

# Information and Accountability: Evidence from Brazil

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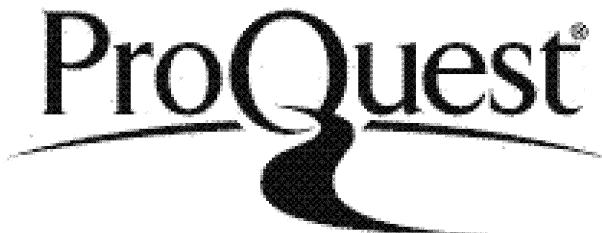
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# Abstract

This thesis studies the role of information on the promotion of political accountability using empirical analysis of data from Brazil.

The first chapter investigates whether the use of participatory budgeting (an alternative budgetary process that gives citizens the ability to interact with the elected politicians in the drafting of the local budget) in Brazilian municipalities has affected the pattern of public expenditures and had any impact on living conditions. By analysing a panel of Brazilian municipalities between 1990 and 2004 I show that the municipalities that used this participatory mechanism favoured an allocation of expenditures that closely matched the “popular preferences”, channelling a larger fraction of their budgets to key investments in sanitation and health services, and registered a pronounced reduction in the infant mortality rates. The second chapter analyses the impact of an Internet-based information dissemination campaign about political candidates’ criminal records launched in Brazil in 2006 on that same year’s election results. Using difference-in-difference estimates around the information release date, I find that politicians with criminal records register a significantly worse electoral performance once that information is revealed to the electorate through the Internet campaign. This suggests that voters do value and make use of information that allows them to distinguish the “crooks” from the law-abiding politicians at the time of the election. The third chapter complements this analysis by investigating the effects of the information campaign on the elected politicians’ detected criminal behaviour. By inspecting the lawsuits brought against Brazilian politicians in two different terms, before and after the Internet campaign, I find suggestive evidence of the existence of both selection and discipline effects of the information campaign on the politicians’ criminal propensity and behaviour. Greater access to information seems to enhance accountability by improving the selection of politicians and by disciplining their behaviour while in office.

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# 1 The Effects of Participatory Budgeting on Municipal Expenditures and Infant Mortality in Brazil

## 1.1 Introduction

Public expenditures are a powerful tool to guarantee access to essential goods and services for all strata of society. However, in many cases distortion and misallocation of public monies – more often than the lack of resources – prevent this from happening. The lack of political accountability is a key problem in much of the developing world. Traditional mechanisms of horizontal accountability, via internal audits, checks and balances or constitutional constraints, are clearly not enough to make politicians take full responsibility and provide full justification for their actions and performance. Neither is electoral accountability in democratic countries: too often we see basic services failing to reach the poor even when they represent an important fraction of the electorate.

Identifying mechanisms to reinforce political accountability has been a key challenge for economists (and policy makers) and the object of intense research in the political economy literature. In the developing world several innovations to improve political accountability have been put into practice. Over the last decade these have tended to be bottom-up mechanisms that imply a greater involvement and participation of citizens, the ultimate service beneficiaries, in decision-making processes and service delivery.

One of the most famous innovations was the participatory budgeting model developed in Porto Alegre. This is an alternative budgetary process that allows citizens to negotiate with government officials over the municipality's budgetary allocation and its investment priorities. Participatory budgeting brings in two key elements to the traditional budgetary practices. First, it improves information flows between policy-makers and service users, leaving the former better equipped to provide goods and services that more closely match the citizens' needs and preferences. Second, it also strengthens accountability by functioning as a commitment device for the politicians as it stimulates more frequent checks on their (publicly promised) actions by the common citizen. Despite having attracted considerable attention for the improvement in political accountability claimed to have been achieved<sup>1</sup> and despite the fact that the participatory budgeting model spread across Brazilian municipalities in the 1990s and 2000s and was adopted in

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<sup>1</sup> For the city of Porto Alegre the World Bank reports a rise in the rate of households with access to water services from 80% to 98% between 1989 and 1996, an increase in the number of children in primary schools to twice as many in the same period and even a growth in the tax revenue collected by 50% due to a higher motivation to pay taxes given the increased transparency brought along by participatory budgeting.

a number of other countries, no sound empirical evidence exists of its impact on local public expenditures and living standard outcomes. My contribution is to fill that missing gap by analyzing a panel of Brazilian municipalities for the period 1990-2004 in order to understand what effects participatory budgeting had on municipal public expenditures and associated living standard outcomes.

Brazil's decentralized politico-administrative system, in place since the late 1980s, provides an ideal setting for this analysis. All municipalities are entitled to ample powers in service delivery and can therefore be important players in fundamental sectors such as health or education. Furthermore, with the first experiences of participatory budgeting taking place in the late 1980s the data allows me to identify four different waves of adoption in the four legislative periods between 1989 and 2004, where each legislative period is bounded by a mayoral election. The decision to adopt participatory budgeting depends solely on the existing mayor, who is subject to election every four years, and it can be reversed.<sup>2</sup> For this reason, there exists substantial variation not only in the time of adoption but also in the length of the period in which participatory budgeting is in place. This variation in the use of participatory budgeting will be essential for the identification strategy employed in the paper.

By observing the evolution of budgetary allocations across time in different municipalities I find a robust pattern linking the use of participatory budgeting to a change in government expenditures in a way that seems to match the "popular preferences" as expressed in the participatory forums. This pattern shows that within the period under analysis the adopting municipalities tend to increase the spending on health and sanitation significantly more than their non-participatory counterparts. More precisely, my findings suggest that participatory budgeting increases the proportion of the public budget spent on health and sanitation by 2 to 3 percentage points, which is as much as 20 to 30% of this category's budget share sample mean in 1990.<sup>3</sup> This is in line with the participatory meetings' outcomes that systematically place investments in sanitation (improving water and sewage connections, drainage and waste collection) as a top municipal priority. Crucially, this result does not seem to be a consequence of adopting units having larger fiscal budgets. Participatory budgeting appears to be a "budget neutral" mechanism as it is not significantly associated with greater per capita budgetary expenditures.

To show that these changes do generate real effects<sup>4</sup>, I further investigate whether there was any subsequent impact on living conditions among the adopting municipalities.

<sup>2</sup>This budgetary model can be dropped at any point by the adopter or one of the following mayors (more details on participatory budgeting functioning and variation in adoption are provided later).

<sup>3</sup>To be precise, in the econometric analysis, the unit of observation is what I will designate by "minimum comparable areas" (MCAs), which I can track across the 1990 to 2004 period. MCAs refer to municipal boundaries in 1970 and are the minimum geographical areas that can be tracked across my sample period. The MCAs typically contain one municipality but owing to population growth and splits some MCAs may contain more than one municipality. Further details on these MCAs are provided in the next section.

<sup>4</sup>Beyond the potential satisfaction derived by the citizens from direct political participation, as, for example, was observed by Olken (2008) in the evaluation of a direct democracy mechanism in Indonesia.

It is a well accepted fact that poor sanitation is a leading factor in infant mortality, mainly driven by higher vulnerability of this age group to waterborne diseases (see Black et al, 2003; Victora, 2001; Sastry and Burgard, 2005). If we believe that the new spending pattern brought by participatory budgeting did result in better sanitary conditions as demanded in the participatory forums, a consequent fall in the infant mortality rates might be expected. My data set allows testing for this. Using a panel of municipal infant mortality rates for the period between 1990 and 2004 I am able to observe a significant drop in the number of deaths among children up to one year old. Municipalities which adopted participatory budgeting recorded a drop in infant mortality of between 1 to 4 infants for every 1,000 infants, which is about 5 to 20% of the total infant mortality rate at the beginning of the period in 1990.<sup>5</sup> This is a significant result for a country which had an average infant mortality rate of 48 out of every 1,000 newborns at the beginning of the 1990s (World Development Indicators). This rate was above the Latin American and Caribbean average for the same period and singled out Brazil as one of the worst performers in the region, below countries of inferior economic development such as Paraguay, Belize or Ecuador (World Development Indicators).

These basic results were subjected to a series of robustness checks in order to address concerns about potential endogeneity of the participatory budgeting adoption decision and the validity of its estimated effects. First, in order to deal with potential omitted variable bias, a set of variables reflecting the political orientation of each municipality in the panel across the period under analysis was added to the baseline specification.<sup>6</sup> The estimated effects (on expenditure allocation and infant mortality) are not significantly affected by the inclusion of these political controls. This indicates that the effects of participatory budgeting are wider than those stemming from specific party policies. This result is in line with the observation that a number of political parties in Brazil implemented participatory budgeting. Indeed if I exclude municipalities under the control of mayors from the Workers' Party (the main political party behind the introduction of participatory budgeting in Brazil) my main results continue to hold.

Second, we might also worry about the comparability of municipalities that adopted participatory budgeting and those that did not. Ex-ante differences between the two sets of units (adopters and non-adopters) might make the latter an unsuitable comparison group and consequently cast doubt on the validity of the estimated effects. Brazil's huge territorial diversity in terms of socioeconomic development allows me to match adopting municipalities to non-adopting municipalities that are comparable in indicators considered relevant for the outcomes under analysis. I use two variables in this matching: per capita household income levels and average education among adults – where the

<sup>5</sup> These results are in line with recent estimates for the impact of improved sanitary conditions on infant mortality in Brazil in Soares (2007) and Gamper-Rabindran et al (2008).

<sup>6</sup> In the econometric analysis the term municipality refers to minimum comparable areas (MCAs) which I can track across the 1990 to 2004 period. The MCAs typically contain one municipality but owing to population growth and splits some MCAs may contain more than one municipality. Tracking MCAs as opposed to municipalities allows me to follow the same geographical unit across the 1990 to 2004 period.

matching is carried out at the beginning of my sample period. In this matching exercise each adopting municipality is matched with its closest non-adopting counterpart along these two dimensions. This approach restricts the sample I have available for econometric estimation but implies that I am comparing adopting municipalities to municipalities that are similar in terms of these two indicators at the beginning of my sample period. The main results I observe for the full sample go through for the restricted matched samples when I *ex-ante* match on either per capita household income or adult education level.

Third, a similar and potentially more serious concern is that unobservable factors might be at the basis of these *ex-ante* differences, conditioning both the outcome variables of interest and the decision to adopt participatory budgeting. Once again the timing and duration of the participatory budgeting adoption across the Brazilian municipalities provides us with a “natural” setting to address this problem. By taking advantage of the variation in the time of adoption I am able to restrict the analysis to the group of adopters (228 units in the sample) and can then estimate, within this group, the effect of participatory budgeting. With such a procedure I am able to “control” for whatever particular non-observable factors the set of adopting municipalities share that may have affected both the decision to adopt participatory budgeting, the allocation of public expenditures and associated living standard outcomes. Again the pattern of results I observe for the full sample holds with the restricted sample of municipalities that adopted participatory budgeting during my sample period.

I interpret these findings as evidence that participatory budgeting can be an important tool in improving information flows between citizens and their political representatives, enhancing government accountability and ensuring that citizens’ preferences are reflected in the actual implementation of public policies on the ground.

My paper contributes to three main strands in the political economy of development literature. First, given the focus of the participatory mechanism on improving information exchanges between elected politicians and common citizens, my paper contributes to the literature that views citizens having information on the actions of politicians and bureaucrats as being key to improving political accountability and government responsiveness (see Besley and Burgess, 2002; Strömberg, 2003; Ferraz and Finan, 2007 and Björkman and Svensson, 2006).

Second, my paper contributes to the growing literature on the analysis and evaluation of different participatory mechanisms. This ranges from the setting of political reservations for minority groups in order to ensure that their interests are reflected in policy-making (Pande, 2003; Besley et al., 2004a; Chattopadhyay and Duflo, 2004); the introduction of service report cards (Björkman and Svensson, 2006); the direct involvement of community members in school and health sector management (Banerjee, Deaton and Duflo, 2004a; Jimenez and Sawada, 1999; Kremer and Vermeesh, 2005); involving citizens and community organizations in the monitoring of public programs (Olken, 2007, 2008) or the setting up of participatory institutions (such as the Gram Sabhas in India (Besley, Pande and Rao, 2005). Participatory budgeting is most similar to this last mech-

anism for encouraging participation in policy making but is truly innovative in its scope and scale. Participatory budgeting aims to improve accountability and responsiveness by opening up the “black-box” of budgetary design and implementation to the whole of society. This allows narrowing down the information asymmetries between policy-makers and citizens and encourages further checks by the latter on the former’s activities – particularly relevant in a context characterized by wide-spread clientelistic and corrupt practices as is the case in Brazil.<sup>7</sup> It has been implemented on a large scale in Brazil – by 2004 about 30 percent of the Brazilian population lived in municipalities which used participatory budgeting as a means of deciding the allocation of local resources. Its objectives line up with those outlined in the 2004 World Development Report, “Making Services Work for Poor People”, of “putting poor people at the centre of service provision: enabling them to monitor and discipline service providers, amplifying their voice in policy-making, and strengthening the incentives for service providers to serve the poor”. The scope, scale and ambition of participatory budgeting twinned with the distinct lack of concrete evidence of its effects makes evaluation of this new form of encouraging citizen participation in public policy making all the more urgent.

Third, this paper contributes to a wider debate on the merits of the decentralization of government. Empirical results in this area have been divergent and inconclusive and have not crystallized into a coherent whole. This paper, by focusing on an institutional refinement within a decentralized governance framework (that is, the enhanced community participation), provides a test of the (argued) advantage of decentralized and participatory regimes for tailoring policies to the demands and needs of the local population (see Foster and Rosenzweig, 2001; Ahmad et al., 2005 and Faguet, 2002).

The remainder of the paper is organized as follows. Section 1.2 focuses on background and data. Under each of the sub-sections in Section 1.2 – on participatory budgeting, public expenditures and health outcomes – I provide the necessary institutional background, define the variables used in the empirical analysis and examine how they have evolved over my sample period. Section 1.3 presents my analysis of the relationship between participatory budgeting and public expenditures and associated living standard outcomes for Brazilian municipalities over the 1990 to 2004 period. Basic results presented in the first sub-section of Section 1.3 are then subjected to a raft of robustness checks in the second and third sub-sections. Section 1.4 concludes.

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<sup>7</sup>There are well-known examples of these corruption scandals at different levels of government in Brazil. At federal level, for instance, they led to the impeachment of a President, in 1992, and to the resignation and expulsion of several members of the Brazilian Congress and of President Luiz Inacio da Silva’s former cabinet in more recent years. At municipal level Trevisan (2003) provides a good account of different forms of corruption found in Brazil.

## 1.2 Background and Data

### 1.2.1 Participatory Budgeting

**Origins** Participatory budgeting was one of several institutional innovations introduced in Brazil in the late 1980s which took advantage of the re-democratization process and its focus on decentralization.

During the two decades of military dictatorship Brazil's politico-administrative structure was centralized in the federal government and based on a network of political appointees in each state and capitals. However, since re-democratization considerable power and autonomy has been devolved to the sub-national governments, which are currently (as of 2008) comprised of 26 states (plus a Federal district - Brasília) and 5,562 municipalities (the smallest politico-administrative division).<sup>8</sup>

In reality, during the military regime the municipalities remained responsible for the provision of some local services (such as inner-city transport or waste collection and disposal); however, the scope for locally-defined policies was very limited as municipal governments were, above all, executors of an agenda set by Brasília. Following democratization and decentralization in the late 1980s, their responsibilities were significantly enlarged. Not only did municipalities gained co-responsibility in the provision of several services and greater fiscal autonomy to handle them<sup>9</sup>, they also became freer to develop their own laws and to encourage new forms of democratic participation (other than those provided via mayoral elections).<sup>10</sup> Community organizations were legitimated as active political actors,<sup>11</sup> particularly in the management of public expenditures which had been a typical instrument employed in the “patron-client” type of politics which had been common in Brazil (Wampler, 2004).

In essence, through the decentralization effort which took place at the end of the 1980s municipal governments gained the status of fundamental players in the provision of basic services for households and communities. Municipalities were given access to increased levels of funds from upper-levels of government, along with the tools to implement their newly granted responsibilities. This context hugely facilitated the introduction of participatory budgeting programs, initially by mayors from the Workers' Party (“Partido dos Trabalhadores”), in different municipalities across Brazil. Porto Alegre, the capital of the southernmost Brazilian state, would become the benchmark for this model.

<sup>8</sup> For administrative purposes municipalities can divide their territory into districts and sub-districts, as happens in São Paulo. These sub-divisions have no political or financial independence from the municipal administration, though.

<sup>9</sup> The constitution codified more resources to be transferred to sub-national units and increased the range of taxes and tariffs that could be levied by the municipal governments (Baiocchi, 2001).

<sup>10</sup> See article 14 in the Brazilian Constitution and Baiocchi (2001).

<sup>11</sup> Actually the constitutional text goes further than this with regards to popular participation. Article 26 requires the participation of civic associations in city policies. Articles 204 and 227 require popular participation in the formulation and control of health and social security policies (Avritzer, 2006). Several governments have created these popular councils for issues of health, education, housing and other fields. They clearly differ from the institution under analysis in this paper as they are not open to all citizens but rather made up of representatives of associations, which are “bequeathed the right to participate and that rarely have any decision-making power” (Abers, 1998).

The Workers' Party was created in 1979 and it was often considered as a novelty among the Brazilian leftist parties for its origins in the union movements and its strong links to the country's grassroot and community associations (Keck, 1992; Abers, 1996). Early on, in its political agenda, the Workers' Party emphasized the relevance of promoting government accountability, community participation and the reversal of priorities away from the elites towards the poor and the working classes. Budgetary policy was a critical instrument in these goals (Abers, 1996). In the words of Abers (1996: 39)

“PT [the Workers' Party] has made the transformation of budget policy one of its central government objectives because the manipulation of city spending has historically been the backbone of local clientelistic structures. Typically, local government spending favours large scale, centrally located public works at the expense of services and projects providing basic needs for the poor. Such big infrastructure projects fill the coffers of the powerful construction companies that finance political campaigns. At the same time, what limited funds are spent on the urban periphery are usually dependent on promises by local neighborhood leaders to support particular mayoral or city-council candidates in the upcoming elections.”

The development of the participatory budgeting model was in accordance with the party's platform and objectives. Its implementation took place as soon as the Workers' Party elected its first mayors. By promoting the joint management of public resources, participatory budgeting could not only make the municipal government more responsive and transparent but it could also reverse the cycle of patronage politics that was in danger of being perpetuated by the newly empowered local elites. In effect it was a mechanism for strengthening the credibility of the Workers' Party. As a consequence, it became the hallmark of the municipal governments controlled by the Workers' Party. The successful results achieved “helped to define the meaning of “good government” in Brazil, which now emphasizes direct participation and transparency” (Avritzer and Wampler, 2005). This point cannot be dismissed in understanding the party's steady trajectory from a few minor mayoralties, in the mid-1980s, to the presidency, in 2002 (Santos, 1998).

**Operation** In Brazilian municipalities, expenditures are mainly composed of four classes: i) personnel, ii) debt repayments, iii) public services (health/sanitation and education taking the lion's share), and iv) investments in works and equipment (including those in health/sanitation and education). It is precisely in these last two categories, which in financially healthy municipalities represent close to half of the budget, that municipalities have more autonomy and are therefore the focus of the participatory budgeting processes.<sup>12</sup>

<sup>12</sup>In some municipalities, the participatory mechanisms also affect other spending categories and even the revenue collection. This usually happens when participatory budgeting has been in place for a longer period.

The way participatory budgeting is implemented has had several variants across Brazil, tailored to each municipality's characteristics. There is variation in the structure and timing of meetings, in the rules for electing citizen representatives, in the manner in which municipal investment rankings are defined and even on the percentage and components of the municipal budget covered by participatory budgeting.

The main features of participatory budgeting can be summarized as follows:<sup>13</sup> the program is logically structured by the city council, which is in charge not only of the organization and advertisement of meetings, but also of providing all the necessary technical information to any participant. As such, for organizational purposes the council officials start by dividing the municipality into different "administrative" regions (roughly corresponding to the existing neighborhoods). In a first stage, the process formally begins with a set of parallel neighborhood assemblies, open to all residents, where an update of the previous years approved works is given, local needs are discussed, desired investments are listed, and neighborhood representatives are elected by the attendants.<sup>14</sup> These representatives are responsible for collecting the local demands and effectively interact and negotiate with the elected officials in the drafting process of the budget. For logistical and technical reasons, participatory budgeting is not simply a direct democracy process – in reality it combines elements of both direct democracy (i.e. direct mobilization of citizens in decision-making venues) and representative democracy (i.e. by electing representatives from among the attendants).

It is worth noting that in many municipalities, such as Porto Alegre and other large urban centres, this representation is made up of two tiers due to reasons of scale and the degree of technicality involved in the decisions at later stages. These two tiers are comprised of "councillors" and "delegates" and both are elected through popular assemblies. The councillors ("conselheiros") form the "participatory council" which together with elected municipal officials are responsible for defining the criteria used to rank demands and allocate funds and vote on the investment plan presented by the mayor and her executive team. These councillors are the elected citizen representatives who interact directly with the elected bodies. The delegates ("delegados") function as intermediaries between the citizens and the participatory council (which are comprised of councillors and elected municipal officials) and supervise the implementation of the budget.

