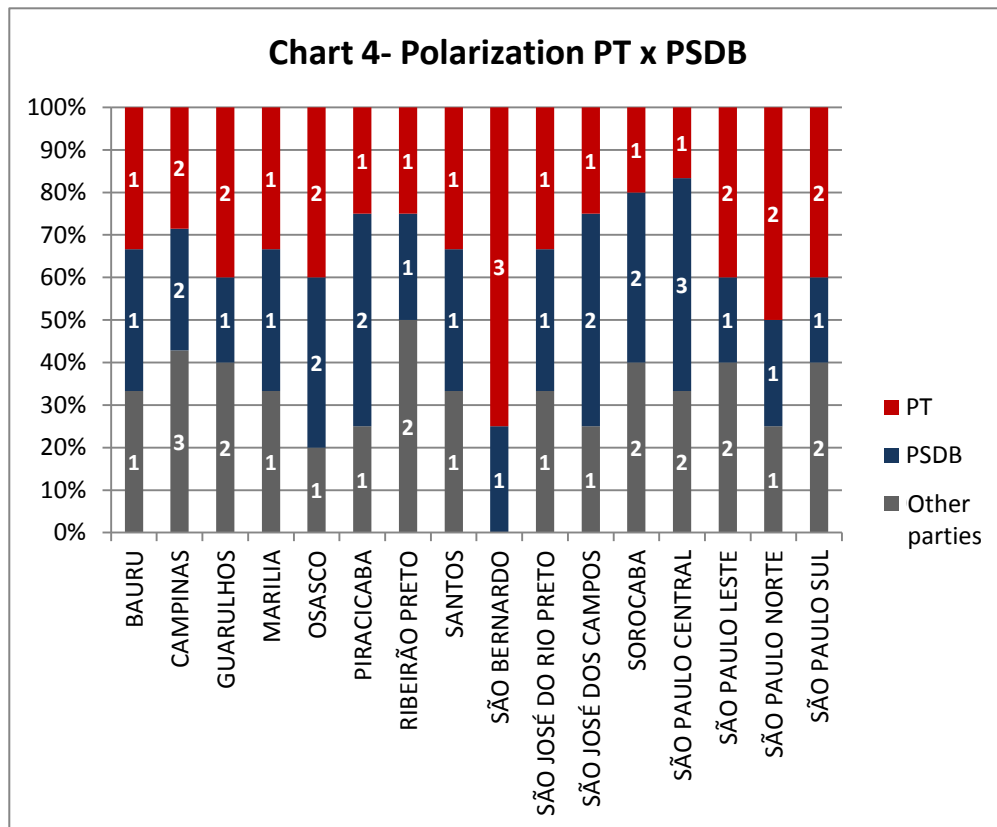
In the second exercise with the electoral districts, we simulated the results disregarding electoral coalitions. With this scenario we sought to observe the effect of a change if the districts were smaller and electoral coalitions were prohibited. Aiming to compare the two, we presented the simulation along with the official result, i.e., with the number of seats per party after the distribution within electoral coalitions. We also presented a comparison with the simulation result if the parties kept the current district design (M=70), without electoral coalitions.

Observing Chart 3, we notice that there is no big difference between the number of seats obtained in the present system and in the scenario where electoral coalitions were banned. Roughly speaking, the number of seats varies, from larger to smaller numbers, the exception being PR that would have two more seats in its group if the parties were prohibited to compete in a coalition.

On the other hand, the simulation using districts of lower magnitude indicates that, in a much more pronounced way, major parties would benefit in the case of a political reform that projected districts similar to those ones proposed in this analysis. The number of effective parties in the state would go from 8.5 to 4. PT and PSDB would receive an increase of 9-10 seats, respectively, whereas all the others would have fewer seats, and seven parties would stop appearing in the setting of the Paulista group. The exceptions are PSB and PR that would receive two additional seats each, and PMDB, which would keep its seats in all cases.