In a second stage, these delegates take part in municipality-wide coordinating meetings where a final draft for the different regions' investment priorities is drawn up and passed to the executive.

Under the ordinary budget cycle (i.e. without formal citizen participation) the execu-

<sup>13</sup>The purpose here is not to give a detailed description of a participatory budgeting process, especially given its specificity in each one of the adopters, but rather to underline the common features that constitute the essence of this participatory innovation in Brazil. For case studies with a thorough description of participatory budgeting (gross majority with reference to Porto Alegre) see Santos (1998), Abers (1996, 2000) or Souza (2001).

<sup>14</sup>Only the registered inhabitants of the region have the right to vote. In order to promote participation, it is also usually the case that these neighbourhood representatives are elected proportionally to the number of participants at a meeting.

tive is solely responsible for the elaboration of the budget proposal, which has to include a plan of all revenues and expenditures programmed for the subsequent year. This proposal has to be approved by the city's legislature (comprised of elected municipal officials) in order to become official.

Under the participatory model, the allocation of investments in the budget proposal is defined by the executive together with the participatory council. Under this model public budgeting takes into account the popular priority ranking (obtained by the delegates) together with a set of weights (such as the share of population affected by the project, the index of local poverty and measure of need/shortage of the good demanded) which are designed to promote equity in the distribution of resources as well as to take account of the projects' technical and financial feasibility. The elected municipal officials also have the capacity to initiate projects of general interest or even works considered necessary for a given part of the city and these are also the object of discussion with the participatory council.

In the last stage, once the budget has been approved by the legislature, the elected delegates and councillors are responsible for supervising its execution and reporting any faults or delays to the mayor.

To summarize, compared to the ordinary budgetary process, differences can occur mainly at two stages: 1) the direct input of citizens' demands and the direct interaction between popular representatives and executive in the elaboration of the budget proposal; 2) oversight of the approved works by the (elected) popular representatives (delegates and councillors) once the investment plans become public.

The role of the legislature is not affected, at least in theory, since the budget still has to be approved by this chamber. However, some studies point to the fact that the budget proposal reaching the legislature comes, under participatory budgeting, with the direct approval and demands of the population and this may constrain the ability of the legislature to vote against it (Santos, 1998). This can be relevant since the decision of whether or not a municipality adopts participatory budgeting depends on the mayor and her executive team and does not have to be at any moment ratified by the legislature. Participatory budgeting may therefore be seen as a means for the mayor and her executive to increase their public decision making power.

A scheme with a reference design of the year-round participatory process (based on Porto Alegre's schedule) is presented in Figure 1.1.

**Evolution** The expansion of participatory budgeting across Brazilian municipalities closely matched that of the Workers' Party in the first years. Likewise, it evolved slowly, first in the southern urban centres, then in the smaller neighbouring municipalities and northern municipalities. From the mid-1990s onwards, as the publicity of the most successful experiences spread and participatory budgeting became internationally recognized, it started being replicated by other parties – most, but not all, with political orientations close to the Workers' Party. For a better understanding of participatory

budgeting's geographic evolution, maps with the distribution of participatory budgeting experiences across time are provided in Figure 1.2.

Table 1.1 shows the evolution of the number of municipalities adopting participatory budgeting and also of municipalities with Workers' Party mayors. Although the total number of adopting municipalities (169 at the last available count in 2000) seems small in a country as big as Brazil (which contained a total of 5,561 municipalities at the same date) it is worth noting that in 2000 the 169 municipalities that had adopted participatory budgeting accounted for approximately 27% of Brazil's 175 million inhabitants.

As can be seen from Table 1.1, not all municipalities with Workers' Party mayors used participatory budgeting (for example between 2001 and 2004 only 78 of the 186 municipalities with Workers' Party mayors employed participatory budgeting). The reason for this typically lies with a fragile financial situation (where debt repayment obligations and labour costs did not allow for new investments) or with the Workers' Party mayor having to govern in coalition with other political parties (see Shah, 2007).

During the period under analysis (1990 to 2004), and, in part, resulting from the decentralization process, the municipal divisions of Brazil changed considerably mainly due to municipalities splitting as a result of population growth. Between 1980 and 2004, for example, more than 1,500 new municipalities were created. To address this fact and in order to follow the same geographical units across the 1990 to 2004 period, the econometric analysis in this paper will be based on the municipal borders as of 1970 (which are almost identical to the existing ones in 1980).<sup>15</sup> These units are known as "minimum comparable areas" (MCAs). My panel data consists of 3,651 MCAs which I can track across the 1990 to 2004 period. Each MCA typically contains one municipality but owing to population growth and splits, as mentioned above, some MCAs can contain more than one municipality.<sup>16</sup> Since these MCAs will be the relevant unit of observation for all the analysis presented hereafter, in Table 1.2 I replicate the analysis for the evolution of participatory budgeting shown in Table 1.1 for MCAs as opposed to municipalities. As can be seen from comparing Tables 1.1 and 1.2 the patterns of change look highly similar at municipality or MCA level.

It is worth noting that the number of participatory budgeting occurrences as shown in the tables is not cumulative over time. At the end of every period there are MCAs dropping out of the program as well as new MCAs adopting participatory budgeting. This variation in the time of adoption both within and across MCAs will be essential for the identification strategy.

<sup>15</sup>If we consider a municipality A that in the course of the 1990s split into two municipalities B and C then, in order to have a comparable geographical unit across time, I will add up data from B in C in the years after the split.

<sup>16</sup>Owing to the intense splitting activity in Brazil from the 1980s use of MCAs as opposed to municipalities is standard practice in the analysis panel administrative data for Brazil. All my econometric analysis has also been carried out just using a sub-sample of municipalities that suffered limited or no territorial changes (less than 10% change in total area) between 1970 and 2004. The results from this restricted sample do not significantly differ from the ones presented below.

**Data** The information on participatory budgeting adoption comes from the following sources: a compilation I made in collaboration with members of the Workers' Party, which provided data for the period 1986-1992, surveys conducted by the "Fórum Nacional de Participação Popular" (National Forum of Popular Participation) - an association of NGOs interested in the theme of citizens' participation - for the period 1992-2000, and data provided by Avritzer and Wampler (2005), for 2001-2004. The survey studies are based on questionnaires sent to all municipalities in the country and collected by local NGOs. I also checked that for years where there is overlap the data that I collected for the earlier years matched the survey based estimates and found that the match was exact.

The data set I collected indicates for all Brazilian municipalities whether the municipal government engaged in any form of participatory budgeting during budgetary design and implementation. The data used in this paper refer uniquely to a listing of municipalities that in each year, from 1986 to 2004, reported using participatory budgeting. Further information regarding individual experiences is not publicly available. Therefore, it is not possible to identify potential nuances in the degree of participation mentioned above, nor the investment priorities voted for by the participants in each and every municipality. My knowledge about citizen priorities is based on data published by some municipalities and NGOs for a subset of municipalities.

### 1.2.2 Public Expenditures

**Decentralization** By law, the municipal executive has been responsible for the provision of goods and services considered to be of "local interest", that is, whose relevance is essentially restricted to the municipality. In practice, this has traditionally been limited to garbage collection, disposal and general cleaning services, sewerage networks construction and maintenance, public lighting, roads, general urban infrastructure works, public transportation and, in some cases, also water treatment and delivery. Although there was also some municipal activity in primary education and primary health care, these services were far from being an exclusive municipal responsibility as there was a strong presence of state, and even federal, managed schools and health centres. The same was also true for water treatment and delivery services. Despite being considered a municipal responsibility, state companies were still the predominant provider of water services in the 1980s as a consequence of the model used for the development of this sector during the military regime, which was based on a state company's management through concession contracts.<sup>17</sup>

After the new constitutional charter of 1988, although the presence of federal and state governments was not completely dismissed (as they are still encouraged to inter-

<sup>17</sup>For its own nature, and different from the water services, during the military period the maintenance and enlargement of the sewage systems was kept mostly as a municipal responsibility. The delivery rates for this service (i.e. number of houses connected to public sewerage network) were in any case extremely low at the end of the dictatorship.

vene in case of insufficient local capacity), municipalities were strongly stimulated to enlarge their participation in the education and health sectors and progressively received larger transfers from upper levels of government in order to assume those tasks.<sup>18</sup> As a result primary health care, pre-school and primary education are now (almost) exclusively municipal responsibilities. In the sanitation sector municipal governments have also been assuming an increasing role in the water services since the end of the existing contracts with state companies. This complements their pre-existing central role in providing local sewerage services.

**Composition and Evolution of Expenditures** Brazilian public accounts have, by law and since 1990, assigned all the budgetary expenditures by “function”, depending on the governmental service/responsibility they refer to.<sup>19</sup> Since 2002, there are 28 of these functions or categories considered, for which total spending has to be presented separately. In Tables A.2 and A.3 in the Appendix, I provide a listing and description (as defined by the Brazilian law) of these categories.

It should be added that before 2002 the expenditures disaggregation level was not so extensive and some of the actual classes were bundled together. This is the case with, for instance, health, sanitation and environmental policy, which were added up under the general “Health and Sanitation” category, or education, culture, sports and leisure that fell under the general “Education and Culture” category (all other changes before/after 2002 are made explicit in Table A.4 in the Appendix). As this “bundling” affects most of the period under study, it determines the expenditure categories (16 in total) that can be effectively tracked across the whole of my 1990 to 2004 period: “Administration and Planning”, “Legislative”, “Judiciary”, “National Security”, “External Relations”, “Social Assistance”, “Health and Sanitation”, “Labour”, “Education and Culture”, “Housing and Urbanism”, “Agriculture”, “Industry”, “Services”, “Communications”, “Energy”, and “Transport”.

Figure 1.3 shows the average expenditure allocation for the Brazilian MCAs in 1990 and in 2004. Expenditures in “Education and Culture” absorb the largest share of the budget in both years accounting for 27% of the budget in 1990 and 30% of the budget in 2004. There is thus modest increase in MCA budgets dedicated to “Education and Culture” across the 1990 to 2004 period. In contrast, the share of the MCA budget dedicated to “Health and Sanitation” rises from 13% to 23% - a 10 percentage point increase over this 14 year period. The losing sectors in share terms are “Housing and Urbanism” and “Other Expenditures” (which includes the remaining classes). This observation is in line with the usual evaluation of the Brazilian decentralization process that highlights the success achieved in health/sanitation and education sectors as opposed to the limited progress made as regards municipal housing or social welfare programs (see Souza, 2001).

<sup>18</sup>The level of fiscal decentralization in Brazil is considerably high. According to the BNDES (the Brazilian Development Bank) the transfers from central government amount on average to USD 35 billion per year, which represents approximately 15% of the federal government’s total revenue.

<sup>19</sup>The basic structure of Brazilian municipal accounts is provided in Table A.1 in the appendix.

**Data** The financial data on expenditures classified by the categories mentioned above and used in this paper is originally from the National Treasury (“Secretaria do Tesouro Nacional”) and is available for every municipality since 1990. To simplify the data collection process I made use of the tabulations already available from the Institute of Applied Economic Research (“Instituto de Pesquisa Econômica Aplicada” - IPEA). This data allowed me to build a panel of budgetary expenditures for 3,651 Brazilian MCAs for the period 1990-2004. Summary statistics for the main classes of expenditures considered, at the beginning of the period as well as for the whole sample are presented in Tables 1.4 and 1.5.

### 1.2.3 Health Outcomes

**Background** Indicators from the Brazilian Population Census and from international organizations show that, right after democratization in 1985 and prior to the first experiences with participatory budgeting, there existed substantial room for improvement of social indicators on several fronts. Although access to goods and services and overall well-being varied vastly within the country (as well as within states and even within municipalities), with the densely populated southern states performing significantly better, the level for most relevant indicators was generally low when compared to other Latin American countries. Summary statistics for some “living standards” variables for 1991 can be found in Table 1.4. At the beginning of the 1990s the infant mortality rate was close to 50 infants for every 1,000 newborns (UNDP) with systematic high rates of morbidity and mortality from infectious and parasitical diseases (diarrhoea being one of the most prevalent).<sup>20</sup> At this time there was a major deficit in the sanitation infrastructure as less than 20% of the country’s households were connected to the public sewage network. According to the Census of 1991, there was also a serious lack of access to proper housing and education levels were extremely low as the average illiteracy for adults (over 25) and school drop-out rates were both above 20%. With such widespread deficiencies, it is not immediately obvious which investments should be prioritized. In this context, the information channels opened by participatory budgeting might serve as a useful tool for identifying what citizens in Brazilian municipalities saw as the expenditure priorities.<sup>21</sup>

Table 1.3 illustrates a typical list of investment priorities as voted in the popular assemblies that are part of the participatory budgeting process. Although the information presented here refers to Porto Alegre, anecdotal evidence and the existing literature, as well as data published by other municipalities corroborate that it is also representative of expenditure priorities among adopting municipalities. Investments in basic sanitation (which mainly refers to extension and improvement of sewage networks, drainage, anti-erosion, anti-slippage measures and waste removal), street paving (which usually

<sup>20</sup> See, for instance, Simões (2002) or Sastry and Burgard (2004).

<sup>21</sup> Verba, Scholzman and Brady (1995) highlight the relevance of this political participation by observing that “From the electoral outcome alone, the winning candidate cannot discriminate which of dozens of factors, from the position taken on a particular issue to the inept campaign run by the opposition..., was responsible for the electoral victory.” (as quoted by Besley et al, 2005).

accompanies installation of sanitation infrastructure<sup>22</sup>), land regulation (referring to the definition of property rights over occupied land - a major issue in the poor areas of Brazilian cities) and street lighting (which fall under the “Housing and Urbanism” expenditures) are regularly top-ranked in the first rounds of participatory budgeting (across the full range of adopting municipalities for which there is data). Investments in basic education and health are also demanded (usually referring to building and improvement of facilities), as the basic infrastructure (sanitation, paving, housing and lighting) needs are gradually met.

These voted priorities can be interpreted from different perspectives, which are not necessarily mutually exclusive. On one hand, they can simply reflect the preferences of the group of citizens that took part in the participatory forums<sup>23</sup>, and on the other hand, they can indicate a clear bias towards very visible, easily monitorable works where checking the government’s role is more easily done. In either case the relevance of the analysis proposed in this paper is not affected. It still remains important to investigate what average impact this additional information has had on the government’s budgeting or, on the contrary, whether participatory budgeting has been in practice an empty populist trick with none or limited impact on the observed pattern of municipal expenditures.

**Evolution and Potential Role of Participatory Budgeting** Over the last 10-15 years, Brazil’s commitment to improving educational and health outcomes yielded considerable gains. Infant mortality has decreased by almost 40% and overall mortality from infectious and parasitical diseases has been substantially reduced (World Bank, 2004). This decline in infant mortality rates is clearly registered in the Census data, presented in Table A.4 in the Appendix, which shows that the average infant mortality rate in Brazil dropped from 48 to 33 out of 1,000 newborns between 1991 and 2000 - a decline of over 30%. For a better understanding of the regional variation and evolution in infant mortality rates in Brazil, Figure 1.4 illustrates how this indicator varied and evolved across municipalities in 1991 and 2000 (UNDP and IPEA). There has also been a large expansion in basic school enrolments and widespread reductions in grade repetition.

The demands listed in the participatory forums suggest that improvements in basic sanitation were an early and urgent priority. Figure 1.5 charts the share of MCA budgets dedicated to health and sanitation separately for MCAs which adopted participatory budgeting and those that did not between 1990 and 2004. In Figure 1.5, we can observe that there has been a gradual channelling of resources to this sector for all MCAs, but that among adopting MCAs the increase became more accentuated precisely at the point when adoption of participatory budgeting became more widespread, after 1996 (the bars

<sup>22</sup>For that reason the expenditures in street paving usually fall under the “Health and Sanitation” class of the municipal accounts.

<sup>23</sup>Although the meetings are open to the whole municipal population, surveys conducted at the participatory budgeting forums reveal a higher participation of women, the elderly and retired workers, generally with higher than average associative life and income below the city mean (NGO Cidade, [www.ongcidade.org](http://www.ongcidade.org)).

in the graph indicate the percentage of MCAs that in each period were effectively using participatory budgeting). In the next section I investigate in a more systematic manner whether this apparent divergence in budgetary behavior between adopting and non-adopting MCAs can be linked to the adoption of participatory budgeting. Following the existing consensus in the public health literature on the leading role of improved health and sanitation in reducing infant mortality, I also investigate whether the adoption of participatory budgeting can be linked to improvement in living standards along this key dimension.

**Data** The mortality rates used in my econometric analysis are measured as a ratio of the number of deaths to the number of living residents in the same age group (up to 1 and up to 4 years old, respectively, for infant and child mortality). The infant and child mortality data used to evaluate health outcomes in this paper is from Datasus, the official data centre of the Brazilian Ministry of Health. Its database includes yearly mortality figures, by age group, for every Brazilian municipality since 1979, from which I compiled infant and child mortality for every MCA. The municipal infant and child resident populations, necessary to compute the mortality rates, have been available since the early 1990s from the Brazilian Institute of Geography and Statistics (IBGE). Summary statistics for these two variables (infant and child mortality rates) are presented in Tables 1.4 and 1.5, for the cross-section in 1990 and also for the whole sample 1990-2004.

### 1.3 Method and Results

#### 1.3.1 Mechanisms

Participatory budgeting is expected to add two key elements to the conventional budgetary process. First, by bringing together citizens and elected politicians to discuss the allocation of public expenditures, participatory budgeting is expected to generate a pure informational gain regarding the citizens' needs and preferences. As a result, policy-makers are able to provide goods and services and to develop policies that better match these preferences, as revealed in the participatory forums. This might be particularly useful in contexts characterized by several service failures and deficiencies. Second, by opening-up the "black-box" of budgetary design and implementation to the whole of society, participatory budgeting is expected to strengthen political accountability as it works as a commitment device for the elected politicians. At the end of each participatory cycle, the citizens know the amount of public money that is supposed to be spent and the exact projects or services that are supposed to result from spending that money (see sub-section 1.2.1 above and Figure 1.1). As a result, under the participatory budgeting model they can more accurately monitor and evaluate the elected politicians' actions.

These two mechanisms - the pure information mechanism and the increased accountability/commitment mechanism - have implications that can be empirically tested. The information mechanism predicts that when participatory budgeting is adopted I should

be able to observe an allocation of public expenditures that more closely matches the popular demands. As described in sub-section 1.2.3 this should imply a larger allocation of public resources to the health and sanitation sector. The commitment mechanism, in its turn, has implications that go beyond the allocation of public expenditures. It is through the commitment mechanism that the budgeted expenditures do indeed result in the goods and services demanded by the population. As a result, when participatory budgeting is adopted I should be able to observe changes in the allocation of public expenditures as well as changes in the population living standards resulting from the additional goods and services provided in line with the popular demands. More specifically, for the reasons presented in sub-section 1.2.3 above, with respect to the living standard outcomes I expect to observe an improvement in the infant and child mortality rates following the adoption of participatory budgeting. Notice that this improvement is a consequence not of the level effect of participatory budgeting adoption *per se* but of the interaction between its adoption and the public expenditure allocations - namely, expenditures in health and sanitation.

In the remainder of this section, I investigate whether the adoption of participatory budgeting can effectively be linked to these predicted effects on public expenditure allocation and associated living standards outcomes by analyzing a panel of Brazilian MCAs between 1990 and 2004.

### 1.3.2 Identification

The empirical test requires variation in the adoption of participatory budgeting across my sample of MCAs. As described in sub-section 1.2.1, the timing and duration of participatory budgeting adoption across the Brazilian MCAs provides a significant amount of variation both between and within MCAs during my sample period 1990-2004 (see Table 1.2). I will exploit these different sources of variation in my identification strategy.

In the baseline specification (sub-section 1.3.3), the econometric analysis makes use of the full sample of 3,650 MCAs. Thus, the effects associated with participatory budgeting on the allocation of public expenditures and on the infant and child mortality rates will be estimated both from the cross-sectional variation in adoption (adopting MCAs versus non-adopting MCAs) and from the within time variation in adoption among the 228 adopting MCAs.

In the matching specification (sub-section 1.3.4), I also make use of these two sources of variation in order to estimate the effects associated with the adoption of participatory budgeting. The difference, with respect to the baseline specification, is that I no longer make use of the full sample of non-adopting MCAs. Instead, I take advantage of the cross-sectional variation found for several socioeconomic measures across Brazil to restrict the sample of non-adopting MCAs to the ones that more closely match the adopting MCAs in indicators considered relevant for the adoption of participatory budgeting and for the outcomes under analysis, as of 1991. This procedure restricts the sample to approximately

450 MCAs that are substantially more comparable in terms of the indicators considered, at the beginning of my sample period, and increases my confidence in the validity of the estimated results.