Chart 3-Simulation without electoral coalitions and new electoral districts (São Paulo 2010)





It is important to note that in the case of a change to districts similar to the present ones, an expected effect is that the PT x PSDB polarization, which governs the presidential race and that some authors have pointed out also governs the dispute in municipalities in the State of São Paulo (Limongi et al., 2009), would become acute in the elections for the Chamber of Deputies, so that the advantage of these two parties would increase even more. In Chart 4, one can observe an example of this effect, the distribution of seats among PT, PSDB and other parties. It is remarkable that PT and PSDB are the only parties to manage to get seats in all sixteen districts. If polarization is enhanced by the adoption of a system of districts with low magnitude, it is possible to suppose that campaigns of a smaller number of candidates would be more focused on the party⁹. That is, despite the representation of the open list, the effect of personal reputation would be diminished *vis a vis* the effect of party reputation.¹⁰ On the other hand, the relationship of politician to voter would

⁹ It should be observed that this argument may be applied even if the coalitions were not prohibited. However, in this case, the polarization could exist between two blocks of parties: the “center-left” and the “center-right”.

¹⁰ Carey and Shugart (1994) argue that in the proportional representation systems the magnitude operates as a conductor to the importance of personal reputation; i.e., in systems with PR, the higher the magnitude, the more important personal reputation becomes for the election. While discussing this argument, Cheibub (2011) points out that even in systems where personal reputation is theoretically important, voters tend to vote based on the party. As evidence of such argument, Cheibub mentions authors who state that when a parliamentarian changes party, he does not carry along his votes. When we claim that with smaller districts party reputation would be more important in the election, we are not

strengthen. This would also occur due to the reduction in the number of contestants, which could result in a reduction of the uncertainty of continued political careers, one of the arguments raised by Cheibub. That is, given the lower number of candidates and given the dispute that could happen in a less comprehensive area, an expected effect is the closeness between candidates and voters, favoring vertical accountability of the political system.

Another possible effect is the perpetuation of political elites. It should be noted that this aspect is related to the previous one (reduction of election uncertainty); nevertheless, another consideration is related to the unequal geographical dimension of electoral districts. It is expected that in districts with larger areas, due to candidates' travel costs, the campaign will be more expensive than in districts with smaller areas. Thus, the cost of competing in countryside districts will be higher than in districts with a higher degree of urbanization. Therefore, candidates coming from traditional families could benefit from a change such as the one presented ¹¹.

4. Final considerations

We aimed to work with some aspects of criticism of the electoral rules for legislative disputes in Brazil. The only aspect that was not possible to explore with the simulations was, obviously, a closed list. In this respect, however, recent analyses should be pointed out as they have sought to mitigate the traditional assertions about the use of the open list, trying to identify the strategic responses that parties may resort to before the institutional arrangement. Silva et al. (2012), for example, suggest that the open list may be seen as an important tool to maximize electoral results, since the chosen names must, on the one hand, potentiate the number of seats that the party will obtain and, on the other hand, elevate the regional coverage of the party. As the definition of who will be elected takes into account not only the votes that each individual receives, but also the number of votes received by parties, the candidates depend on others to increase the total votes received by the party in order to make it possible for them to be elected. Therefore, if the open list is not "quite bad", its possible benefits should be considered related to the freedom it gives the voters, and the consequences produced in a more direct relationship with their representatives. The end of electoral coalitions, on the other hand, did not radically alter the distribution of seats among the parties. The argument that such mechanism favors smaller parties a lot, making their representation disproportional and contributing to party fragmentation, does not find much support in the data. It is assumed, however, that, in the long run, these effects would be cumulative, eliminating competitors who progressively have their groups weakened in Congress, but this is something the exercise does not enable us to achieve, since a simulation works based on given results, assuming constant conditions. Anyway, the most relevant dimension should be

disregarding any of the reflections – our statement relies on the fact that a proportional election draws closer to the logic of the majority system.

¹¹ We thank Ricardo Ceneviva for having pointed out this effect.

emphasized, so to say, of the statement against electoral coalitions, that such practice reinforces the logic of non-distinction and of a low programmatic cohesion of Brazilian parties. It should also be discussed, in this case, if effect is not being taken by the cause. Without ignoring the weight of the institutions in the political game, it should be questioned how much impact changing the rules would cause on our parties in order to make them ideologically more consistent, according to the expectations of literature, which have always been frustrated.