Finally, in the “adopters only” specification in sub-section 1.3.5, I restrict the sample available for econometric analysis to the group of 228 adopting MCAs. That is, MCAs with some occurrence of participatory budgeting adoption between 1990 and 2004. I am able to estimate the effects associated with the adoption of participatory budgeting within this restricted sample because there is considerable variation in the time of adoption among the adopting MCAs across my sample period. As shown in Table 1.2, at the start of every legislative period<sup>24</sup> there are new MCAs adopting participatory budgeting, as well as MCAs dropping out of the program. This restriction is an important test for my results. By focusing on the sub-sample of adopting MCAs, I am able to control for all the possible characteristics this sub-group of MCAs shares that might have justified the adoption of participatory budgeting as well as a specific pattern of public expenditures allocation and its associated living standard outcomes.

Further econometric details as well as the estimation results associated with each one of these specifications are provided in the next sub-sections.

### 1.3.3 Baseline Specification

My econometric analysis is based on panel data regressions of the form:

$$y_{it} = \alpha_i + \gamma_t + \beta PB_{it} + \varepsilon_{it} \quad (1.1)$$

where  $y_{it}$  is the outcome variable of interest in MCA  $i$  at time  $t$ , and  $PB_{it}$  is the measure of participatory budgeting in the MCA.  $\alpha_i$  is a MCA fixed effect to account for MCA-specific and time-invariant factors, such as culture or geography, that might affect the outcome of interest, and  $\gamma_t$  is a year fixed effect, that captures time-specific but MCA-invariant shocks, such as macro shocks and country-wide policies.

Standard errors are heteroskedasticity-robust and clustered by MCA to deal with potential problems of serial correlation (Bertrand, Duflo and Mullainathan, 2004).

**Public Expenditures** Table 1.6 links the adoption of participatory budgeting to the allocation of budgetary expenditures at the MCA level. The right hand side variable measures the presence of participatory budgeting in a given MCA across time. This would typically be a binary variable, indicating the use (or not) of participatory budgeting in the allocation of public resources. However, because some of the MCAs include more than one municipality, the right hand side variable is the proportion of the MCA total budgetary expenditure that belongs to municipalities using participatory budgeting (within the MCA). Thus, this variable can assume any value between 0 (for the years when participatory budgeting was not used anywhere in the MCA) and 1 (for any year

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<sup>24</sup>The legislative periods are bounded by the mayoral elections, which take place every 4 years.

when the whole MCA is using participatory budgeting). The left hand side variables are the different classes of expenditures from the public accounts.<sup>25</sup> More precisely, I measure the proportion of the total MCA budget that is allocated to each one of the categories. For brevity, out of the existing 16 categories I only include the most important in size: “Administration and Planning”, “Health and Sanitation”, “Housing and Urbanism”, “Education and Culture” and “Legislative”. Other expenditure categories are grouped under “Other” which includes expenditures in “Social Assistance”, “External Relations”, “National Security”, “Judiciary”, “Labour”, “Communications”, “Energy”, “Transport”, “Agriculture”, “Industry” and “Services”. Table A.2 in the Appendix provides a description of the type of expenditures considered under each of these categories.

The findings in Table 1.6 suggest that there are significant differences in the allocation of expenditures associated with adoption of participatory budgeting. MCAs with a greater share of participatory budgeting spend a larger proportion of their total budget on health and sanitation (see column 2), at the expense of education and culture (column 4), administration and planning (column 1) and housing and urbanism (column 3). This is consistent with evidence of investments in sanitation being a top priority outcome of the popular forums. The estimated effect suggests an average difference of above 3 percentage points, between an MCA without participatory budgeting and an MCA that fully adopts participatory budgeting, of the budget share allocated to health and sanitation, which is as much as 30% of the variable’s sample mean at the beginning of the period (see Table 1.4).

Interestingly, it seems that this incremental effect does not follow from a superior financial capacity of adopting MCAs. In Table 1.7 I run the same regressions as in Table 1.6 but where budgetary expenditures are expressed in per capita terms as opposed to budget shares<sup>26</sup>. In column 1 of Table 1.7 we observe that participatory budgeting appears to be budget neutral as the coefficient associated with per capita total budgetary expenditures is not significant. The pattern of coefficients for the key heads of budgetary expenditure, in columns 2 to 7 of Table 1.7, is similar to that in Table 1.6.

**Effects on Health Outcomes** Focusing on health outcomes, Table 1.8 looks at the link between the adoption of participatory budgeting and infant and child mortality. As before, the participatory budgeting variable is a continuous variable between 0 and 1 that measures the presence of participatory budgeting within the MCA<sup>27</sup>. On the left hand

<sup>25</sup>In an alternative specification, and in order to simplify interpretation, the same regressions are also run treating *PB* as a binary variable by setting a minimum share above which we consider *PB*=1 for the MCA (e.g.: if I observe that the percentage of the MCA aggregate budget that belongs to municipalities with *PB* is equal to or above 50%, *PB* takes the value 1 in that particular period). Adopting this coding does not affect the results I observe in any significant way.

<sup>26</sup>These regressions are for the period 1994-2004 only. Due to the absence of adequate deflators I opt for not comparing nominal figures before the introduction of the “Plano Real”, in 1994. Running the regressions for the 1990-2004 period using the available deflators produces an identical pattern of results, though.

<sup>27</sup>I have rerun all the health outcome regressions using an alternative definition for the *PB* variable where it instead measures the percentage of infants and children living in municipalities with participatory

side, infant and child mortality rates at the MCA level are measured as the ratio of the number of deaths to the number of living residents of age up to 1 and 4 years old in the MCA, respectively. The results, in columns 1 and 2 of Table 1.8, suggest the existence of a negative association between these two variables and the use of participatory budgeting. Moreover the magnitude of the estimated effects of participatory budgeting adoption on mortality reduction is considerable. They represent about 12% and 10% of the infant and child mortality rates sample means in 1990, respectively.

It is likely that these effects on the mortality rates arise from the greater expenditure on health and sanitation associated with participatory budgeting. To investigate whether this is the case, I run the following regression that includes an interaction term between the expenditure share on health and sanitation and the adoption of participatory budgeting:

$$y_{it} = \alpha_i + \gamma_t + \beta_1 PB_{it} + \beta_2 ExpShare(Health\&Sanitation)_{it} + \beta_3 PB * ExpShare(Health\&Sanitation)_{it} + \varepsilon_{it} \quad (1.2)$$

$$+ \beta_3 PB * ExpShare(Health\&Sanitation)_{it} + \varepsilon_{it}$$

where the coefficient  $\beta_3$  captures the differential impact of this category of expenditures between MCAs with and without participatory budgeting.

The results in columns 3 and 5 of Table 1.8 display, not surprisingly, a negative association between having a greater proportion of the budget spent on health and sanitation and mortality rates. This estimated effect persists when I include a measure for the presence of participatory budgeting and its interaction with the health and sanitation budget share (columns 4 and 6). More importantly, in columns 4 and 6 we see that allocating more resources to health and sanitation (out of the total budget) seems to have a significantly larger effect on infant and child mortality rates when it appears together with the use of participatory budgeting. The estimated  $\beta_3$  coefficient is negative and significant and six times larger than the estimated  $\beta_2$ . This suggests that there is an efficiency gain from introducing participatory budgeting. Thus, every Real allocated to the health and sanitation sector has a larger impact on infant and child mortality when it is introduced in an MCA which has adopted participatory budgeting relative to one that has not.

**Omitted Variables** The adoption of participatory budgeting and budgetary and health outcomes may be being driven by other variables which vary across time at the MCA level. Given that in the period under analysis approximately half of the municipalities using participatory budgeting were governed by Workers' Party ("PT") mayors, one could argue that the participatory budgeting variable is quite simply a proxy for the presence of the Workers' Party and its particular model of government. To address this concern variables measuring the presence of different parties in the MCA are added to the baseline budgeting within the MCA. This produces no significant impact on the estimated results.

specification above:

$$y_{it} = \alpha_i + \gamma_t + \beta PB_{it} + \delta MP_{it}^p + \varepsilon_{it} \quad (1.3)$$

where  $MP_{it}^p$  stands for mayor's party and is a vector of variables for the percentage of budget in MCA  $i$  which is under the control of mayor of party  $p$  in year  $t$ .<sup>28</sup>

By including this full range of political controls in my regressions I am trying to ascertain whether participatory budgeting had any effect on public expenditures or health outcomes which is separate from that due to the political orientation of different mayors.

Table 1.9 contains the results for public expenditures where I regress in columns 1 to 6 the main MCA budget shares on participatory budgeting and also include my political controls. The results look highly consistent with the results from columns 1 to 6 of Table 1.6 which only include the participatory budgeting variable. Health and sanitation remains the main beneficiary from an MCA adopting participatory budgeting. The findings in Table 1.9 increase my confidence that the relationship between participatory budgeting and public expenditures is not being driven by omitted variables.

In columns 1 and 2 of Table 1.10 for infant and child mortality respectively, we observe that the inclusion of the additional information on the mayor's political party does not affect the relationship between participatory budgeting and these health outcomes. The results for columns 1 and 2 of Table 1.10 line up exactly with those in columns 1 and 2 of Table 1.8. In columns 1 and 2 of Table 1.10 we find that having greater control by Workers' Party mayors (or by mayors from *PL*, *PTB*, *PMDB* or *PSDB*) within an MCA is associated with greater infant and child mortality. Despite these "party effects" the participatory budgeting effect remains robust and significant. This increases our confidence that changes in local government activity associated with adoption of participatory democracy (such as the prioritization of health and sanitation expenditures) resulted in improvements in health outcomes such as infant and child mortality.

To test further for the existence of an independent participatory budgeting effect separate from a possible "Workers' Party model" effect, I exclude from the sample all MCAs with any occurrence of Workers' Party mayors and re-run my regressions. This is possible given that participatory budgeting has also been adopted by rival parties to the Workers' Party. The results are presented in Table 1.11 where columns 1 to 6 present the results for public expenditures and columns 7 and 8 present the results for

<sup>28</sup>Given that the Brazilian multiparty system implies that there is a (very) large number of political parties (many of which with a tiny representation at the polls), I have decided to focus on the 8 largest parties, as defined by the performance in the last decade's municipal elections (the remaining parties are the omitted category). Therefore,  $p = \{PMDB, PSDB, PFL, PL, PPB, PTB, PT, PDT\}$  where *PT* refers Partido dos Trabalhadores (i.e. Workers' Party), *PPB* – Partido Popular Brasileiro, *PFL* – Partido da Frente Liberal, *PL* – Partido Liberal, *PTB* – Partido Trabalhista Brasileiro, *PMDB* – Partido do Movimento Democrático Brasileiro, *PSDB* – Partido da Social Democracia Brasileira and *PDT* – Partido Democrático Trabalhista. Parties that merged or acted in coalition over the period are also taken into account. This means that *PST* and *PGT* results were coded as *PL*; *PDS*, *PPR* and *PP* as *PPB*; and *PSD* as *PTB*.

In terms of political orientation *PDS*, *PFL*, *PL* and *PTB* are right wing, *PMDB* is centre right, *PSDB* is centre left and *PT* and *PDT* are left wing.

infant and child mortality. The basic pattern of results observed in Tables 1.9 and 1.10 hold. The share of MCA budgets dedicated to health and sanitation increases whereas administration and planning, housing and urbanism, education and culture and legislative shares decline. As these effects are being identified by non-Workers' Party mayors which adopted participatory budgeting they strongly suggest that adoption of this system of local government produces effects on public expenditures and health outcomes which are independent of the political orientation of a given political party.

A plausible scenario is that demand for basic health and sanitation is high in a number of Brazilian MCAs, however the adoption of participatory democracy is needed to align the preferences of citizens and politicians. In effect participatory democracy represents a mechanism for unlocking this demand and for allowing for it to be expressed in the actual public policies which are implemented at the MCA level in Brazil. Just electing mayors of a particular political hue is not sufficient to achieve this. What we are likely observing is the effect of changing the system of local government as opposed to changing the political orientation of the governing mayor. The fact that this may be a system effect is encouraging as it suggests that participatory democracy may be successfully adopted and implemented by a range of political parties as indeed has been the case in Brazil and elsewhere. In essence, it represents a system for potentially improving the aggregation of citizens' preferences in the formulation of public policy at the local level.

#### 1.3.4 Matching Specification

A separate concern from that of the omitted variables, is that adopters and non-adopters are not comparable. Differences between these two groups which pre-date the adoption of participatory budgeting may both affect the propensity to adopt and also influence public expenditure and health outcomes. For example, based on data from the Brazilian Census, I observe that MCAs which adopted participatory budgeting tend to be, on average, richer, more educated, more urbanized, more densely populated and to have better housing infrastructure than non-adopting MCAs.<sup>29</sup>

To mitigate this concern, I match adopting MCAs (MCAs with some occurrence of participatory budgeting) with non-adopting MCAs (MCAs with no experience of participatory budgeting) at the beginning of my sample period. I match on two 1991 indicators – the MCA average per capita household income level and the MCA average education level among adults over 25 years old. These are likely to affect the propensity for an MCA to adopt participatory budgeting and are also likely to be instrumental in affecting public expenditures and health outcomes. Separate matching exercises are carried out for each one of these indicators.

In these matching exercises I rank all 3,650 MCAs based on the level of these two 1991 indicators, and for each adopting MCA I select its closest non-adopting MCA. In

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<sup>29</sup>MCA level data on these variables is not available on a yearly basis which constrains my ability to include them in the panel data regressions reported above. The Brazilian Population Census, which produces socioeconomic data for all the municipalities in the country, is only available every 10 years.

cases where more than one non-adopting MCA was available for matching, I select the non-adopting MCA which is geographically most proximate to my adopting MCA. This procedure substantially reduces the size of the sample available for econometric analysis, but increases my confidence that I am effectively tracking MCAs across time that are more comparable in aspects that are relevant for the effects I want to estimate.

Panels A and B of Tables 1.12 contain the results for public expenditures where the matching exercise is based on, respectively, the MCA average per capita household income level and the MCA average education level among adults over 25 years old in 1991. The pattern of results for the key heads of budgetary expenditure, in columns 1 to 6 of both panels, is similar to that in Table 1.6 for the full sample, although the magnitude of the estimated effects is now smaller. The estimation results in panel A, where the matching between adopting and non-adopting MCAs is based on the average per capita household income level, suggest an average difference of approximately 2.1 percentage points on the budget share allocated to health and sanitation between an MCA that fully adopts participatory budgeting and an MCA without participatory budgeting (instead of the 3.4 percentage points estimated for the full sample - see column 2 in Table 1.6), which is as much as 20% of the variable's mean at the beginning of the period, in 1990, for this sub-sample. As before the larger allocation of expenditures to the health and sanitation sector is made at the expense of housing and urbanism (column 3). The use of participatory budgeting in this sub-sample of MCAs also remains negatively associated with the allocation of administration and planning, education and culture and legislative expenditures, although this link is no longer statistically significant (columns 1, 3 and 5).

In panel B of Table 1.12 the matching between adopting and non-adopting MCAs is based on the MCA average education level among adults as of 1991. The difference in the matching criterion with respect to panel A - average education levels instead of per capita household income - results in different samples being available for the econometric analysis. However, the estimates for public expenditures in columns 1 to 6 of panel B are very similar to the ones found in panel A.

Table 1.13 presents the results for infant and child mortality. As before, panels A and B contain the results for the matching based on, respectively, the MCA average per capita household income and the average education level among adults over 25 years old in 1991. The estimated results in both panels of Table 1.13 follow a similar pattern to the ones estimated for the full sample in Table 1.8, although the magnitude of the estimated effects is smaller. Columns 1 and 2 once again suggest the existence of a significant association between the use of participatory budgeting and lower infant and child mortality rates. In both panels, the estimated effect suggests an average reduction in infant (child) mortality of approximately 2 (0.4) infants (children) for every 1,000 residents up to 1 (4) years of age for an MCA that fully adopts participatory budgeting as compared to an MCA without participatory budgeting. These estimated effects represent approximately 8% and 6% of the infant and child mortality rates sample means at the beginning of the period (which,

for both subsamples in panel A and B, were around 26 infants and 6 children for every 1,000 residents, respectively). More important, once the MCAs budget share on health and sanitation is controlled for (columns 3 to 6), we see that allocating more resources to this category of expenditure only seems to have a significant effect on the mortality rates when it comes together with the use of participatory budgeting (see columns 4 and 6). Evaluated at the health and sanitation expenditure share whole sample mean (approximately 17.3% for the sub-sample of 453 MCAs in panel A and 17% for the sub-sample of 440 MCAs in panel B), an MCA that fully adopts participatory budgeting is expected to have an infant (child) mortality rate around 0.2 (0.03) percentage points smaller than an MCA with no participatory budgeting, which is in line with the effect estimated in column 1 (2) in the same Table 1.13.

The similarity between the estimates found throughout both panels in Tables 1.12 and 1.13 and their overall consistency with the results obtained using the full sample of MCAs in Tables 1.6 and 1.8 increases my confidence that adoption of participatory budget both skews municipal expenditures towards health and sanitation and is associated with a fall in infant and child mortality.

### 1.3.5 Adopters Only Specification

The matching procedure above does not completely eliminate concerns about the existence of unobservable factors that might systematically affect the likelihood of adopting participatory budgeting and also affect the outcome variables of interest. It is possible, for instance, that adopting MCAs could have developed different preferences for improving health and sanitation and for reducing infant mortality relative to non-adopting MCAs. These preferences might have led them to both use participatory budgeting and to take actions to reduce infant and child mortality. The positive correlation between adoption of participatory budgeting and spending on health and sanitation and the negative correlation between adoption of participatory budgeting and infant and child mortality observed in the full sample may be wrongly interpreted as capturing the causal impact of participatory budgeting on these outcomes. If this is case the group of non-adopting MCAs in the full sample no longer serves as a valid comparison group with adopting MCAs. To address this concern I restrict the sample available for analysis to the group of MCAs that at some point during the 1990 to 2004 period adopted participatory budgeting. This exercise is possible given that there is substantial variation in the timing and the duration of participatory budgeting adoption across MCAs (see Table 1.2). As a result, I am able to identify the participatory budgeting effects on public expenditures and on health outcomes by exploiting the time-variation in the time of adoption within the group of adopting MCAs across my sample period. The rationale behind this identification strategy is that by restricting the sample to the group of adopting MCAs I am able to “control” for all specific and non-observable factors shared by adopting MCAs that may have both influenced their decision to adopt participatory budgeting and to change

the allocation of public expenditures and reduce infant and child mortality.<sup>30</sup> This allows me to more cleanly estimate the effects associated with the adoption of participatory budgeting.

Columns 1 to 6 of Table 1.14 provide the estimated effects of participatory budgeting on public expenditures after imposing this sample restriction. Again, they confirm the main results that we obtained for the full sample in Table 1.6. As we can see in column 2 (Table 1.14), the use of participatory budgeting is associated with a significantly larger allocation of public expenditures to the health and sanitation sector. The estimated coefficient in column 2 suggests an average increase of about 1.2 percentage points in the budget share allocated to health and sanitation once the MCA adopts participatory budgeting, which is about 11% of the “adopters only” sub-sample average budget share in health and sanitation at the beginning of the period (10.8%). At the same time, the use of participatory budgeting significantly reduces the share of the public budget directed to housing and urbanism (column 3) expenditures by around 1.5 percentage points.

Table 1.15 looks at the link between the adoption of participatory budgeting, health and sanitation expenditures and infant and child mortality rates within the sample of adopting MCAs. The estimated results for this restricted sample suggest the existence of a negative association between these variables and the use of participatory budgeting, in line with the full sample results found in Table 1.8 and with the results found in the matching specifications discussed above. Within the sample of adopters, the use of participatory budgeting appears to be associated with an average reduction in infant mortality of approximately 1 infant for every 1,000 residents up to 1 year old, which is about 4.5% of this sub-sample average infant mortality rate in the period (approximately 22 infants for every 1,000 residents up to 1 year old). As in the previous specifications in Table 1.13, we see that allocating more resources to health and sanitation (out of the total budget) only seems to have a significant impact in reducing infant mortality rates when it appears together with the use of participatory budgeting.

Overall, the results estimated within the sample of adopting MCAs for the 1990-2004 period strongly suggest that adoption of participatory budgeting by MCAs results in a change in the allocation of public expenditures which is in line with popular demand as expressed in participatory forums. The results from the matched sub-samples reinforce this view. Adoption of participatory budgeting across a range of specification is associated with an increase in the share of the MCA budget allocated to health and sanitation. Moreover, the changes in the infant and child mortality rates associated with adoption of participatory budgeting strongly suggest that the expansion in health and sanitation spending within adopting MCAs results in significant and substantial declines in infant and child mortality rates. Again these results linking adoption of participatory budgeting to key health outcomes are robust across a whole range of specifications.