Regarding the creation of electoral districts of a lesser magnitude, while keeping the electoral coalitions, the largest parties would benefit in case of a reform similar to the one proposed in this work, and the arrangement of disputes would approach the one with major positions, as in the tested case. Without electoral coalitions, once more the larger parties would benefit, namely, PT and PSDB. If there are those who advocate reducing the number of parties due to the increase in the intelligibility of the system, diminishing districts' magnitude would meet such a desire. Except for four parties, all the others would lose seats in São Paulo, whose political setting would be composed of nearly half the parties currently represented.

In the same sense, if competitiveness weakens in such a context because of the decrease in the number of candidates, as Cheibub points out, it is imagined that the counterpart would be more party austerity with respect to the entry of candidates on the list. An open list would receive a more "closed" aspect, so to speak. In other words, with more power for party leaders, the question is how far do we intend to extend this power?

It is worth asking, finally, how these changes would encourage the strengthening of political parties. That is, if we accept that they are no longer strong enough, or that they would not simply stir dispute closure, further increasing the power of those elites that currently dominate the political game. Prior to that, it must be inquired what is meant, or expected, by virtue of political parties.

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ANNEX 1 – List of parties

Party	Acronym	Current Acronym	Current name of the party
PFL>DEM	PFL>DEM	DEM	Democratas
PCdoB	PCdoB	PCdoB	Partido Comunista do Brasil
PDT	PDT	PDT	Partido Democrático Trabalhista
PHS	PHS	PHS	Partido Humanista da Solidariedade
PMDB	PMDB	PMDB	Partido do Movimento Democrático Brasileiro
PMN	PMN	PMN	Partido da Mobilização Nacional
PDS>PP*	PDS>PPR>PPB>PP	PP	Partido Progressista
PCB>PPS**	PCB>PPS	PPS	Partido Popular Socialista
PL>PR***	PL>PR	PR	Partido da República
PMR>PRB****	PMR>PRB	PRB	Partido Republicano Brasileiro
PRONA	PRONA	PRONA	Partido de Reedificação da Ordem Nacional
PRTB	PRTB	PRTB	Partido Renovador Trabalhista Brasileiro
PSB	PSB	PSB	Partido Socialista Brasileiro
PSC	PSC	PSC	Partido Social Cristão
PSD	PSD	PSD	Partido Social Democrático
PSDB	PSDB	PSDB	Partido da Social Democracia Brasileira
PSDC	PSDC	PSDC	Partido Social Democrata Cristão
PSL	PSL	PSL	Partido Social Liberal
PSOL	PSOL	PSOL	Partido Socialismo e Liberdade
PST	PST	PST	Partido Social Trabalhista
PSTU	PSTU	PSTU	Partido Socialista dos Trabalhadores Unificado
PT	PT	PT	Partido dos Trabalhadores
PTB	PTB	PTB	Partido Trabalhista Brasileiro
PJ>PTC*****	PJ>PRN>PTC	PTC	Partido Trabalhista Cristão
PTN	PTN	PTN	Partido Trabalhista Nacional
PV	PV	PV	Partido Verde

*In 1983 PDS merged with PDC and was called Partido Progressista Reformador (PPR). A new merger with PP, occurred on 09/21/1995 with a new name - Partido Progressista Brasileiro (PPB). It started to be called Partido da República (PP) in 2003.