These health improvements are likely to have come about because participatory bud-

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<sup>30</sup>This is true provided that these specific factors or preferences that characterize the adopting MCAs do not vary across time.

geting led to more attention being paid to health and sanitation in the overall allocation of public expenditures. Further, in MCAs that adopted participatory budgeting each Real on health and sanitation expenditure had a large impact on infant and child mortality relative to that in non-adopting MCAs. This efficiency gain in public money allocation associated with the use of participatory budget is possible not only because participatory budgeting narrows down the information asymmetries between the elected politicians and the citizens, but also because it promotes a greater monitoring, by the citizens, on the projects that integrate the public budget. Thus, results from this paper importantly suggest that adoption of participatory budgeting can have important impacts both because it allows citizens' views to be better represented in the policy making process and also because it provides a means for citizens to monitor the actions of elected politicians.

#### 1.4 Conclusion

The adoption of participatory budgeting has been a highly popular reform at the municipal level in Brazil. The perceived success of participatory budgeting in key municipalities like Porto Alegre led to its widespread adoption across Brazilian municipalities and stimulated the development of similar budgeting programs across the developing and also the developed world. In Brazil, the Workers' Party, the political party responsible for its development and initial implementation, came to national power on the back of this reform, which has since been emulated by other parties.

However, very little evidence exists of its effects in Brazil, or elsewhere, on local finances and living standards. Despite all the praise and endorsement received from international organizations such as the United Nations (whose city development program praised participatory budgeting as an important innovative experience in city management) and the World Bank (which is a strong advocate of the relevance of community participation in improving development outcomes), whether participatory budgeting is effective in improving political accountability and government responsiveness is an open question.

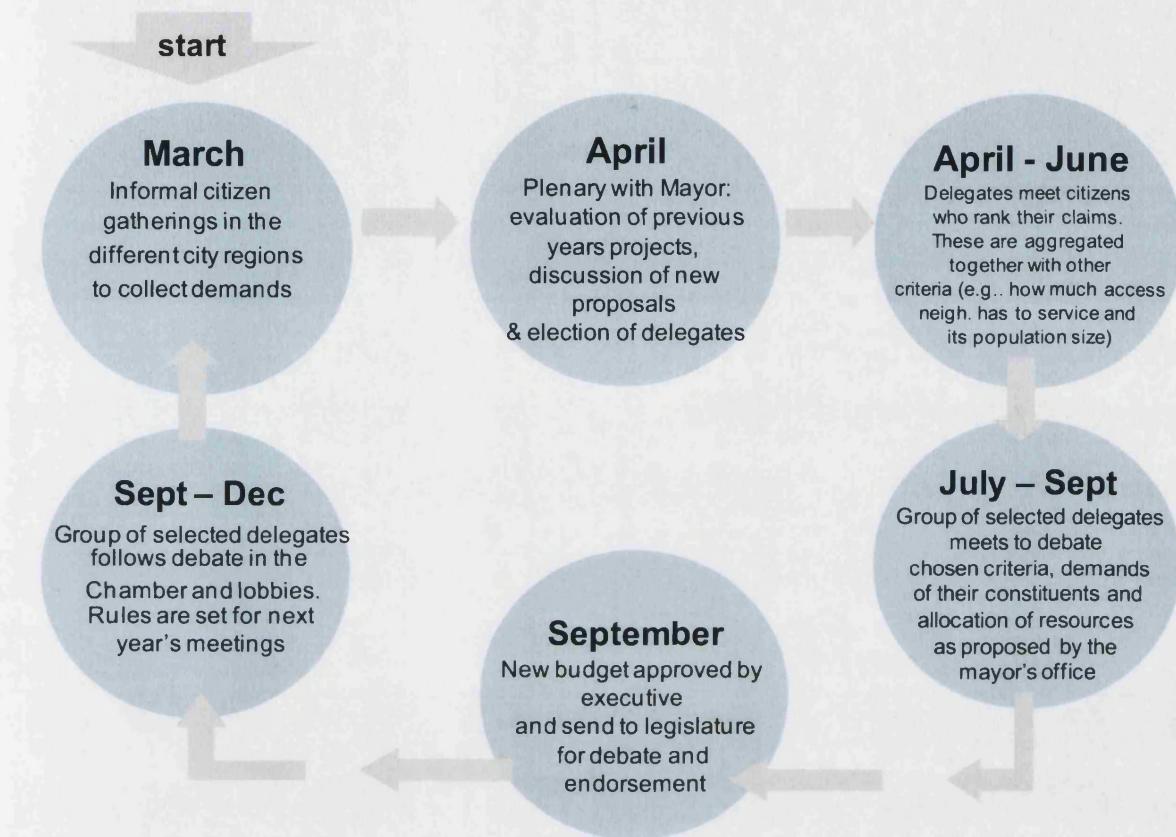
To fill this important gap in the literature I have put together a municipality panel data set covering the whole of Brazil for the period 1990 to 2004. This data set includes municipal level information on adoption of participatory budgeting, public expenditures and health outcomes. Using this unique data set I identify the effects on public expenditure and associated living standard outcomes associated with adoption of participatory budgeting by exploiting the rich variation in time of adoption and duration of adoption both within and across municipalities across time.

Although general welfare conclusions cannot be drawn, it is clear from my results that the direction of changes in the allocation of resources across budgetary heads do seem to match with what we know from the citizens' expenditure preferences. In particular adoption of participatory budgeting at the municipal level is associated with increased expenditure on basic sanitation and health services (such as water and sewage connections,

waste removal) leading to these services occupying an increased share of total municipal budgets. Associated with this reallocation of resources at the municipal level we also observe a significant reduction in the infant mortality rates among municipalities that adopted participatory budgeting. In this sense the reform appears to have brought government functioning closer to citizens' preferences and to have resulted in improvements in living standards along this key dimension.

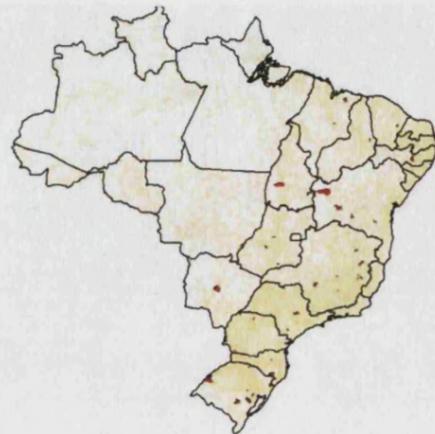
### 1.5 Figures and Tables

**Figure 1.1: Participatory Budgeting - Yearly Cycle**



**Figure 1.2:** Geographic Evolution of PB

1989-1992



1993-1996



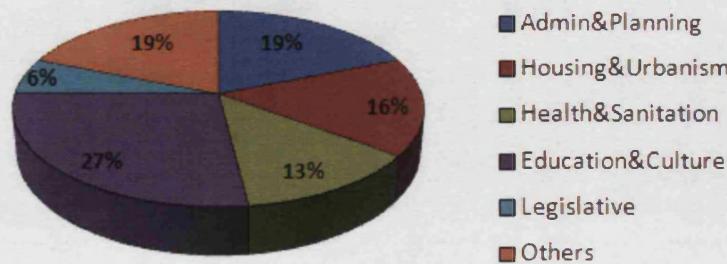
1997 - 2000



2001-2004

Figure 1.3: Municipal Expenditures by Category

municipal expenditures 1990



municipal expenditures 2004

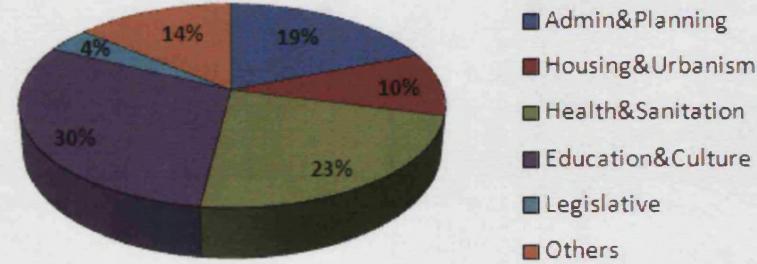
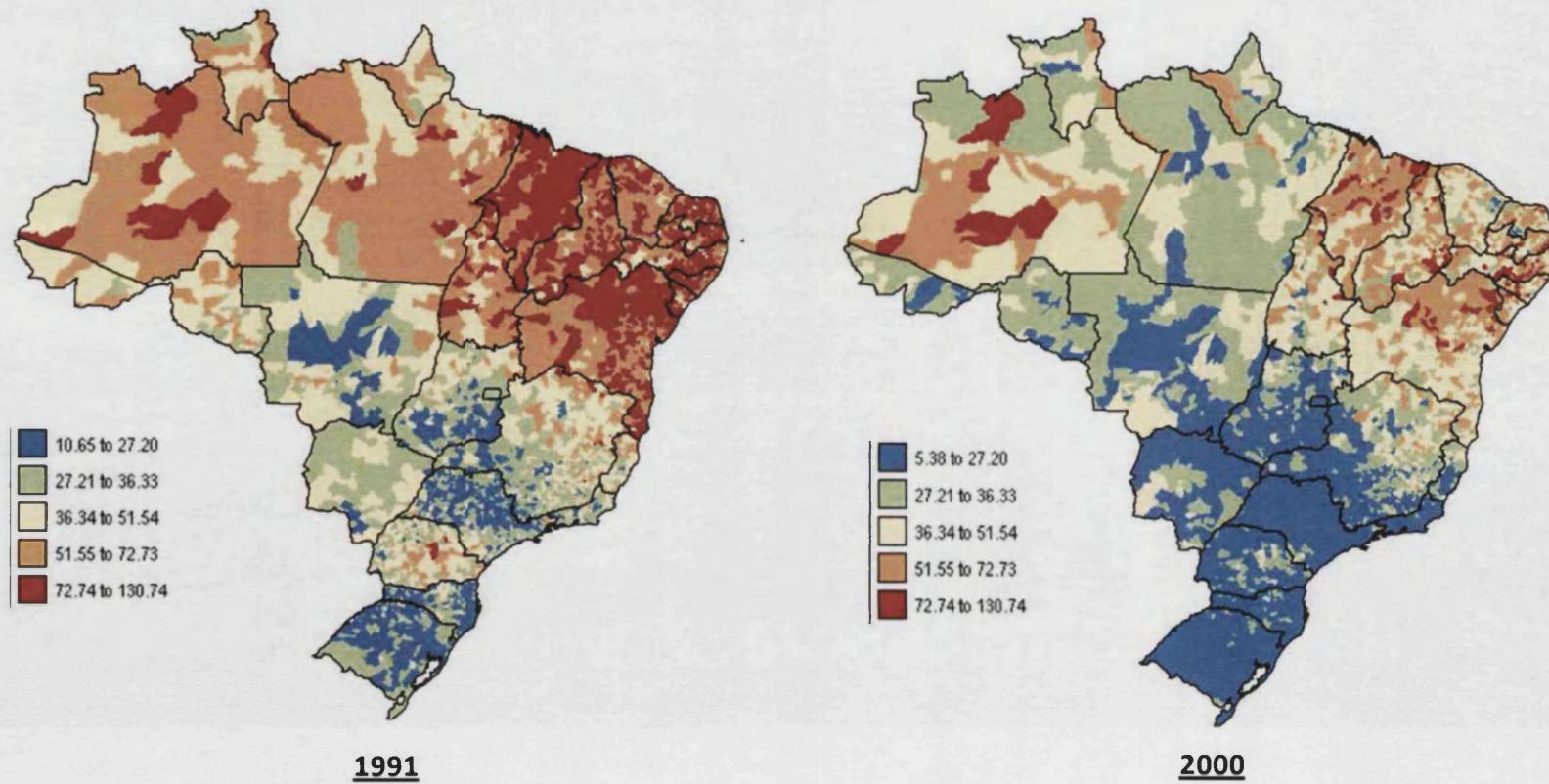
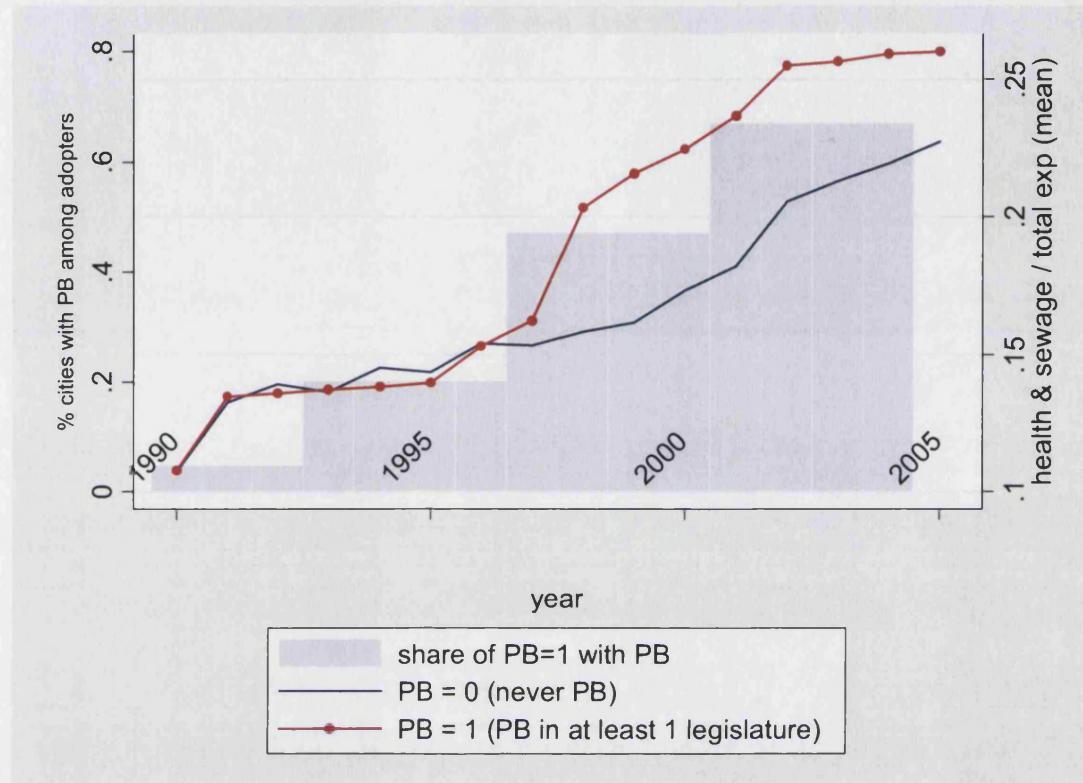


Figure 1.4: Infant Mortality by Municipality



Source: Atlas do Desenvolvimento Humano, UNDP

**Figure 1.5:** Evolution of Expenditure Share on Health and Sanitation - Adopters versus Non-Adopters



**Table 1.1:** Municipalities with Participatory Budgeting Across Time

No. of municipalities	1986-1988	% pop	1989-1992	% pop	1993-1996	% pop	1997-2000	% pop	2001-2004	% pop
with PB	1	0.18%	12	9.31%	51	11.67%	119	15.62%	169	27.04%
with Workers' Party mayor	2	0.22%	37	10.44%	55	5.54%	115	5.04%	186	17.56%
Workers' Party & PB	1	-	10	-	20	-	55	-	78	-
Total no. municipalities	3,991	139,287	4,491	145,336	4,974	154,544	5,507	163,793	5,561	175,394

Note: I take every 4-year legislative period bounded by a mayoral election as the indicative date for the beginning (or end) of a participatory

**Table 1.2:** MCAs with Participatory Budgeting Across Time

No. of MCA's	1986-1988	1989-1992	1993-1996	1997-2000	2001-2004
with PB	1	12	50	108	157
with Workers' Party mayor	2	37	52	100	158
Workers' Party & PB	1	10	20	51	73
Total no. MCA's	3,652	3,652	3,652	3,652	3,652

Note: I take every 4-year legislative period bounded by a mayoral election as the indicative date for the beginning (or end) of a participatory

**Table 1.3:** Priorities Voted in PB Forums in Porto Alegre

Year	1st	2nd	3rd
2004	Housing	Social	Education
2003	Housing	Education	Paving
2002	Housing	Education	Paving
2001	Paving	Housing	<b>Basic Sanitation</b>
2000	Housing	Paving	Health
1999	<b>Basic Sanitation</b>	Paving	Housing
1998	Paving	Housing	<b>Basic Sanitation</b>
1997	Housing	Paving	<b>Basic Sanitation</b>
1996	Paving	<b>Basic Sanitation</b>	Land Use Reg
1995	Paving	Land Use Reg	<b>Basic Sanitation</b>
1994	Land Use Reg	Paving	<b>Basic Sanitation</b>
1993	<b>Basic Sanitation</b>	Paving	Land Use Reg
1992	<b>Basic Sanitation</b>	Education	Paving

Source: *Municipality of Porto Alegre*

Table 1.4: Descriptive Statistics as of 1990

Variable	Obs	Mean	Std. Dev.	Min	Max
<b><i>Census Data (1991)<sup>1</sup></i></b>					
area (Km2)	3,650	2,336	14,320	3.7	361,329
resident population	3,650	40,204	212,487	751	9,646,285
urban population (%)	3,650	54.9	22.8	2.2	100
people in houses with garbage collection (%)	3,650	56.4	30.6	0	100
people in subnormal housing (%)	3,650	0.6	2.9	0.0	65.9
houses w/ electricity connection (%)	3,650	73.4	22.2	3	100
houses w/ water connection public network (%)	3,650	42.2	23.9	0	96.9
houses w/ sewage connection public network (%)	3,650	18	26.6	0	95.7
avg yrs education >25 yrs old	3,650	3.1	1.2	0.4	8.8
enrolment rate 7-14 year olds (%)	3,650	72.7	14.1	9.2	99
illiterate population > 15 yrs old (%)	3,650	30.1	16.4	1.8	1.4
per capita monthly hh income (R\$ 2000)	3,650	0.7	0.4	0.1	3.5
theil index	3,650	0.5	0.1	0.2	1.4
resident doctors per 1,000 inhabitants	3,650	0.3	0.5	0.0	6.9
graduate nurses over total residents (%)	3,650	0.1	0.1	0.0	0.6
life expectancy	3,650	62.8	3.8	50.4	73.8
infant mortality (UNDP) <sup>2</sup>	3,650	49.7	24.5	11.1	125.2
<b><i>Ministry of Health Data</i></b>					
infant mortality (<1 yr old) <sup>3</sup>	3,270	0.02	0.02	0.00	0.24
child mortality (<4 yr old) <sup>3</sup>	3,270	0.006	0.006	0.00	0.05
<b><i>Treasury Data</i></b>					
total per capita budgetary expenditure <sup>4</sup> (1990)	3,270	85.1	64.7	2.2	1417.4
total per capita budgetary expenditure <sup>4</sup> (1994)	3,509	116.4	84.9	19.9	1481.8
% spending administration & planning	3,270	0.19	0.08	0.00	0.92
% spending housing & urbanism	3,270	0.16	0.11	0.00	0.63
% spending health & sanitation	3,270	0.11	0.07	0.00	0.52
% spending education & culture	3,270	0.25	0.06	0.00	0.68
% spending legislative	3,270	0.05	0.03	0.00	0.69
% spending new investment	3,270	0.25	0.11	0.00	0.83

Note: based on minimal comparable areas (MCA's)

<sup>1</sup> Census Data is from 1991.

<sup>2</sup> Infant mortality rate as defined by the UN - number of deaths per 1,000 live births.

<sup>3</sup> Mortality rate calculated as the ratio of number of deaths by the number of residents.

<sup>4</sup> BRL at constant prices of 1994

**Table 1.5:** Descriptive Statistics - whole sample (1990-2004)

Variable		Mean	Std. Dev.	Observation
% spending admin. & planning	overall	0.180	0.089	N = 47684
	<i>between</i>		0.047	<i>n</i> = 3650
	<i>within</i>		0.076	
% spending housing & urbanism	overall	0.120	0.078	N = 47684
	<i>between</i>		0.050	<i>n</i> = 3650
	<i>within</i>		0.061	
% spending health & sanitation	overall	0.167	0.076	N = 47684
	<i>between</i>		0.046	<i>n</i> = 3650
	<i>within</i>		0.061	
% spending education & culture	overall	0.290	0.073	N = 47684
	<i>between</i>		0.042	<i>n</i> = 3650
	<i>within</i>		0.060	
% MCA budget spent using PB	overall	0.022	0.141	N = 47684
	<i>between</i>		0.092	<i>n</i> = 3650
	<i>within</i>		0.103	
infant mortality (<1 yr old)	overall	0.020	0.019	N = 44401
	<i>between</i>		0.012	<i>n</i> = 3650
	<i>within</i>		0.014	
child mortality (<4 yr old)	overall	0.005	0.004	N = 47679
	<i>between</i>		0.003	<i>n</i> = 3650
	<i>within</i>		0.003	

Note: based on 3,650 minimal comparable areas (MCA's)

Table 1.6: The Effect of PB on Budget Allocations

OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.011** [0.005]	0.034*** [0.005]	-0.015*** [0.004]	-0.014*** [0.004]	-0.002 [0.002]	0.008* [0.004]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	47,707	47,707	47,707	47,707	47,707	47,707
Nr categories (MCA's)	3,650	3,650	3,650	3,650	3,650	3,650
R-squared	0.42	0.48	0.44	0.46	0.26	0.49

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

The dependent variables measure the proportion of the total MCA public budget ("BME") allocated to each one of the categories.

Table 1.7: The Effect of PB on per capita Expenditures

OLS - FE	Total budgetary expenditure pc	Exp on Administration & Planning pc	Exp on Health & Sanitation	Exp on Housing & Urbanism pc	Exp on Education & Culture pc	Exp on Legislative pc	Other Exp pc
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PB <sup>1</sup>	-7.27 [5.098]	-3.65** [1.449]	5.58*** [1.846]	-5.31*** [1.369]	-3.70** [1.671]	-0.93* [0.530]	-4.21 [4.91]
year effects	yes	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes	yes
Observations	34,781	34,781	34,781	34,781	34,781	34,781	34,781
Nr categories (MCA's)	3,650	3,650	3,650	3,650	3,650	3,650	3,650
R-squared	0.84	0.73	0.68	0.65	0.81	0.53	0.48

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Per capita expenditures, at constant prices, for the period 1994-2004 (after Real).

<sup>1</sup> PB represents the % of people within the MCA living in municipalities with participatory budgeting.

Table 1.8: The Effect of PB and Health Expenditures on Mortality

OLS - FE	infant mortality	child mortality	infant mortality	infant mortality	child mortality	child mortality
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.003*** [0.0007]	-0.001*** [0.0001]		-0.001 [0.001]		-0.000 [0.000]
Exp on Health & Sanitation / BME			-0.003* [0.002]	-0.002 [0.002]	-0.001* [0.0004]	-0.0004 [0.0004]
(Exp on Health & Sanitation / BME) * PB				-0.012*** [0.004]		-0.002*** [0.001]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	47,707	47,707	47,707	47,707	47,707	47,707
Nr categories (MCA's)	3,650	3,650	3,650	3,650	3,650	3,650
R-squared	0.41	0.44	0.41	0.41	0.44	0.44

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

Mortality rates calculated as the ratio of number of deaths by the number of residents in the relevant age group.

**Table 1.9:** The Effect of PB and Mayor's Party on Budget Allocation

OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.011** [0.005]	0.030*** [0.005]	-0.014*** [0.005]	-0.012*** [0.004]	-0.003* [0.002]	0.009* [0.005]
PT <sup>2</sup>	0.004 [0.005]	0.009 [0.006]	-0.001 [0.005]	-0.006 [0.004]	0.003* [0.002]	-0.010** [0.005]
PPB <sup>2</sup>	0.002 [0.003]	-0.000 [0.003]	-0.000 [0.005]	-0.001 [0.003]	-0.001 [0.001]	0.000 [0.003]
PFL <sup>2</sup>	-0.000 [0.003]	0.000 [0.003]	0.005** [0.002]	-0.004 [0.002]	0.001 [0.001]	-0.002 [0.003]
PL <sup>2</sup>	-0.002 [0.003]	0.003 [0.003]	0.001 [0.003]	0.001 [0.003]	0.004*** [0.001]	-0.006 [0.004]
PTB <sup>2</sup>	0.001 [0.003]	-0.001 [0.003]	0.002 [0.003]	-0.002 [0.003]	0.001 [0.001]	-0.000 [0.003]
PMDB <sup>2</sup>	0.003 [0.003]	-0.001 [0.003]	0.004 [0.002]	-0.002 [0.003]	-0.001 [0.001]	-0.001 [0.003]
PSDB <sup>2</sup>	-0.003 [0.003]	-0.003 [0.003]	0.007*** [0.002]	0.002 [0.002]	-0.001 [0.001]	-0.001 [0.003]
PDT <sup>2</sup>	0.004 [0.004]	-0.006* [0.003]	0.003 [0.003]	-0.002 [0.003]	-0.000 [0.001]	0.003 [0.004]
other parties	yes	yes	yes	yes	yes	yes
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	43,680	43,680	43,680	43,680	43,680	43,680
Nr categories (MCA's)	3,650	3,650	3,650	3,650	3,650	3,650
R-squared	0.42	0.49	0.49	0.47	0.26	0.61

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup>PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.<sup>2</sup>% of budget in the MCA under a mayor from this party.

Political orientation: Right wing - PPB, PFL, PL, PTB; Centre-right: PMDB; Centre-left: PSDB; Left wing: PT, PDT

Table 1.10: The Effect of PB and Mayor's Party on Mortality

OLS - FE	infant mortality		child mortality
	(1)	(2)	
PB <sup>1</sup>	-0.004*** [0.001]	-0.001*** [0.0002]	
PT <sup>2</sup>	0.003*** [0.001]	0.001*** [0.0001]	
PPB <sup>2</sup>	0.002*** [0.001]	0.0004*** [0.0002]	
PFL <sup>2</sup>	0.001* [0.001]	0.0002 [0.0002]	
PL <sup>2</sup>	0.002*** [0.001]	0.001*** [0.0002]	
PTB <sup>2</sup>	0.002*** [0.001]	0.001*** [0.0002]	
PMDB <sup>2</sup>	0.002** [0.001]	0.0004** [0.0002]	
PSDB <sup>2</sup>	0.001* [0.001]	0.0003* [0.0002]	
PDT <sup>2</sup>	0.001 [0.001]	0.0003 [0.0002]	
other parties	yes	yes	
year effects	yes	yes	
MCA effects	yes	yes	
Observations	43,680	43,680	
Nr categories (MCA's)	3,650	3,650	
R-squared	0.39	0.42	

NOTES: Robust s.e. in brackets, clustered at "MCA" level.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

<sup>1,2</sup> see notes in Table 1.9

Table 1.11: The Effect of PB on Budget Allocation and Mortality (non-PT municipalities only)

OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME	infant mortality	child mortality
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB <sup>1</sup>	-0.009 [0.006]	0.036*** [0.008]	-0.013** [0.006]	-0.011** [0.005]	-0.007** [0.003]	0.005 [0.006]	-0.004*** [0.001]	-0.001*** [0.0002]
year effects	yes	yes	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	40,504	40,504	40,504	40,504	40,504	40,504	40,504	40,504
Nr of categories (MCA's)	3,412	3,412	3,412	3,412	3,412	3,412	3,412	3,412
R-squared	0.42	0.48	0.44	0.47	0.25	0.49	0.40	0.42

NOTES: Robust s.e. in brackets, clustered at MCA level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

In columns 1-6 the dependent variables measure the proportion of the total MCA public budget ("BME") allocated to each one of the categories. In columns 7-8 the dependent variables measure the ratio between the number of deaths and the number of residents up to 1 and 4 years old, respectively.

**Table 1.12:** Nearest Neighbour - Budget Allocation

<b>A - Household per capita Income</b>						
OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.005 [0.005]	0.021*** [0.005]	-0.016*** [0.004]	-0.005 [0.004]	-0.001 [0.003]	0.012** [0.005]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	5,818	5,818	5,818	5,818	5,818	5,818
Nr of categories (MCA's)	453	453	453	453	453	453
R-squared	0.51	0.57	0.55	0.47	0.48	0.52

<b>B - Average Education Level</b>						
OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.003 [0.005]	0.019*** [0.005]	-0.017*** [0.004]	-0.003 [0.004]	-0.002 [0.004]	0.009** [0.005]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	5,676	5,676	5,676	5,676	5,676	5,676
Nr of categories (MCA's)	440	440	440	440	440	440
R-squared	0.53	0.58	0.55	0.48	0.48	0.51

NOTES: Robust s.e. in brackets, clustered at MCA level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Sample restricted to 228 adopting MCA's and their nearest control neighbours based on household per capita income (panel A) and on avg number of years of education in 1991 (panel B).

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

The dependent variables measure the proportion of the total MCA public budget ("BME") allocated to each one of the categories.

**Table 1.13:** Nearest Neighbour - Mortality

<b>A - Household per capita Income</b>						
OLS - FE	infant mortality	child mortality	infant mortality	infant mortality	child mortality	child mortality
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.002*** [0.001]	-0.0004*** [0.0001]		-0.0004 [0.0013]		0.000 [0.000]
Exp on Health & Sanitation / BME			-0.001 [0.003]	0.002 [0.003]	-0.0002 [0.0006]	0.0005 [0.0007]
(Exp on Health & Sanitation / BME) * PB				-0.010** [0.005]		-0.002** [0.001]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	5,818	5,818	5,818	5,818	5,818	5,818
Nr categories (MCA's)	453	453	453	453	453	453
R-squared	0.39	0.43	0.39	0.39	0.43	0.44

<b>B - Average Education Level</b>						
OLS - FE	infant mortality	child mortality	infant mortality	infant mortality	child mortality	child mortality
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.002*** [0.001]	-0.0004*** [0.0001]		-0.0003 [0.0013]		-0.000 [0.000]
Exp on Health & Sanitation / BME			-0.001 [0.003]	0.002 [0.003]	-0.0004 [0.0006]	0.0003 [0.0006]
(Exp on Health & Sanitation / BME) * PB				-0.009* [0.005]		-0.002* [0.001]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	5,676	5,676	5,676	5,676	5,676	5,676
Nr categories (MCA's)	440	440	440	440	440	440
R-squared	0.41	0.45	0.40	0.41	0.45	0.45

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \*\* significant at 5%; \*\*\* significant at 1%

Sample restricted to 228 adopting MCA's and their nearest control neighbours based on household per capita income (panel A) and on avg number of years of education in 1991 (panel B).

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

Mortality rates calculated as the ratio of number of deaths by the number of residents in the relevant age group.

Table 1.14: The Effect of PB on Budget Allocation (PB adopters only)

OLS - FE	Administration & Planning / BME	Health & Sanitation / BME	Housing & Urbanism / BME	Education & Culture / BME	Legislative / BME	Others / BME
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.000 [0.005]	0.012*** [0.005]	-0.015*** [0.004]	-0.002 [0.004]	-0.003 [0.002]	0.007 [0.005]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	3,229	3,229	3,229	3,229	3,229	3,229
Nr of categories (MCA's)	228	228	228	228	228	228
R-squared	0.50	0.61	0.57	0.48	0.43	0.55

NOTES: Robust s.e. in brackets, clustered at MCA level. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory

The dependent variables measure the proportion of the total MCA public budget ("BME") allocated to each one of the categories.

Table 1.15: The Effect of PB on Mortality (PB adopters only)

OLS - FE	infant	child	infant	infant	child	child
	mortality	mortality	mortality	mortality	mortality	mortality
	(1)	(2)	(3)	(4)	(5)	(6)
PB <sup>1</sup>	-0.001** [0.001]	-0.0002* [0.0001]		0.001 [0.001]		0.0001 [0.0003]
Exp on Health & Sanitation / BME			0.004 [0.004]	0.008 [0.005]	0.0004 [0.0009]	0.001 [0.001]
(Exp on Health & Sanitation / BME) * PB				-0.010* [0.001]		-0.002 [0.001]
year effects	yes	yes	yes	yes	yes	yes
MCA effects	yes	yes	yes	yes	yes	yes
Observations	3,229	3,229	3,229	3,229	3,229	3,229
Nr categories (MCA's)	228	228	228	228	228	228
R-squared	0.53	0.54	0.53	0.53	0.54	0.54

NOTES: Robust s.e. in brackets, clustered at "MCA" level. \*\* significant at 5%; \*\*\* significant at 1%

<sup>1</sup> PB represents the % of budget within the MCA decided in municipalities with participatory budgeting.

Mortality rates calculated as the ratio of number of deaths by the number of residents in the relevant age group.

## A Appendix

**Table A.1:** Municipal Accounts (Basic Structure)

<b>I. Total Revenue</b>
<b>I.1. Current Revenues</b> <ul style="list-style-type: none"> <li>I.1.1. Fiscal Revenue           <ul style="list-style-type: none"> <li>I.1.1.1. Taxes</li> <li>I.1.1.2. Fees</li> </ul> </li> <li>I.1.2. Intergovernmental Transfers</li> <li>I.1.3. Other Current Revenues           <ul style="list-style-type: none"> <li>I.1.3.1 Patrimonial</li> <li>I.1.3.2 Contributions for Municipal Improvements</li> <li>I.1.3.3 Municipal Services</li> </ul> </li> </ul>
<b>I.2. Capital Revenues</b> <ul style="list-style-type: none"> <li>I.2.1. Credit Operations</li> <li>I.2.2. Assets Sold</li> <li>I.2.3. Capital Transfers</li> <li>I.2.4 Others</li> </ul>
<b>II. Total Budgetary Expenditure</b>
<b>II.1. Current Expenditures</b> <ul style="list-style-type: none"> <li>II.1.1. Operating Costs           <ul style="list-style-type: none"> <li>II.1.1.1. Personnel</li> <li>II.1.1.2. Others</li> </ul> </li> <li>II.1.2. Current Transfers</li> <li>II.1.3. Other Current Expenditures</li> </ul>
<b>II.2. Capital Expenditures</b> <ul style="list-style-type: none"> <li>II.2.1. Investments</li> <li>II.2.2. Financial Investments</li> <li>II.2.3. Capital Transfers</li> </ul>

Source: IPEA

**Table A.2:** Categories of Governmental Expenditures

Category	Sub-category	Category	Sub-category
1. Legislative	legislative action external control	9. Social Provident Care	basic previdence estatutary previdence additional previdence special previdence
2. Judiciary	judiciary action defense of public interest in judiciary process	10. Health	basic care hospital and ambulatory care therapeutic and prophylactic care sanitary surveillance epidemiologic surveillance food and nutrition
3. Essential to Justice	defense of juridical order judicial and extra-judicial representation	11. Labour	workers' protection and benefits working relations employability programs
4. Administration	planning and budgeting general administration financial administration internal control supervision and inspection information technologies territorial planning human resources training revenue administration concessions administration mass media	12. Education	fundamental education secondary education professional education pre-school education adult education special education programs
5. National Defense	air security maritime security terrestrial security	13. Culture	historical and artistic heritage cultural diffusion
6. Public Security	police civil protection information and intelligence	14. Citizen Rights	social rehabilitation individual and collective rights assistance to indigenous groups
7. External Relation	diplomatic relations international cooperation		
8. Social Assistance	assistance for the elderly assistance for the disabled assistance for children and teenagers communitary assistance		

**Table A.3:** Categories of Governmental Expenditures (cont.)

Category	Sub-category	Category	Sub-category
15. Urbanism	urban infrastructure urban services urban collective transports	23. Trade and Services	trade promotion marketing external trade financial services tourism
16. Housing	rural housing urban housing	24. Communications	mail telecommunications
17. Sanitation	rural basic sanitation urban basic sanitation	25. Energy	maintenance electrical energy oil alcohol
18. Environmental Policy	environmental preservation environmental control rehabilitation of degraded areas water resources management meteorology	26. Transports	air transport terrestrial transport railroad transport water transport special transport
19. Science and Technology	scientific development technology and engineering scientific and technological diffusion	27. Sports and Leisure	competitive sport community sports leisure
20. Agriculture	vegetal production promotion animal production promotion vegetal sanitary care animal sanitary care supply rural expansion irrigation	28. Special Duties	refinancing internal debt refinancing external debt internal debt service external debt service transfers others
21. Agrarian Organization	agrarian reform colonization	Source: Decree no. 42/1999; Ministry of Planning	
22. Industry	industrial promotion industrial production mining industrial property inspection and quality		

**Table A.4:** Categories of Governmental Expenditures

category until 2002:	after 2002 splits into:
- Administration and Planning	4. Administration 19. Science and Technology 28. Special Duties
- Education and Culture	12. Education 13. Culture 27. Sports and Leisure
- Health and Sanitation	10. Health 17. Sanitation 18. Environmental Policy
- Assistance and Social Care	8. Social Assistance 9. Social Provident Care
- Public Security	5. National Defense 6. Public Security
- Judiciary	2. Judiciary 3. Essential to Justice

Source: Decree no. 42/1999; Ministry of Planning; Treasury

**Table A.5:** Infant Mortality by Brazilian Region

	1991	2000	% var.
North	44.0	33.0	-25
Northeast	72.9	52.3	-28
Southeast	33.6	24.1	-28
South	28.7	20.3	-29
Centre-West	33.3	24.0	-28
<b>Brazil</b>	<b>48.4</b>	<b>33.6</b>	<b>-30.6</b>

Source: IBGE and Simoes (2002)

## 2 Does Exposing Corruption on the Internet Affect Electoral Performance?

### 2.1 Introduction

The promotion of transparency in political affairs has become over the last few years a fundamental tool to combat political corruption and a requisite for good governance. Different countries have set up information dissemination programmes targeted to increase public scrutiny of the elected officials and, as result, decrease the scope for wrongdoing.<sup>31</sup> Better informed voters can more easily distinguish the “bad” from the “good” politicians and throw the former out at the time of elections. But to what extent can this relationship between increased information about corruption and greater accountability be observed in reality? Do informed voters effectively use their electoral power to “throw the rascals out” of office? This is the main question I will address in this paper - whether giving the voters reliable information about the politicians involvement in corrupt activities does have an impact on their voting decisions. On a first approach the answer seems to be unambiguously “yes”. But the many examples of convicted politicians consecutively elected to office, do make one wonder whether voters have become totally insensitive to corruption among the political class.<sup>32</sup> In practice, the fact that there are not many cases where we can find a significant amount of objective, politically unbiased information about political wrongdoing being disclosed to the electorate makes this question hard to test empirically. In this paper, I will take advantage of an information dissemination project conducted by the Brazilian non-governmental organization Transparéncia Brasil in order to address this question.

In July 2006 Transparéncia Brasil, which is dedicated to fighting political corruption in Brazil, released on its Internet page a list with all criminal records of the incumbent federal deputies (FDs henceforth) running for re-election in the upcoming congressional elections of October 1st. The list included all past convictions and pending lawsuits against this group of deputies, as long as they were related to some sort of wrongdoing

<sup>31</sup> Programs aimed at promoting transparency and government accountabiliy are in place, for instance, in Colombia (“Internet para la rendicion de las cuentas”), Argentina (“Programa Cristal”); South Korea (programme “Open”) and Philippines (programme TAG). In these programmes a variety of information related to local governments is published online for public knowledge and scrutiny.

<sup>32</sup> Obviously, there are different reasons, beyond information asymmetries, why someone may decide to cast her vote for a corrupt politician. She might be exchanging her vote for some personal economic advantage in a patron-client type of relationship, or might perceive corruption as not only inherent but essential and generalized in the political system (the “oil that greases the machine”) or she might simply take corruption as a candidate characteristic to be weighed up along with many (more positive) others. In this paper, I am not going to empirically test these alternatives. Instead I am going to focus particularly on the impact of a information dissemination project of politicians’ corruption on their electoral results.

in the exercise of their public functions.<sup>33</sup>

The timing of this information dissemination project, which was launched under the name “Projeto Excelências” (this is “Project Excellencies”, following the way federal deputies address each other in Congress), was not random. Its release coincided with a period when political corruption was a particularly salient issue for the Brazilian electorate following a succession of corruption scandals involving several top government officials and members of the federal Congress. As a result, “Projeto Excelências” soon became very popular among the Brazilian media and electorate: during the two-month period prior to the elections alone, the project’s website attracted a record number of more than 2 million visits.

My objective in this paper is to identify the effect of the information revelation about the incumbents’ criminal records brought by “Projeto Excelências” on their electoral performance in October 2006. Several features of this project are advantageous for my empirical analysis. First, its focus on the federal Chamber of Deputies allows me not only to have access to a “large enough” sample of over 400 deputies from different states and parties, but also to a considerable amount of deputy level information, since the federal executive is one of the best documented political bodies in the country. This allows me to control for several candidate-level variables, such as state, political party, seniority in Congress or campaign expenditures, that might be correlated both with the candidate’s electoral performance and with her probability of being listed with criminal charges by Transparência Brasil.<sup>34</sup>

Second, because Brazilian congressmen typically have long political careers (in 2006 more than 60% of the candidates to re-election were running for at least their third consecutive term) I am able to track the electoral performance of several candidates for more than two Congressional elections. This gives me the possibility to exploit both between and within candidate variation in the existence of criminal charges for identification of their impact on the electoral outcomes. It also allows me to test for eventual pre-existing trends in the candidates’ electoral performance. This way I guarantee that I will not wrongly associate with the Transparência Brasil’s project any pre-2006 differential trends in electoral results between criminally charged and non-charged candidates. Finally, the fact that the project covered all incumbent candidates, without discriminating by region or political party, making use of an independent platform - the Internet - that can be accessed throughout the country, is also beneficial to my analysis. It alleviates concerns related to the non-randomness of the information disclosed that usually affect this type of empirical studies.<sup>35</sup>

<sup>33</sup> A few exceptional crimes were also listed for their severity, such as the crimes of tax evasion, homicide, rape, pedophilia and forced labour.