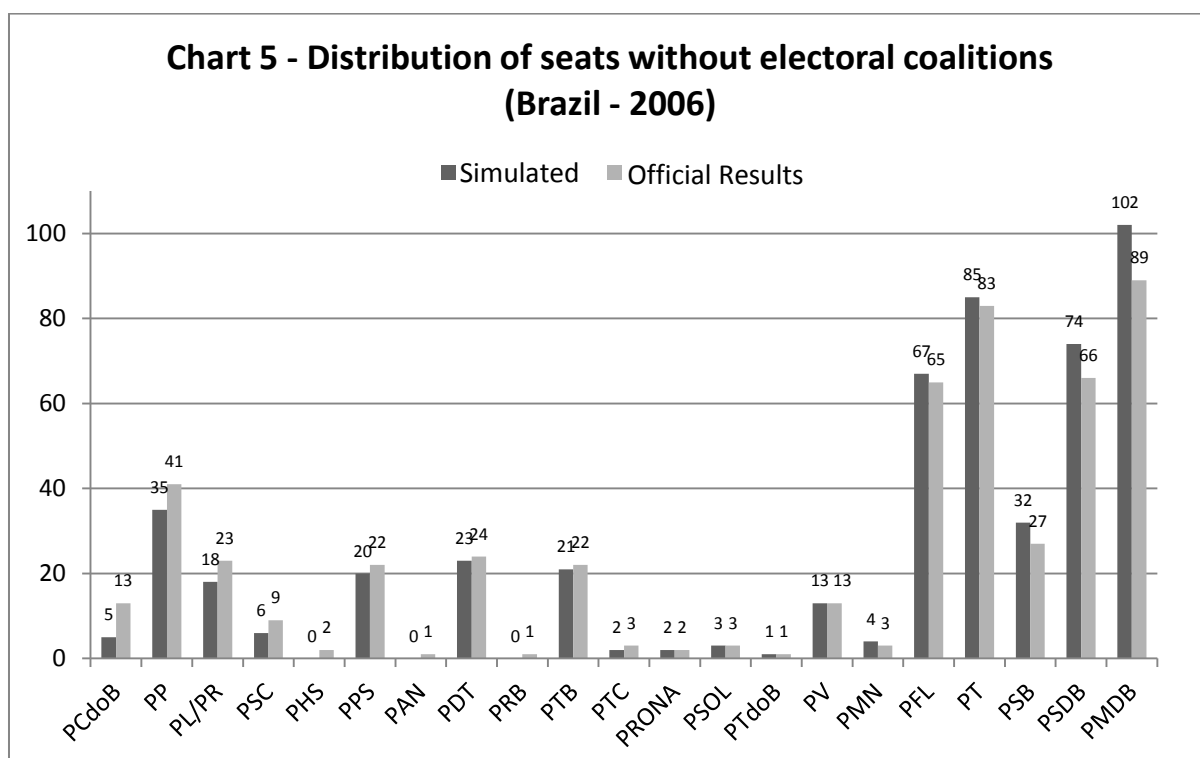
** In 1991 Partido Comunista Brasileiro (PCB) changed its name to Partido Popular Socialista (PPS).

*** In 2006, there was a merger of Partido Liberal (PL) and PRONA, at the beginning of the current Legislature, creating Partido da República (PR).

**** In 2006, Partido Municipalista Renovador (PMR) changed its name to Partido Republicano Brasileiro (PRB).

***** In 1989, Partido da Juventude (PJ), established in 1985, changed its name to Partido da Reconstrução Nacional (PRN). In 2001, it was named Partido Trabalhista Cristão (PTC).

ANNEX 2



ANNEX 3

ELECTORAL DISTRICTS IN THE STATE OF SÃO PAULO – A STUDY ON DIVISION INTO DISTRICTS

The State of São Paulo is represented in the Chamber by 70 federal deputies in an ideal proportion of 590,000 inhabitants per each parliamentarian. We will present here a proposal to cut the territory and then to agglutinate the municipalities into new territorial units that we will name electoral districts.

The division was made taking into account that the organization of space is based on several factors, such as the distribution of urban centers, their hierarchy combined with road networks, flows of people, goods and services, historical and identity processes and, in many cases, the geomorphology or dominant ecosystem that define the regional nodes and webs. On one line, we sought geographic consistency of spatial cuts divided on the basis of territorial contiguity and respecting local identities.

Focusing on regional issues may be the differential between a consistent geographic division, and the allocation by mere assemblage of municipal units based on population mathematics. It is worth insisting on the current concept adopted by geographers for the territories: spatial portion duly named, delimited and appropriated, where identity links blossom or are reinforced. The observance of this geographic principle is very relevant to the extent that a feasible division, based on consistent technical criteria, was sought, instead of random portions. We believe that if such an electoral reform were passed, the operation ability would take place in this regard. Having said so, we will expose how we came to such divisions.

Regionalization of São Paulo

As a starting point, we took the regional divisions already practiced in the state. In the 1960-70s, the state executive power instituted a regional subdivision based on major urban centers of the state. There were nine so called Administrative Regions that afterwards turned into fifteen. In the 1980s, a new regional design was created, composed of 43 units, on a scale similar to the previously-mentioned sub-regions. Used by all the departments of the state, the Government Regions lost strength in the next administrations, but they remain as a technical reference. Once the perimeters are balanced, the RGs are used as subdivisions of the RA.

Figure 1-State of Sao Paulo Divided into RAs and RGs



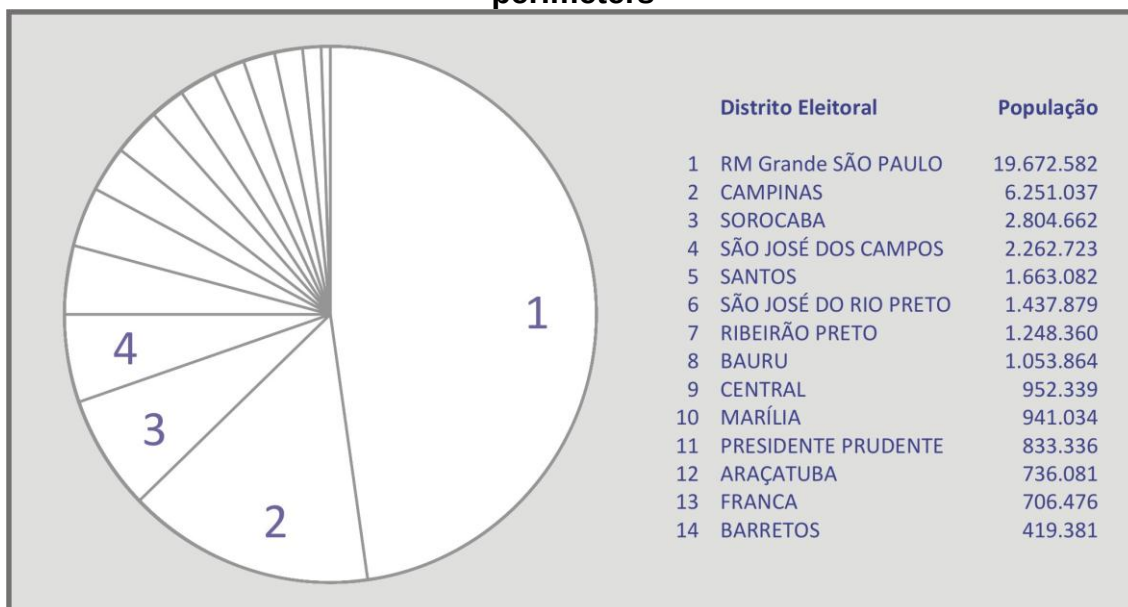
Given their use in planning, among other spheres of state management, RAs and RGs strengthened the identities of large and medium-sized urban centers of the state after four decades of widespread use. Thus, using the geometry of the Administrative Regions (RA) or, in some cases, the Government Regions (RGs), ensures geographical ballast of the proposed electoral districts.

Metropolitan Areas are a second regionalization vector that was used. The region of São Paulo, established by federal law in the early 1970s, consecrated what was known at the time as Greater São Paulo. Its design has even been fully covered by the aforementioned regional structure: there is an RG and an RA that coincide with SPRM. The same happens with Baixada Santista RM.