<sup>34</sup> The word “charge” is being used in a broad sense here. It covers both the existence of former convictions or pending lawsuits against the deputy. In the latter case, it might refer either to a formal criminal investigation or to an indictment against the candidate in the Supreme Federal Court.

<sup>35</sup> Despite the unbiasedness of the Transparência Brasil work - as the content published effectively reflected all the existing judicial records involving the incumbent candidates - I can not rule out that the list of criminally accused candidates obtained is clean of any sort of non-randomness in the way the

My findings show that, contrary to the commonly shared idea that corrupt politicians are unduly tolerated in Brazil,<sup>36</sup> the Brazilian voters do not seem to be indifferent to information about corruption involving politicians. The incumbent politicians who were listed with criminal charges in “Projeto Excelências” in 2006 did register, on average, approximately a 24% significantly lower chance of re-election and did observe a statistically significant drop in their vote shares of around 0.3 percentage points (roughly 15% of the sample mean incumbents’ vote share of 2%) after their criminal record was revealed as compared to their fellow deputies with a “clean” criminal record. Moreover, and very important, I also show that the observed results do not arise as a consequence of a differentiated trend between these two groups of politicians. By analysing the electoral performance of the incumbents in previous electoral contests (1998 and 2002) I observe that there were no statistically significant differences between the electoral performance of the candidates listed with criminal charges under “Projeto Excelências” and that of their peers with a clean criminal record. This is an encouraging result, particularly when a closer look at the criminal records listed by Transparência Brasil reveals that many of the candidates’ charges were in fact previous to 2002. This suggests that the Transparência Brasil anti-corruption campaign and information dissemination project allowed voters to identify and punish, in the 2006 elections, a group of candidates that, despite an historical record of criminal offences, had managed to survive previous elections unscathed.

These are important findings - they show that voters do value and make use of information that allows them to better distinguish the “crooks” from the law-abiding politicians. In this sense, greater access to information does seem to have enhanced electoral accountability. Obviously, it has to be stressed that the effectiveness of “Projeto Excelências” (or of any other information project of similar nature) in throwing corrupt politicians out of office is conditioned by a fundamental element of the electoral race: the perceived quality of the challengers in the election. Except for a few selected cases<sup>37</sup>, the Transparência Brasil project did not provide any information about the criminal record of the 4,943 challengers standing for election in October 2006. However, the perceived quality of these challengers vis-à-vis that of the incumbents is an important determinant of the latter’s electoral performance and, therefore, of the effectiveness of the programme under analysis. In particular, the more voters perceive the challengers as (at least) as corrupt as the incumbents “black-listed” in “Projeto Excelências”, the less effective the project will be in throwing the latter out of office. This should be bear in mind when interpreting the project’s estimated effects in the next sections.

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lawsuits were instituted and charges were made across different regional jurisdictions and/or electoral parties or politicians. This type of bias, if existent, is not going to be addressed in this paper as it is out of the scope of my empirical question.

<sup>36</sup>An example of this tolerance for “less honest” politicians in Brazil is a well known popular saying, regarding politicians, that goes, “he steals but he makes things!”, or “Ele rouba mas faz!” in Portuguese (as striking as it may seem this was even used as the political slogan for the São Paulo governor Adhemar Barros between 1950-60). It shows that corruption was seen as a widespread, tolerated phenomenon across politicians.

<sup>37</sup>A few famous challengers with a known record of crimes against the public administration were also listed in “Projeto Excelências”.

The results in this paper also underline the powerful role of the Internet in the diffusion of information. Different from the information transmitted by radio and TV broadcasters or available from the printed media, the content published on the Internet can reach a very vast audience within a short period of time at a very little cost. The Internet is an (almost) “free” platform that virtually everyone can access and can use for the exchange and diffusion of information. Because the Internet users do not have to choose the content they post in order to please their sponsors or guarantee a minimum amount of sales, projects such as the one by Transparéncia Brasil can additionally benefit from far more independence than the ones originating from the conventional media.

The results in this paper are in line with the ones found by Peters and Welch (1980) and Chang and Golden (2004), who assess the electoral impact of charges of corruption on accused political candidates respectively for the United States and Italy. They find that although re-election rates remained considerably high among the criminally charged candidates, these candidates experienced a significant loss of between 6 and 10 percent in their vote share. Although the fundamental empirical question these studies aim to answer is the same I address in this paper, there is a difference in the setting and approach used. While I focus on the organized and timed effort by one institution, Transparéncia Brasil, and on one specific means of communication, the Internet, in making that information accessible to the Brazilian electorate, they rather look at the existence of criminal charges (whose existence they themselves investigate) as one among many factors that characterize the politician and may impact on her electoral success, without addressing how the existence of these charges gets to the knowledge of the voters.

My study also contributes to the literature that examines the impact of information dissemination mechanisms, and of the media in general, on enhancing political accountability and improving the quality of government. Brunetti and Weder (2003), using a large cross-section of countries as well as panel data find evidence that a free, independent press is one of the most important controls against bureaucratic corruption. Besley, Pande and Rao (2005) on a study based on household data from India show that improved information flows at village level reduce politician opportunism and improve resource allocation. Besley and Burgess (2002) and Strömberg (2004) show, using data from India and the US, respectively, that governments are on average more responsive to population needs in regions with greater access to information through newspapers or radio stations. Snyder and Strömberg (2008) find evidence that American political districts with lower press coverage have less active Congressmen and receive significantly less money from the federal government, and that their voters are less likely to recall and rate their representatives. Closer to the focus of my study on political corruption and also applied to Brazil, Ferraz and Finan (2007) look at a municipality anti-corruption audit program in Brazilian municipalities and estimate the impact of the release of the audit results on the electoral outcomes. Based on the audit results they are able to construct an objective measure of corruption and exploit, for identification, the random timing of information disclosure across municipalities. Their estimations indicate that

the pre-electoral release of the audit results reduced the probability of re-election by, on average, 20% for the mayors found to be involved in fraudulent activities and that this effect increased with the number of radio broadcasters in the municipality, which underlines the relevance of information dissemination in strengthening political accountability. Likewise, my paper also discusses a specific and powerful way through which media can be used to promote accountability and reduce corruption. I show that a free and increasingly accessible platform such the Internet can disseminate in a fast and almost costless way information which the voters find relevant when exerting their electoral power. To my knowledge, this is one of the first works that studies the electoral impact of an Internet based project aimed at curbing political corruption. Finally, this work is also complementary to the vast literature that analyses the way media exposure of candidates shapes their electoral outcomes, such as Ansolabehere, Snowberg and Snyder (2006) and Levy and Squire (2000) who study the relationship between political competition and TV coverage in the US elections, or Bergan, Gerber and Karlan (2009), who analyse the effect of newspapers on voting behavior and political opinions. Different from these, however, my work sets the focus on a new but increasingly relevant medium - the Internet - and explores its potential in shaping electoral outcomes by serving as a platform for an information dissemination campaign about the political candidates. As a result, this paper also contributes to the literature that specifically focus on the Internet's impact on elections. This is still a small field of the literature and it has been so far very much based on evidence from the United States and Europe and focused on the Internet's impact on political campaigning (see for example Gibson and Ward, 2001; Bimber and Davis, 2003; Kluver et al, 2007) and political participation (namely through "e-voting", see for instance Gibson, 2001 or Treschel et al, 2007). McNeal and Tolbert (2001) and Lusoli (2005) also look at the Internet's impact on promoting voting turnout and political engagement through the dissemination of information about candidates and political parties. To the best of my knowledge, however, the work in this chapter is one of the first to specifically look at the link between Internet, corruption and electoral results in the context of a developing country.

The remaining part of the paper is organised as follows. In the next section I provide an overview of the Brazilian context at the time Transparência Brasil's project was released, give details of "Projeto Excelências", the type of criminal charges that were found among incumbents, and describe the data used in the analysis. Section 2.3 presents my empirical strategy and section 2.4 a discussion of the results found and robustness checks made. Section 2.5 concludes.

## 2.2 Context and Data

### 2.2.1 Internet Exposure of Politicians: the “Projeto Excelências” by Transparéncia Brasil

The second half of President Lula da Silva’s first term, between 2005 and 2006, was plagued by an unprecedented number of corruption scandals that involved not only many top cabinet members but also several federal deputies from across the political spectrum. The severity of the situation forced some of these politicians to, voluntarily or involuntarily, withdraw (at least temporarily) from political life. However, many of the politicians involved in the scandals suffered no immediate political sanctions and emerged as candidates for re-election in the federal elections of 2006. In Brazil, a politician is considered eligible even if she is under criminal investigation and facing pending lawsuits as long as her right to appeal against court decisions has not been exhausted. This explains why, by October 2006, 165 out of the 467 incumbent federal deputies standing for re-election had criminal charges pending against them.<sup>38</sup>

Not surprisingly, as voters grew increasingly distrustful of the quality of its federal representatives<sup>39</sup> and the approval ratings of the federal Congress dropped to its lowest levels in over a decade<sup>40</sup>, political corruption became one of the most salient issues in the electoral campaign. This context motivated the development of “Projeto Excelências” by the anti-corruption NGO Transparéncia Brasil. According to this NGO’s founders the project responded to a demand from the Brazilian electorate, who amidst countless accusations, newspaper covers, TV and radio reports of the scandals looked for objective and clear information in order to distinguish the crooks from the law-abiding candidates.

The Internet was the medium of choice for the information dissemination project since, as explained by Transparéncia Brasil’s founder and board member Neissan Monadjem “it is cheap to maintain, it is permanent and accessible [throughout the country]” (Global Forum on Fighting Corruption and Safeguarding Integrity, April 2007).

“Projeto Excelências” went online in July 2006 and rapidly became a success on the Internet, attracting over 2 million visitors during the 3 month-period before election day. Its purpose was to provide the Brazilian voter with all the available information about the incumbent candidates seeking re-election to the Chamber of Deputies. The candidate level information was obtained through research and compilation work done by Transparéncia Brasil of existing data originally spread throughout several different federal and state institutions, some of which are difficult to access by the common citizen. In effect, none of the information presented in “Projeto Excelências” was new or private. The merit of the project was to compile all the different pieces of existing information and

<sup>38</sup>In these figures I also include the 23 FDs in power that entered the Congress as stand-ins between 2003 and 2006.

<sup>39</sup>In a survey conducted by the best-selling weekly news magazine “Veja” in 2006, only 3% of the surveyees agreed that the country’s congressmen effectively represent and defend the [Brazilian] society’s needs and interests.

<sup>40</sup>Datafolha public opinion surveys in 2006 showed that the Brazilian Congress reached in 2005-2006 the lowest rate of public approval in 12 years.

make them easily available, through a single website, in order to facilitate the comparison of different candidates.

Due to capacity and time constraints the project, as of July 2006, was initially restricted to the 467 incumbent federal deputies standing for re-election together with a few “famous” challengers with well known political careers (these included, for instance, former members of the cabinet, mayors of large cities and senators). Since then it has been enlarged to the whole Congress, including all the 513 federal deputies in power and senators, members of the 27 state assemblies as well as of the municipal assemblies of state capitals.

Its most innovative and attention grabbing piece of information was the listing of all the federal deputies who had either been criminally convicted in the past or had any pending inquiry or indictment against them at the time the information was published. This resulted in a list of 165 federal deputies with criminal charges among the 467 that were standing for re-election (see Table 2.2). Furthermore, the website also allowed the user to access the federal deputy individual page where further details on each one of the criminal lawsuits listed could be obtained (as long as they were public knowledge, since serving deputies can request confidentiality in the legal proceedings by the Supreme Federal Court). These included a summary description of the offence, the lawsuit’s legal details such as number and institution in charge, its opening date and current legal status and, for most cases, a weblink to the existing original judicial data in the responsible court’s website. Despite the wealth of the legal information available, its technical language made the learning and full understanding of each case’s particulars considerably difficult. As a result, the information from “Projeto Excelências” that was subsequently replicated and that circulated in the Internet consisted of the list of incriminated federal deputies, by party and state of election, with a minimal description of the respective charge(s).

“Projeto Excelências” also provided other candidate level information beyond the eventual existence and description of criminal charges. At the time of the elections, in October 2006, the website also listed the federal deputies that were part of religious or “ruralist” organizations, professional unions or of the police service, as well as the owners of radio/TV licenses and private schools, as these represent important lobby groups in the Congress. It was also possible for the Internet user to access detailed biographical information (such as age, date and locality of birth, education and former professional activities), details on parliamentary activity (attendance record), expenses claimed,<sup>41</sup> campaign accounts (including campaign contributors and expenditures), asset declarations (compulsory for every political candidate since 2002), and press coverage during the two years up to the election.<sup>42</sup> This last is the result of a parallel project

<sup>41</sup> Each FD is entitled to claim R\$180,000/year (approximately GBP 40,000 at the average exchange rate in 2006) in expenses considered relevant for the execution of their own mandates. The main categories of expenses claimed include travelling (other than the commuting between their own states and Brasilia, which is separately paid by the Congress), fuel, consulting services, advertising and promotion.

<sup>42</sup> Since 2006 the project enlarged not only the range of politicians covered, but also the scope of

by Transparência Brasil called “Deu no Jornal” (“In the News”) which consists of an electronic database of news about political corruption published by all main newspapers and magazines of national coverage since 2004. Through keyword-based searches in this database it is possible to access articles published in over 70 newspapers and magazines from across the country for each one of the 467 incumbents. Finally, the website also publishes its own access statistics, both globally (total number of visits to the website) and also by politician’s page (the politicians’ individual pages are accessible from a drop-down menu in the home page). These statistics show that there is a considerable variance across candidates in the number of pageviews received, as can be seen from the summary statistics in Table 2.2. Unfortunately, Transparência Brasil did not keep a record of the access statistics by candidate as of 1st October 2006. Thus, the statistics provided in Table 2.2 refer to the total number of visits accumulated up to the date of my collection (February 2009).

**Internet in Brazil** The Internet offers an (almost) free and uncensored space to express views, debate ideas and release information to an ever increasing audience.

In Brazil Internet usage has increased at a fast speed over the last decade. According to the International Telecommunication Union (ITU), the United Nations agency for information and communication technology, between 2000 and 2006 the amount of Internet users in Brazil rose from 5 to over 53 million people, which corresponded to a shift in Internet usage rates from 2.87 to 28.18 users per 100 inhabitants. For comparison, during the same period the world Internet usage rates increased from 6.84 to 17.34%.

Despite being still far from the usage and access levels registered by some “Internet super-powers” such as Canada, USA (both with usage rates above 70% in 2006) or northern Europe (Sweden, Denmark and Iceland had usage rates above 80% in 2006), Brazil had already in 2006 a considerably high rate of Internet usage for its development level. With 53 million users Brazil had the world’s fifth largest population of Internet users in 2006, and its Internet usage rate (28.18%) was the second highest in South America, after Chile, and comparable to that of Israel or Greece.

As a result of the economic growth registered over the last years as well as of several government initiatives to connect the population to the Internet, access and Internet usage rates have kept increasing at a fast pace, faring at 37.52% of the population in 2008 (this is over 70 million users). Moreover, the effective use of the Internet in Brazil, measured by the number of hours the average citizen spends online, is also one of the world’s largest. Recent data published by the IWS (Internet World Stats) reveals that, as of May 2008, Brazilians were the people who spent the largest amount of time surfing the Internet at home - more exactly, an average of 23 hours and 48 minutes per month (Germans were the runner-ups with an average of 20 hours and 11 minutes).

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information covered by including details of the parliamentary activity of every FD, like projects proposed and voting patterns in Congress and, at municipal level, details on public tenders, such as the description of projects and respective winning bids.

The use of the Internet as a vehicle for information dissemination and social mobilization campaigns is not a novelty in Brazil. Freedom House reports that the Internet has been widely used in Brazil for this purpose and as a vehicle for protesting against government policies, citing the aids campaigns, gay rights or open and free software movements as examples (Freedom on the Net Report, Freedom House, 2008). As mentioned above, the Transparéncia Brasil initiative was very effective in mobilizing a large audience in a short period of time. Within less than 3 months its “Projeto Excelências” had had more than 2 million visits and had counted approximately 7 million individual pageviews (Transparéncia Brasil and Revista Veja). It attracted the attention of other Internet based means of information and became a popular topic in blogs and Internet forums interested in debating politics and transparency. But, more important, the project also received extensive coverage by the conventional media channels. Newspapers,<sup>43</sup> TV and, especially, the radio, which is the most diffused source of information in Brazil, took a very active role in emphasizing the project’s innovative role in allowing the Brazilian voters to distinguish the “corrupt” from the law-abiding candidates. This was fundamental to propel the project’s reach across different regions of the country and socioeconomic groups.<sup>44</sup>

**Criminal Charges** According to the data released by Transparéncia Brasil, at the time of the 2006 general elections 165 out of the 467 federal deputies standing for re-election had been convicted or were being investigated/accused of some sort of crime committed either as federal deputies or in other posts previously taken.

The Transparéncia Brasil project focused on crimes committed by the federal deputies while in the exercise of their political functions. Hence, it deliberately excluded cases of a purely private nature, such as post-divorce disputes, as well as crimes against honour since politicians are very often a target for defamation-related accusations. As a result, the gross majority of the crimes listed by “Projeto Excelências” fell under the category of crimes against the public administration. Roughly 75% of the 165 incumbents had at least one charge either for managerial wrongdoing, abuse of office, embezzlement, fraudulent bidding or public procurement, or active or passive corruption, while 12% of them had charges for electoral crimes such as vote buying or campaign irregularities. In total, at the time of the elections, in October 2006, 145 of the incumbents standing for

<sup>43</sup> According to Transparéncia Brasil approximately 100 newspaper articles dedicated to the project were published between the 1st July and 30th September of 2006.

<sup>44</sup> As expected in a country with as many inequalities as Brazil, access to the internet is not equally distributed across the different socio-economic groups. According to a UN study in 2007, Brazil had the most unequal access to the internet across income groups among 14 countries from the LAC region. Its internet usage rate, in 2006, varied between a rate of 52%, among the richest, and 1.7% among the poorest of its population. There were also, at the time, some regional inequalities due to lack of infrastructure, particularly in rural areas. Government investment in networks and programmes for digital inclusion are paramount to overcome these inequalities. Among other projects, ongoing federal programmes aim at giving free access to the internet to all primary and high school students registered in public schools located in urban areas until the end of 2010.

A list with all government programmes can be found in the following address (in Portuguese): <http://www.inclusaodigital.gov.br/outrous-programas>

re-election had charges for crimes directly related to their political life.

A few exceptional private crimes, however, were taken into account and listed by Transparéncia Brasil due to their severity. These included crimes of tax evasion, crimes against the environment or public health, homicide, rape or pedophilia, and crimes of enslavement (i.e. forced labour, which is still common in some regions of Brazil). In total, according to Transparéncia Brasil 49 of the incumbents standing for re-election in 2006 had charges for crimes unrelated to their political functions. 28 out of these 49 deputies accumulated charges both for crimes of public *and* private nature at the same date. Within the private sphere the most common charges related to fiscal crimes, followed by crimes against the environment and/or public health and violations of the employment law. In addition to these, a few cases (9 deputies in total) were being investigated for or charged with “offences against the person”, which included cases of homicide, rape and criminally inflicted injuries.

A fraction of these federal deputies (at least 20%) were subject to more than one charge.<sup>45</sup> Because the legal system gives politicians, who usually can afford the best lawyers, many opportunities to extend and delay the legal proceedings, some of the lawsuits listed have been transiting in the judicial system for over a decade.

Despite the richness of the information available in the Transparéncia Brasil’s website with respect to the federal deputies’ criminal charges, it is unlikely that the nuances in legal status or history across the different charges listed resulted in a differentiated appraisal by the voters. This is because most of the information was available in technical juridical language, with which the average user was unlikely to be familiar. As a result, the information from the project that was mostly retained and was subsequently diffused on the Internet and on the traditional media consisted of a list of federal deputies’ names, with respective party and state of election, that were being criminally investigated, accompanied by a minimal classification of the type of charge.<sup>46</sup>

For estimation purposes this implies that throughout my analysis I will mainly focus on electoral impact of the existence (or not) of criminal charges without differentiating by the type of crime. In fact, besides the difficulties associated with classifying the crimes in the correct categories given the quality of the information available, the relatively small number of observations per category would render such a disaggregation exercise inconclusive for estimation purposes. However, it is possible to make a more general

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<sup>45</sup>I do not know with precision the fraction of FDs accused of more than one crime because the detail of information available for each lawsuit is variable, depending on its legal stage or the institution in charge. It is often the case that the same criminal incident generates more than one type of criminal charge, leading to several parallel lawsuits. For instance, many of the FDs involved in the “Escândalo dos Sangueiros” (a major corruption scandal in 2006) were simultaneously accused of embezzlement, active/passive corruption and gang formation.

On the other hand, it also happens that the same criminal offence appears listed more than once, under different legal documents, by the Transparéncia website depending on the legal status of the process and the institution in charge. In these cases it is not always possible to distinguish the new from old, already existing lawsuits.