Electoral Districts

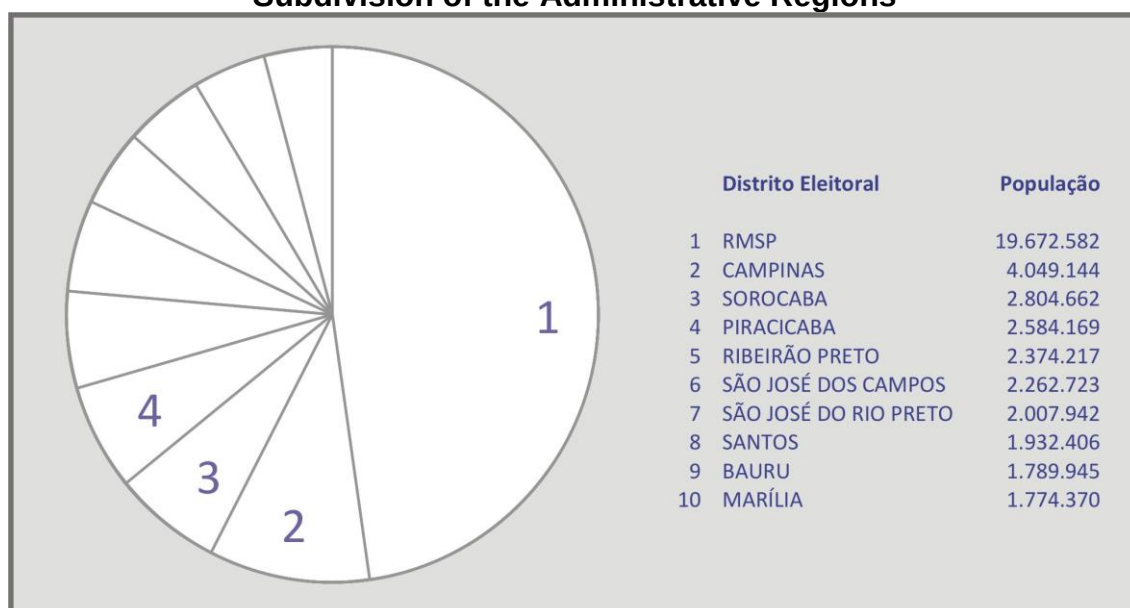
The first format of the division trial in the State of São Paulo in electoral districts was the very design of the division, as mentioned above. Considering the RGs, we obtained a total of 43 electoral districts, ranging from 108,000 to 19,600,000 of population. However, such divisions would not meet research demand due to the large number of units and the large gap among population values. The starting point was then reduced from the RAs, resulting in the following picture: 15 units ranging from 269,000 (Registro) and 19,600,000 (São Paulo), with the median at 1,000,000 (Bauru), as shown in Figure 2.

Figure 2- Electoral Districts Table and Chart that coincide with RAs perimeters



It was observed that the obtained design still consists of very unequal, although more equitable units than the ones in the first simulation. So, we chose agglutination for less populous units and subdivisions for some RAs. The RAs of Sorocaba and São José dos Campos were maintained, merging Presidente Prudente to Marília, Araçatuba to Bauru, the Central to São José do Rio Preto, Barretos and Franca to Ribeirão Preto, and on the coast, Registro to Santos, therefore obtaining 9 units. Dividing the two RAs in Campinas into 2 DEs, the number of units leveled at 10, of which the smallest accounts for 1,800,000 (Marília) and the median 2,300,000 (Ribeirão Preto), while keeping SPRM on the other extreme of the table, as presented in Figure 3.