<sup>46</sup>Even today a simple internet search using key words such as “Projeto Excelências” + “Deputados” + “eleições 2006” (“Project Excellencies” + “Deputies” + “elections 2006”) can produce a list of names, which usually come under the title of “Em quem não votar”, this is, “Who not to vote for”.

distinction among all the charges listed by Transparéncia Brasil based on whether they have resulted for offences related to the deputies' public or private life (as described above). Thus, in my empirical analysis I will also take this distinction into account in order to investigate whether voters perceive and treat these two types of crimes differently.

### 2.2.2 Other Data Sources

Three other data sources, besides Transparéncia Brasil, were used in this paper. The electoral outcomes for all candidates come from the Tribunal Superior Eleitoral (TSE - the Brazilian electoral commission), which provided electoral results at state level for all electoral contests since 1998. In addition to the electoral results, the TSE also provides data on the candidates' profile including gender, professional occupation, eligibility, party affiliation, campaign contributions and expenditures for the three last congressional elections,<sup>47</sup> as well as further electoral statistics such as the size of the electorate, turnout rate and total of valid votes for each electoral contest. The candidate information was matched across electoral contests in order to identify the incumbents running for re-election in each period and to construct measures of electoral performance such as the vote share within the state of election or the percentage change in vote share between contests, which will be used as outcome variables in my empirical analysis.

The Brazilian Chamber of Deputies is another source of information for current and former federal deputies. Its database, available online, contains not only basic biographical data for each federal deputy (date of birth, origin, education and professional career), but also several details of their political careers such as electoral status (whether directly elected or in power as a stand-in deputy), licenses taken, current and former party affiliations, posts or commission memberships in Congress or any special distinction or activity relevant to their political life. While the data from the electoral commission illustrates the outcome of each electoral contest, the information available from the Chamber of Deputies is continuously updated in order to illustrate the current profile of each federal deputy and of the whole chamber. Through the Chamber of Deputies database it is possible to track all the movements that occurred in the federal deputies political life, such as changes in party affiliation (frequent in the Brazilian Congress) or state of election, licenses taken as well as resignations or sackings. Given that there are 513 deputies in the chamber there is also a considerable seat turnover in the Chamber in each legislative period, as some elected federal deputies take leave of absence or resign and have to be substituted by stand-in deputies.<sup>48</sup> It is through the Chamber of Deputies database that I can clearly identify the federal deputies effectively in office in each period.

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<sup>47</sup> Political campaign accounts are only available since 2002, though.

<sup>48</sup> These stand-in deputies are chosen according to the party's electoral result ranking in each state.

### 2.2.3 Descriptive Statistics

Tables 2.1 and 2.2 provide basic descriptive statistics of the main variables used in this paper. Table 2.1 reports basic statistics on the turnout, candidates and re-election rates for the last Congressional elections. It shows that the re-election rate of the incumbent FDs was 66% and 60%, respectively in 2002 and 2006, which is suggestive of the existence of an incumbent advantage in the Congressional elections in Brazil. It can also be seen that the turnout rates remained high<sup>49</sup> throughout the period in analysis and registered a slightly increased from 1998 to 2006.

Table 2.2 presents data on the profile of the 467 incumbents standing for re-election as of October 2006, for the whole group and by criminal status. I observe that besides being disproportionately male, the majority of the incumbents already had a considerable career in Congress since more than 60% of them were running for, at least, their 3rd consecutive term in office. Over one-third of these incumbents had lawsuits pending against them and approximately 12% were direct owners of TV and/or radio concessions. The latter figure, however, underestimates the influence of the Brazilian federal deputies on the control of media outlets throughout the country since it is a known fact that several other licenses are owned by their relatives or associates.

For many of the characteristics summarized in Table 2.2 there is a considerable variance across the federal deputies. For instance, the declared campaign expenditures ranged from a few Brazilian Reais to a maximum above 2.7 million Reais (approximately USD 1.25 million) as of 2006. The media exposure of the candidates, measured by the number of times the federal deputy's name was mentioned in newspaper articles about corruption between 2004 and the election date, also varied significantly: two-thirds of the candidates had their names mentioned in newspaper articles less than 100 times during this period, while approximately 5% of the candidates went above the barrier of 1,000 articles. The number of visits each candidate received on her page in the Transparéncia Brasil's website ranged from zero to over 100 thousand pageviews. Finally, the incumbent federal deputy's state vote-share in 2006 fared an average of 2.2% among the 476 incumbents (and 2.8% among the 282 of them who were effectively elected). The relatively low average vote-share among the elected federal deputies, as well as its high variance, is in part a result of the Brazilian electoral system. The Brazilian Congressional elections are based on an open list proportional representation system. In this system each state is allocated a number of seats in the Chamber of Deputies in proportion to its population.<sup>50</sup> Within the state allocation each party's quota is proportional to its total vote share in that same state. The party's seats are then distributed across its different candidates by descending order of number of votes. As a result, if a given candidate in a party performs particularly well at the polls she might be able to bring many seats to her party total

<sup>49</sup>This is not surprising given that voting is compulsory for every literate Brazilian citizen aged between 18 and 70 years old.

<sup>50</sup>This proportionality rule is not perfect. The number of seats one state can get in the Chamber is bounded by minimum and maximum values.

quota and, with that, allow fellow party candidates with tiny vote-shares to be elected.<sup>51</sup>

Comparing incumbent federal deputies with and without criminal charges, in the same table, it is possible to see that most of the variables are well-balanced across the two groups. The main exceptions are the seniority in the Chamber of Deputies and the number of references in the printed media, both significantly greater among the accused candidates, and the rate of affiliation to the Workers' Party (PT), the re-election rate and the change in vote-share between 2006 and 2002, which are significantly lower for this same group.

## 2.3 Empirical Method and Results

### 2.3.1 Estimation Strategy

At the time of its release the Transparéncia Brasil “Projeto Excelências” focused on the incumbent federal deputies standing for re-election in October 2006. Hence, the analysis in this paper is performed for this subsample of 467 candidates out of the 4,943 who ran for the Chamber of Deputies in 2006. This subsample includes candidates from all the 26 federal states and main political parties in Brazil.

My aim is to identify the impact of the Internet based information campaign launched by Transparéncia Brasil in July 2006 on the electoral results of that same year. For each candidate in my working sample I observe whether or not she was listed with criminal charges in 2006, as well as other political and biographical data, such as her party and state of election, age or education. With respect to the candidates' electoral results, the dependent variable, I observe whether or not the candidate was reelected into office and her respective vote-share (within her state) in 2006. This data allows me to exploit between candidate variation in the existence of criminal charges to estimate its effects on both the candidates' probability of re-election and state vote-share in 2006 controlling for several candidate-level characteristics that might also have an impact on her electoral performance.

Despite the attractiveness of focusing on the probability of re-election as the main outcome of interest, it is worth mentioning that in the specific setting of my analysis the candidate's vote-share is a more informative dependent variable of the effects of the Transparéncia Brasil's project. This is because for the reasons explained above the electoral system used at the Brazilian federal elections makes the probability of (re-)election depend not only on the candidate's individual performance but also on her party's overall performance. By focusing on the candidate vote-share instead, I get a cleaner measure of the individual electoral performance and of direct effects of the Transparéncia Brasil's information campaign on her results.

By construction, all the 467 candidates in my sample stood for election to the Chamber of Deputies both in 2006 and in 2002. A subset of 288 candidates had also stood

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<sup>51</sup>This explains why approximately 25% of the incumbents standing for re-election in October 2006 had got into office in 2002 with a state vote-share below 1.5%.

for election in 1998. Thus, by putting together the electoral results of the last three contests I am able to track the electoral performance of every candidate for at least two consecutive periods. This results in a working sample of 1222 observations of vote-share at candidate-year level which allows me to exploit not only between but also within candidate variation in the existence of criminal charges in order to estimate its impact on the candidates' vote-share. More details on the empirical strategy used and on the estimates obtained are provided below.

### 2.3.2 Specification and Results

**Cross-Section Specification** I start by estimating the effect of the Transparéncia Brasil's project on the re-election probabilities of the incumbents using the following linear probability model for the cross-section of 467 candidates in 2006:

$$R_i = \alpha + \beta C_i + X_i \delta + \mu_i \quad (2.1)$$

where  $R_i$  is a dummy variable that takes the value 1 if politician  $i$  was reelected in 2006 and 0 otherwise,  $C_i$  is an indicator of whether or not federal deputy  $i$  was listed in the Transparéncia Brasil's website with criminal charges in that same year and  $X_i$  is a vector of deputy characteristics that might affect the candidates' electoral outcomes, including the state and party of election (which allow me to control for any state and/or party shocks that affect the incumbents' electoral performance), her gender, the number of terms and age as of 2006, an indicator variable for whether she changed party with respect to the previous election (party change seems to be a usual strategy among Brazilian politicians in Brazil in order to increase their re-election probabilities, particularly after corruption allegations), media ownership status, the amount of press coverage received between 2004 and the election date (measured by the number of name citations in all main newspapers across the country), the state vote share in the 2002 election, and the amount of electoral campaign contributions available. The last variable is a known determinant of a political campaign success. In my specific setting it is a particularly interesting control variable as some of the criminally accused candidates might have made use of more aggressive electoral campaigns to compensate for the potential negative impact of "Projeto Excelências" on their electoral performance.<sup>52</sup>

Estimation of equation 2.1 relies on data from 2006 using the variation found across the 467 candidates and provides a first test on the project's impact.

Table 2.3 reports regression results from estimating equation 2.1 on the cross-section of 467 incumbent candidates. The dependent variable is the probability of re-election in the 2006 elections and I estimate the impact of the project (through the "criminal

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<sup>52</sup> A note of warning remains since the data available is, of course, based on the candidates' "declared" contributions. The existence of slush funds for electoral campaigns is a well known fact of Brazilian politics and it would not be surprising if, for obvious reasons, these were larger among the criminally accused candidates. This being the case results in an underestimation of the coefficient associated with the existence of criminal charges.

charges" dummy) by adding different controls to the regression in columns 1 to 3.

Column 1 shows that, unconditionally, criminally accused candidates are associated with a lower probability of re-election in 2006. The estimated effect size is -0.25 and statistically significant at 0.1% level. Columns 2 and 3 show that this result is robust to the inclusion of several candidate-level controls, such as party and state of election (column 2), number of terms, age, gender, campaign contributions, ownership of media concession and newspaper coverage, as well as the candidate's vote-share in the previous election, in 2002 (column 3). Some of these variables also seem to have a significant impact on the re-election probability. The amount of campaign contributions and the vote-share in 2002, in particular, are both associated with significantly higher re-election rates. The magnitude of these variables' estimated effects seems however smaller when compared to the one associated with the existence of criminal charges. For instance, according to the estimation results, everything else being constant, the impact of the existence of criminal charges on the probability of re-election is comparable to a decrease in the candidate's campaign contributions by 2.4 standard deviations (this is, approximately BRL 1 million or USD 450 thousand in 2006 prices).

For the reasons presented above, I also estimate equation 2.1 using as a dependent variable the candidate's state vote-share in 2006 and the candidate's change in state-vote share between 2002 and 2006.

Tables 2.4 and 2.5 present the estimate results for the effect of "Projeto Excelências" on these two measures of electoral performance: the candidates vote-share in their state of election and the difference in vote-share between 2002 and 2006. As explained above, the vote share offers a cleaner measure of the candidate's individual performance since the candidate's re-election probability can be very much determined by her political party's overall performance. Table 2.4 shows that, once state and political party are controlled for, the existence of criminal charges is associated with a significantly lower vote share by 0.33 percentage points, which represents approximately 15% of the candidates sample mean vote-share in 2006 (2.2%). At the same time, the estimation results suggest that the candidate's age is significantly and negatively associated with her vote-share in 2006, while larger electoral campaigns are associated with a significantly larger vote-share. The size of the electoral campaign has, as expected, a strong estimated impact on the candidate's electoral performance, as measured by her vote-share in the election state: a 1 standard deviation in the amount of campaign contributions (approximately BRL 420 thousand in 2006 prices) is estimated to increase the candidate's vote share by 0.43 percentage points, which is almost as much as 20% of the sample mean vote-share in 2006. These results suggest that, everything else being constant, the effect of the existence of criminal charges on the candidate's vote-share is comparable to a drop in her campaign size by approximately 325 thousand Brazilian Reais, which is more than 75% of the latter variable sample mean in 2006. Like in Table 2.3 for the re-election probability, the candidate's gender, experience in Congress, media ownership status or the amount of newspaper coverage do not seem to have any significant impact on explaining the

differences in vote-share across candidates in 2006 once the candidate's age, criminal status and the size of her electoral campaign (plus electoral state and political party) are taken into account. The lack of a significant impact of the candidate's newspaper coverage on her electoral results is not surprising. This is because the candidates' coverage and consequent visibility in the traditional media does not necessarily translate into a better (or worse) electoral performance as the coverage can be either positive or negative.

Finally, Table 2.5 presents the estimation results for equation 2.1 using the change in the candidate's vote-share between 2002 and 2006 as dependent variable. Different from estimating the impact of the Transparéncia Brasil's project on the candidate's re-election probability or vote-share, the focus on the candidate's change in vote-share has the advantage of allowing me to implicitly control for any candidate time invariant characteristics between the 2002 and the 2006 elections. This provides a further test to my results since there might be candidate specific time invariant factors driving both the likelihood of criminal charges and her electoral performance. The coefficient associated with the criminal charges, in columns 1 to 3, is again systematically statistically significant and negative. Its estimated size, conditional on several candidate's characteristics (in column 3), is -0.286, which means that the change in vote-share between 2002 and 2006 is almost 0.3 percentage points lower for the candidates listed with criminal charges by Transparéncia Brasil. This represents more than 60% of the difference in the vote-share sample mean found between these two groups of incumbents in 2006 (-0.46 percentage points). The coefficients associated with the remaining control variables in this specification are similar to the ones found for the models in Table 2.3 and 2.4. The candidate's age is negatively associated with her electoral performance whereas larger electoral campaigns are linked to significantly better results at the polls. On the other hand, both the ownership of a media license or the amount of press coverage received by the candidate have no statistical significant impact on any of the outcome variables considered.

**Panel Data Specification** The cross-sectional analysis so far is not free of concerns. As mentioned above, by estimating the project's impact out of the variation in the existence of criminal charges and in the candidates electoral results found across the 467 incumbents in 2006, I am inevitably leaving out several candidate characteristics that are determinant for her electoral performance either because there is no data available or because those characteristics are actually impossible to quantify (e.g. political charisma). As long as these "ignored" explanatory variables are also somehow correlated with the candidate's criminal status as presented by Projeto Excelências in 2006, I will end up with a biased estimation of the latter variable's impact on the candidates' electoral performance. Using the change in candidate share between 2002 and 2006 as dependent variable, as in Table 2.5, addresses part of the problem by controlling for time invariant candidate characteristics between these two elections, but it is not entirely satisfactory. The negative coefficient associated with the criminal charges in Table 2.5 might be in reality capturing a deteriorating electoral performance of this restricted group of candi-

dates that is anterior to and independent of the information released by Transparéncia Brasil in 2006.

To address these concerns I will fully exploit the panel structure of my dataset by taking advantage of the considerably long political careers of federal deputies in Brazil who, different from the president or from the city mayors, are not subject to term limits. As a result, I observe that more than half of the 467 incumbent candidates in my working sample were running for their 3rd consecutive term in 2006.

The fact that I can track the candidate's results across different Congressional elections, from 1998 to 2006, means that I am able to exploit within federal deputy variation in the existence of criminal charges and on electoral performance across time for the estimation of the average effects of "Projeto Excelências". I make use of the following panel data specification for this purpose:

$$E_{ist} = \alpha_i + \gamma_{st} + \beta C_{it} + X_{it}\delta + \mu_{ist} \quad (2.2)$$

where  $E_{ist}$  is candidate  $i$  from state  $s$  vote share within her state of election in election year  $t$ .  $\alpha_i$  is a deputy fixed effect that captures all time invariant individual characteristics that might have an impact on her electoral performance, while  $\gamma_{st}$  is a state-year fixed effect that captures state-specific shocks affecting all incumbents in a particular congressional race, such as changes in voting-patterns or in the quality of the challengers.  $X_{it}$  is a vector of deputy time variant characteristics that might affect her electoral performance, such as whether the candidate changed party between elections. As in the previous equation  $C_{it}$  is an indicator for whether or not federal deputy  $i$  was listed in the Transparéncia Brasil's website with criminal charges at time  $t$ . Since this list came out in the Winter of 2006,  $C_{it}$  assumes a value of zero for all federal deputies in the elections before 2006.  $\beta$  is the parameter of interest and measures the impact of the Projeto Excelências on the candidate's electoral outcomes. The term  $\mu_{ist}$  captures unobserved candidate and state-year specific determinants of the vote-share. It is likely that candidates' vote-share (and the determinants driving it) are not independent over time. Thus, following Bertrand et al (2005) I decided to cluster the error term at candidate level throughout the analysis.

Estimation of equation 2.2 is done for a panel of 467 incumbent federal deputies seeking re-election in 2006, by exploiting the variation in electoral results across candidates within a state-year to identify the effect of the existence of criminal charges. The estimates will be based on an unbalanced panel of deputies across three electoral contests, from 1998 to 2006.

Table 2.6 presents the estimation results for equation 2.2 using the vote-share as dependent variable. Column 1 again shows that, unconditionally, the existence of criminal charges is associated with significantly lower vote-shares by -0.34 percentage points, which is in line with the results obtained in Table 2.4 and represents approximately 14% of this variable's whole period sample mean. Once I control for election year and federal deputy fixed effects (in column 2), the estimated coefficient associated with the criminal charges

appears even larger (-0.5 percentage points) suggesting that the Transparéncia Brasil's project has a significant effect on the within candidate electoral performance between 1998 and 2006. The specification in column 2, however, ignores the state-level nature of the electoral contests under analysis since the within candidate estimation makes it impossible to identify any state specific effects, such as (changes in) political preferences, attitudes with respect to corruption or the quality of the political challengers. In order to take this into account in column 3 I replace the electoral year dummies by state-year fixed effects taking advantage of the disaggregate nature of my dataset. The coefficient associated with the criminal charges goes back to -0.33 percentage points. Adding time variant factors such as change in the candidate's party (which is also negatively associated with electoral performance, although not in a statistically significant way), in column 4, produces no significant change in the criminal charges coefficient.

Overall, the results estimated so far strongly suggest that the online release of the incumbent candidate's political records by Transparéncia Brasil in 2006 did have a significant and negative impact on the electoral results of the candidates listed with criminal charges. In this sense, "Projeto Excelências" seems to have played an important role in promoting political accountability.

### 2.3.3 The Effects of "Projeto Excelências" by Type of Crime

The diversity of criminal offences found among the members of the Chamber of Deputies and listed by "Projeto Excelências" in 2006 raises the question of whether the project's impact on the candidates' electoral results has been different depending on the type of crime (allegedly) committed.

As mentioned above, more than 80% of the federal deputies listed with criminal charges by Transparéncia Brasil in 2006 carried charges for crimes that can generically be classified as crimes against the public administration. This is a wide category which includes crimes ranging from managerial wrongdoing to embezzlement, abuse of public office, active and passive corruption or electoral fraud. The level of detail of the information available and the usual overlapping of categories within the same criminal case, makes it difficult to precisely identify and distinguish each one of the charges at such disaggregated level. However, a much broader distinction among the existing charges as of 2006 is clear and possible to be made between crimes of a public or a private nature. That is, respectively, crimes committed while in office and which affect the performance of the deputy's public duties, versus crimes related to the deputy's private affairs. As described above, "Projeto Excelências" listed 49 deputies with charges for crimes of a private nature as of October 2006. Out of these, 21 deputies *only* carried charges for crimes of a "private nature". I make use of this information to estimate the following variants of equations 2.1 and 2.2 for the cross-section and the panel, respectively:

$$R_i = \alpha + \beta_1 C_i^{Pub} + \beta_2 C_i^{Priv} + X_i \delta + \mu_i \quad (2.3)$$

$$E_{ist} = \alpha_i + \gamma_{st} + \beta_1 C_{it}^{Pub} + \beta_2 C_{it}^{Priv} + X_{it}\delta + \mu_{ist} \quad (2.4)$$

where  $C_{it}^{Pub}$  is an indicator for whether or not federal deputy  $i$  was listed in the Transparéncia Brasil's website with charges for crimes of a public nature at time  $t$ , while  $C_{it}^{Priv}$  is the analogous indicator variable for crimes of a private nature. The remaining variables are as defined for equations 2.1 and 2.2 above. In this specification the difference between the parameters  $\beta_1$  and  $\beta_2$  measures the differential impact of the criminal charges revealed by "Projeto Excelências" for crimes of a public or a private nature.

Table 2.7 presents the results for equations 2.3 (columns 1 to 3) and 2.4 (column 4), where I disaggregate the deputies' criminal charges between crimes of a public and a private nature.