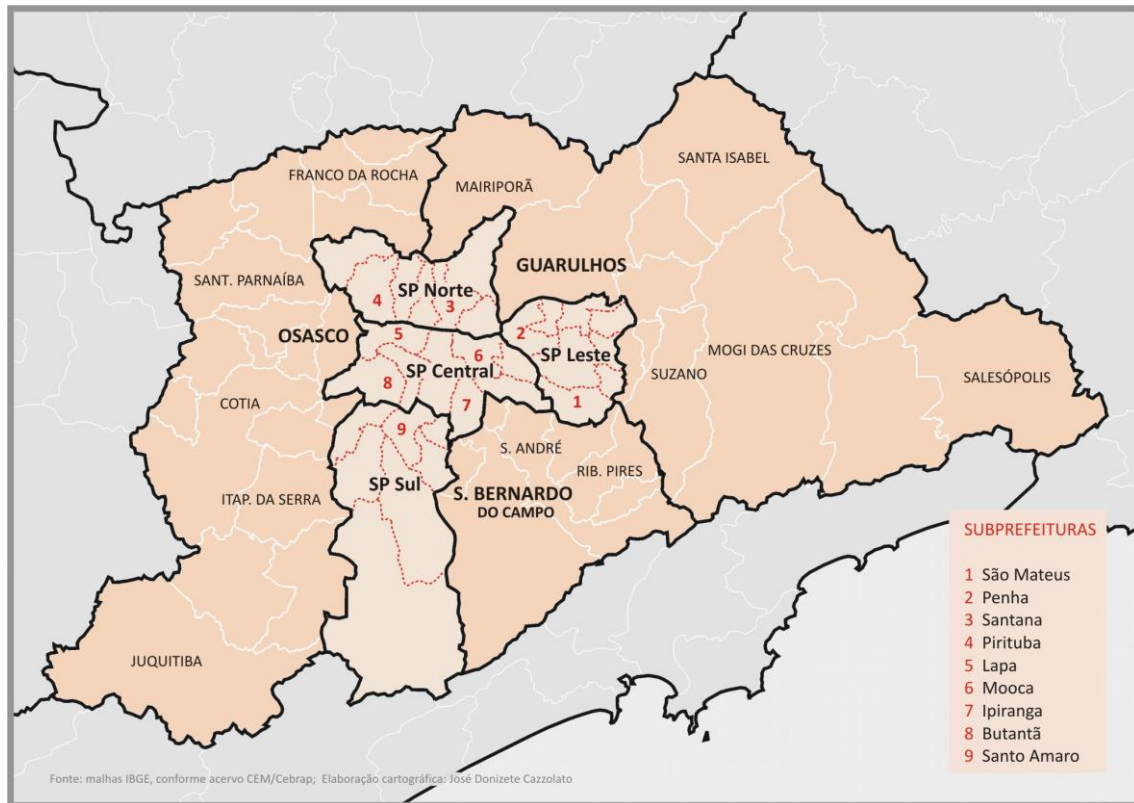
Figure 3-Table and Chart of the Electoral Districts after Agglutination and Subdivision of the Administrative Regions



The last steps in cartographic drafting for the partitioning of the State of São Paulo into DEs have focused on the Metropolitan Region of São Paulo, merging the municipalities outside the capital and dividing the City of São Paulo. Around the capital there is a total of 3 Electoral Districts: West (Osasco, from Juquitiba to Francisco Morato), Northeast (Guarulhos/Mogi das Cruzes) and Southeast (ABC Region).

For the São Paulo municipality, there were two possible divisions for portioning: the districts (96) and the sub-prefectures (31). The option was for these ones because of the occasional association of electoral logistics to the organizational equipment in municipal management. Whenever possible, sub-prefecture territories were joined according to traditional Cardinal Direction Zones, thus obtaining 4 electoral districts: North (7 sub-districts north of the river Tietê-Perus to Vila Maria), East (7 sub-districts east of the Aricanduva River-Penha to Cidade Tiradentes and São Mateus, in a total of 8 units), South (Jabaquara to Campo Limpo and all the others, to the extreme of the municipality, a total of 7 units), and Central composed by territories of the 9 sub-prefectures of the southwest-southeast zones (Butantã to Aricanduva). Therefore, the SPRM territory partitioning resulted in 7 electoral districts, as demonstrated in Figure 4.

Figure 4 –SPRM with Grouped Municipalities and the Municipality of São Paulo Subdivided into Electoral Districts



Once the definition of DEs in SPRM was finished, a final design of the proposed regional test was obtained, with a total of 16 territorial units. Their demographic extremes are 1.8 million (Marília DE) and 4.0 million (Campinas DE), placing the median at 2.55 million (Piracicaba/São Bernardo do Campo), as it can be verified in Figure 7. It can further be noted the great demographic balance was achieved, in spite of the significant differences regarding physical extension of the units. Each one of the territories proposed here has characteristics that give them consistency in terms of the regional arrangement.

Figure 7a - Map of the State of São Paulo Divided into Electoral Districts



Figure 7b -Table and Chart of the State of São Paulo Divided into Electoral Districts