The results in columns 1 to 3 are estimated from the cross-section of 467 incumbent candidates in 2006, using the candidate's probability of re-election (column 1), vote-share (column 2) and difference in vote-share between 2006 and 2002 (column 3) as dependent variable. The results in column 4, on the other hand, are estimated using the panel of 467 incumbent candidates across three congressional elections, from 1998 to 2006. In this last specification the dependent variable is the candidates' vote-share in their electoral state.

In every specification, from columns 1 to 4, the candidates' electoral performance appears to be negatively and significantly associated with the existence of criminal charges for crimes of a public nature only. The existence of charges for crimes not directly related to the candidates' political life does not seem to have a significant impact on the candidates' electoral performance measured either by the probability of re-election or vote-share: the coefficient associated with the existence of charges for crimes of a private nature is in all specifications close to zero in addition of not being statistically significant.

In fact, the results in Table 2.7 suggest that the existence of criminal charges for crimes of a public nature has an even larger negative impact on the candidates' electoral performance than the one estimated before, in Tables 2.3 to 2.6, when all charges - "public" and "private" - were bundled together under a single category. The estimates for the panel specification in column 4, for instance, show that conditional of candidate and state-year fixed effects, the existence of criminal charges for offences directly related to the candidates' political life ("public") is associated with a significantly lower vote-share by -0.38 percentage points (instead of -0.33, when all charges are bundled together, in Table 2.6), which is as much as 16% of the variable's whole period sample mean. Overall, these results suggest that the electorate is likely to have treated the candidates listed by Transparéncia Brasil with criminal charges differently depending on the type of charges they were facing. In particular, voters used their ballots to punish the candidates facing charges for crimes directly related to their (former or current) political duties. This result is not surprising given the salience of political corruption as a key issue at the time of the 2006 election.

### 2.3.4 Validity Checks

**Falsification Test** All the estimation results so far have found a statistically significant association between the candidates' criminal status, as presented in the Transparéncia Brasil's website, and their electoral performance. They suggest that candidates with a criminal record on average registered lower probability of re-election and vote-share in 2006 than candidates with a clean record, as well as a relatively worse performance as compared to 2002. The negative effect in the candidates' vote-share is robust to controlling for time (or state\*time) and candidate fixed-effects, which proves that the results are not being driven by any unobserved time invariant characteristics of the candidates (or by differences in the congressional races across states). However, based on the previous specifications I still cannot rule out the possibility that the deterioration in electoral performance for the group of prosecuted candidates might have been anterior to the project's release. That being the case, the significantly worse performance of this group of candidates in 2006 found in the estimations above might be the result of a differentiated trend rather than of the Transparéncia Brasil's project itself. I address this concern with a simple falsification test where I restrict my analysis to the electoral results between 1998 and 2002 and observe the electoral performance of the two groups of candidates - with and without criminal charges, as defined by the Transparéncia Brasil's project in 2006. In case the electoral results were already significantly different between these two groups of candidates in these earlier elections, I will know that the results found in the previous estimations are driven by other factors than the information published by Transparéncia Brasil in 2006. Table 2.8 reports the results of this falsification exercise, using the change on the candidates' vote-share between 1998 and 2002 as dependent variable.<sup>53</sup> Given the unbalanced structure of the dataset, this exercise can only be done for the subsample of 288 federal deputies who were candidates in the three electoral contests of 1998, 2002 and 2006. The estimates in column 1 show that on average the electoral performance of the candidates listed by Transparéncia Brasil with criminal charges in 2006 was not statistically significantly different, between 1998 and 2002, to that of the candidates with a clean criminal record. This result is not due to the fact that the Transparéncia Brasil's project had no observable effect among this subsample of 288 candidates. In column 2 I present the estimation results of (the original) model 2.1 for this group of 288 deputies using the change in vote-share between 2002 and 2006 as dependent variable. The coefficient associated with the existence of criminal charges remains statistically significant and negative and of similar magnitude to the one obtained for the full sample in Table 2.5.

**Previous Criminal History** The results obtained throughout the paper show that when given objective information about the incumbents criminal history, Brazilian voters do seem to use their ballots to punish the candidates with a "dirty criminal record". This

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<sup>53</sup>Using the candidates' vote-share as dependent variable, in alternative, leads to the same conclusions.

is an important fact in itself. However, a more detailed analysis of the politicians criminal charges reveals that political corruption was not exclusive to the 2003-2006 legislative term. In fact, the majority of the deputies listed with criminal charges by Transparéncia Brasil in 2006 (more precisely 80% of them) already had a criminal record of previous convictions and/or criminal lawsuits at the beginning of the term in February 2003.

In table 2.9 I present the estimation results of model 2.1 and 2.2 for a restricted sample that excludes the candidates who were found involved in criminal scandals during the period between 2003 and 2006 *only* (i.e. candidates that did not have charges against them for crimes committed before 2003) using the change in the candidates' vote-share between 2002 and 2006 (column 1) and the candidates' vote-share (column 2) as dependent variables. Both the cross-sectional (column 1) and the panel (column 2) specifications are line with the results obtained throughout the paper. Despite the fact that all the candidates listed with criminal charges in this sample already had a criminal record by 2002, the negative impact of the criminal record, as listed by Transparéncia Brasil, on their electoral performance is only statistically significant in the 2006 election, once the "Projeto Excelências" is online.

The Transparéncia Brasil's project (and the attention it received from the voters) might have its origins in the corruption scandals that in 2005 and 2006 hit the Chamber of Deputies and made corruption a key issue in the congressional race. However, the results presented in this paper suggest that the impact of the Transparéncia Brasil anti-corruption campaign and information dissemination project are of wider magnitude: they allowed the voters to better identify and punish not only the "latest crooks" in the Chamber of Deputies, but also, in doing that, a larger group of politicians with a historical record of crimes that had gone unpunished until the 2006 election.

#### **Additional Considerations: Candidate selection and Programme Effectiveness**

A question that arises with the impact evaluation of "Projeto Excelências" is whether this project has had an additional and preceding effect on the selection of the candidates standing for re-election. As some of the criminally accused federal deputies learned about the project launch and the information it would bring to the public domain, they might have decided not to stand for re-election (or might have been prevented from doing so by their parties) in 2006, for fear of the damaging effects of such exposure on their political careers and on their parties' performance. If that is the case, I could expect to see, on average, the candidates with the most severe charges - and, hence, the least chances of re-election - withdrawing from the election. As a result, any estimation of the project's effects on electoral outcomes would suffer from selection bias. While I cannot rule out this scenario totally, I have strong reasons to believe that it is quite unlikely. First of all, the electoral candidates are chosen and the respective campaign contributions start being collected months, sometimes even years, before the election date. By the time the project was launched, or by the time the federal deputies learned about its planned release, the large majority of the candidates had already been selected and possibly registered on

the electoral commission. A proof that the Transparéncia Brasil's project did not lead to substantial changes in the candidates' decision to stand for election is that the proportion of federal deputies standing for re-election in 2006 (around 75% of the incumbents) was even larger than the one registered in the previous election.<sup>54</sup> Finally, it is important to remember that the information released by the Transparéncia Brasil's project was effectively not private. As I mentioned above, "Projeto Excelências" resulted from a compilation work of existing information that was scattered through several institutions across the country. Hence, it is improbable that after learning about the Transparéncia Brasil's project, the criminally charged federal deputies would step down and renounce the electoral contest. In fact, the success and publicity that the initiative achieved was probably unexpected among political circles.

Finally, there is an important point of note regarding the effectiveness of "Projeto Excelências". As discussed above, at the time of its release, in July 2006, this project focused exclusively on the criminal records and characteristics of the 467 incumbents standing for re-election. Due to time and scale constraints, no similar information was provided for the challengers (4,943 in total, in 2006) running for political office in each of the 27 states.<sup>55</sup> The perceived quality of the challengers vis-à-vis that of the incumbents is an important determinant of the latter's electoral performance. In my empirical analysis I indirectly control for differences in the quality of the challengers across the different states and electoral years through the inclusion of state (or state-year, in the panel specifications) fixed effects. However, it remains that the overall effectiveness of the Transparéncia Brasil's project in 2006 (and therefore the magnitude of the estimated effects associated with "Projeto Excelências") is ultimately conditioned by the quality of the pool of challengers. In short, the more voters perceive challengers as as corrupt as the incumbents in the Transparéncia Brasil "black-list", the lower will be their ability to punish the latter candidates based on the project's information.

A post-election analysis of the elected candidates' judicial records (which have been updated and available in the Transparéncia Brasil's website since 2007) suggests that the 2006 election might have had a positive impact on the overall quality of the candidates selected as far as criminal records are concerned. 92 out of the 165 incumbent candidates listed by Transparéncia Brasil with criminal charges in 2006 were not re-elected to a new term, while "only" 55 among the 231 challengers elected had a previous criminal history. The results throughout this paper indicate that the Transparéncia Brasil is likely to have had a significant impact on this "selection effect". The overall effectiveness

<sup>54</sup>It is true that a few deputies were sacked or forced to withdraw their candidacies (either by law or by their own parties) after having been found guilty or deeply involved in some of the corruption scandals in this period. However, this type of events are not exclusive of the legislative period under analysis (2003-2006) and, as before, affected a small number of federal deputies. It is unlikely that the sackings or resignations were a consequence of the Transparéncia Brasil project. Instead, they mostly involved deputies whose criminal offences had been widely reported by the conventional media and about whom the information available in "Projeto Excelencias" would be less likely to represent new evidence for the voters.

<sup>55</sup>As explained, there were a few exceptions to this rule since the project also listed the criminal records of a few selected challengers.

of this information dissemination project, however, is likely not to be limited to the selection of the members of the Chamber of Deputies. Given its estimated impact on the candidates' electoral results in 2006, the project is also likely to have a disciplining effect on the deputies' criminal behaviour during the new legislative term. This hypothesis is investigated in my next chapter.

## 2.4 Concluding Remarks

This paper studies the effect of the Internet release of the criminal records of Brazilian incumbent federal deputies in 2006 on their re-election probabilities and overall electoral performance. This information dissemination project was launched in 2006 by the NGO Transparéncia Brasil, three months before the electoral contest. For its innovative character and relevance it was widely reported by the conventional media and achieved a record number of more than 2 million individual access within a period of less than 3 months. Using data I directly collected from Transparéncia Brasil, together with information from the Brazilian electoral commission and from the Chamber of Deputies, my econometric analysis suggests that Brazilian voters did make use of the information compiled and published by Transparéncia Brasil to significantly punish the incumbents candidates listed with criminal charges. I show that the project's estimated effects on the candidates' electoral performance survive the inclusion of several controls. Moreover, these estimated effects are of considerable magnitude as compared to estimated effects of other significant variables, such as campaign expenditures. For example, my estimations suggest that, everything else being constant, the effect of the existence of criminal charges on the candidates' probability of re-election in 2006 is comparable to a decrease in their campaign expenditures by approximately 1 million Brazilian Reais in that same election (which is as much as 2.4 standard deviations of this variable's mean).

The analysis in this chapter produce relevant facts and results that contradict the common-sense ideas, prevalent in Brazil, that because corruption is so widespread in the political class voters became almost apathetic to it and, as a result, unable to duly punish the politicians who engage in corrupt activities. On the contrary, the Transparéncia Brasil information project shows that not all politicians are the same - at least as far as corruption (as detected and judged by the competent authorities) is concerned. Moreover, my results suggest that it is possible to set up information mechanisms that allow for a better identification of the "crooks" in the political class *and* that voters in Brazil do value and make use of that information at the time of the elections.

As the databases available now cover an increasing number of politicians, from different levels of government and the new generations of voters are more and more Internet savvy, it will be particularly interesting to follow the role played by this (and similar) Internet projects in shaping the elections to come (namely the next federal elections, that take place later in October 2010). The Internet, different from the traditional media vehicles offers an unlimited, almost free and (in Brazil, at least) uncensored space to

share information. No newspaper, radio or TV channel will be able to, in a single edition that can be obtained anywhere in the country, release the criminal records of more than 160 politicians and provide details of their political life. The “Projeto Excelências” by Transparência Brasil did and does that. No other medium of communication is able to reach so many people so fast - as proved by President Obama’s electoral campaign in 2007 and 2008, which made an unprecedented use of the Internet to mobilize supporters, collect funds and communicate with voters.

This study provides a first assessment of the Internet’s potential in promoting electoral accountability in Brazil. The results presented in this paper together with the impressive growth that has been registered in Internet access and usage rates in Brazil, offer very encouraging prospects for the future role this medium of communication can play in the country’s political scenario.

## 2.5 Tables

**Table 2.1:** Candidates and Reelection Rates

	1998	2002	2006
Turnout	79%	82%	83%
Total number of candidates	3,417	4,298	4,943
Total number of elected FDs	513	513	513
Running for reelection*	.	455	467
Reelected	.	301	282
Reelection rate		66%	60%

Sources: TSE, IPEA, Transparencia Brasil

\*Out of the total of directly elected plus stand-in FDs. There were 130 stand-in FDs in parliament between 1999-2002 and 115 between 2003-2006.

Table 2.2: Differences between groups of incumbents as of 2006

Descriptive Statistics	all		without criminal charges	with criminal charges	difference	s.e.
	mean	s.d.				
<b>FDs standing for reelection*</b>	<b>467</b>	.	<b>302</b>	<b>165</b>	.	.
Female (%)	8.4	.	8.9	5.4	3.5*	2.6
FDs with university education (%)	90.4	.	93.0	88.0	5.0**	0.0
Age	53.8	9.7	53.6	54.1	-0.5	0.9
Number of terms served	2.2	1.3	2.3	2.2	0.1	0.1
FDs running for 3rd+ term (%)	61.7	.	57.3	69.7	-12.4***	4.7
Direct owners of media licenses (%)	11.6	.	10.2	13.9	-3.7	3.1
Campaign contributions ('00,000 BRL)	4.3	4.2	4.4	4.0	0.4	0.4
Members of DEM (%)	10.9	.	11.6	9.7	1.9	3.0
Members of PMDB (%)	16.7	.	15.9	18.2	-2.3	3.6
Members of PSDB (%)	10.3	.	11.6	7.9	3.7	2.9
Members of PT (%)	17.8	.	22.5	9.1	13.4***	3.6
Citations in articles about corruption (in hundreds)	2.2	5.8	1.8	2.9	-1.2**	0.6
Visits to FDs page in Transparencia website <sup>+</sup>	13,761	14,260	13,821	13,651	170.6	1,382
State vote-share (%)	<b>2.2</b>	<b>2.1</b>	<b>2.2</b>	<b>2.1</b>	<b>0.1</b>	<b>0.2</b>
Change in state vote-share [2006 - 2002]	<b>-0.38</b>	<b>1.3</b>	<b>-0.22</b>	<b>-0.68</b>	<b>0.5***</b>	<b>0.1</b>
FDs reelected (%)	<b>60.4</b>	.	<b>69.2</b>	<b>44.2</b>	<b>25.0***</b>	<b>4.6</b>

Source: Transparencia Brasil, TSE, Camara dos Deputados

\*Includes 115 stand-in MPs that were in power between 2003-2006

<sup>+</sup>Accumulated values as of FEB09

**Table 2.3:** The Effects of Criminal Charges on the Candidate's Probability of Reelection

	(1)	(2)	(3)
Criminal charges	-0.250*** (0.0470)	-0.247*** (0.0505)	-0.247*** (0.0465)
Number of terms served		0.024 (0.0195)	
Age in 2006		-0.004 (0.0026)	
Change in party		-0.050 (0.0525)	
Gender (1 = <i>female</i> )		-0.091 (0.0771)	
Campaign contributions ('00,000 BRL)		0.025*** (0.0071)	
Vote share in 2002		0.090*** (0.0151)	
Media concession		0.073 (0.0649)	
Citations ( <i>in hundreds</i> )		0.002 (0.0030)	
State fixed effects	No	Yes	Yes
Party fixed effects	No	Yes	Yes
Observations	467	467	463
Adjusted R-squared	0.06	0.07	0.22

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Robust standard errors in parentheses.

The dependent variable is a dummy variable that takes the value of 1 if the candidate was re-elected in 2006 and 0 otherwise.

**Table 2.4:** The Effects of Criminal Charges on the Candidate's Vote-Share

	(1)	(2)	(3)
Criminal charges	-0.120 (0.2090)	-0.342** (0.1544)	-0.331** (0.1461)
Number of terms served		0.014 (0.0614)	
Age in 2006		-0.027*** (0.0079)	
Change in party		-0.085 (0.1611)	
Gender ( <i>1=female</i> )		0.220 (0.3372)	
Campaign contributions ('00,000 BRL)		0.102*** (0.0222)	
Media concession		0.311 (0.2364)	
Citations ( <i>in hundreds</i> )		0.012 (0.0082)	
State fixed effects	No	Yes	Yes
Party fixed effects	No	Yes	Yes
Observations	467	467	463
Adjusted R-squared	0.00	0.57	0.62

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Robust standard errors in parentheses.

The dependent variable is the candidate's vote-share in her electoral state in 2006.

**Table 2.5:** The Effects of Criminal Charges on the Candidate's Change in Vote-Share  
Between 2006 and 2002

	(1)	(2)	(3)
Criminal charges	-0.463*** (0.1309)	-0.328** (0.1350)	-0.286** (0.1281)
Number of terms served		0.046 (0.0552)	
Age in 2006		-0.023*** (0.0073)	
Change in party		0.013 (0.1717)	
Gender (1 = <i>female</i> )		-0.321 (0.3324)	
Campaign contributions ('00,000 BRL)		0.037** (0.0151)	
Media concession		-0.217 (0.1862)	
Citations ( <i>in hundreds</i> )		-0.008 (0.0073)	
State fixed effects	No	Yes	Yes
Party fixed effects	No	Yes	Yes
Observations	467	467	463
Adjusted R-squared	0.03	0.10	0.13

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Robust standard errors in parentheses.

The dependent variable is the candidate's change in vote-share between 2002 and 2006.

**Table 2.6:** The Effects of Criminal Charges on the Candidate's Vote-Share (panel)

	(1)	(2)	(3)	(4)
Criminal charges	-0.339** (0.1700)	-0.500*** (0.1621)	-0.328** (0.1544)	-0.334** (0.1556)
Change in party				-0.083 (0.1306)
FD fixed effects	No	Yes	Yes	Yes
Year fixed effects	No	Yes	No	No
State * Year fixed effects	No	No	Yes	Yes
Observations	1222	1222	1222	1222
Number of groups	467	467	467	467
Adjusted R-squared	0.00	0.81	0.84	0.84

Robust standard errors in parentheses, clustered at federal deputy level.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Results estimated using data for the period between 1998 and 2006. The dependent variable is the candidate's vote-share in her electoral state.

**Table 2.7:** The Effects of Criminal Charges by Type of Crime

	(1)	(2)	(3)	(4)
Criminal charges - <i>Public</i>	-0.257*** (0.0479)	-0.451*** (0.1492)	-0.349*** (0.1349)	-0.380** (0.1639)
Criminal charges - <i>Private</i>	-0.073 (0.0796)	0.108 (0.3088)	0.020 (0.2387)	-0.003 (0.2930)
Control variables <sup>1</sup>	Yes	Yes	Yes	Yes
Observations	463	463	463	1222
Number of groups	.	.	.	467
Adjusted R-squared	0.30	0.66	0.21	0.84

Robust standard errors in parentheses, clustered at federal deputy level.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Columns 1 to 3 are estimated from the cross-section of 467 candidates to re-election in 2006. The dependent variable is, respectively, a dummy var. that takes the value 1 if the candidate was re-elected in 2006 and 0 otherwise (1), the candidate's vote share (2) and the candidate's change in vote-share between 2002 and 2006 (3).

Column 4 is estimated using candidate-level data for the period 1998-2006. The dependent variable is the candidate's vote share.

<sup>1</sup> For columns 1 to 3 the controls include the candidate's number of terms in office, age, change in party, gender, campaign contrib., media concession, newspaper citations, vote-share in 2002, political party and state of election. For column 4: dummy var. for change in party and candidate and state-year fixed effects.

**Table 2.8:** Falsification Test

<i>Dependent variable:</i>			
<b>Change in state vote-share</b>	<b>[2002 - 1998 ]</b>		<b>[2006 - 2002]</b>
	(1)	(2)	
Criminal charges <sup>+</sup>	0.062 (0.1523)	Criminal charges (0.1388)	-0.307**
FD controls	Yes	FD controls	Yes
State fixed effects	Yes	State fixed effects	Yes
Observations	288	Observations	284
Adjusted R-squared	0.27	Adjusted R-squared	0.25

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1 ; Robust standard errors in parentheses.

<sup>+</sup> 1 = FDs with criminal charges in 2006

Sample restricted to candidates that ran for election in three consecutive contests: 1998, 2002. and 2006

**Table 2.9:** Sample Restriction

<i>Dependent variable:</i>			
<b>Change in state vote-share</b>	(1)	<b>State vote-share</b>	(2)
Criminal charges	-0.230* (0.1353)	Criminal charges	-0.293* (0.1620)
FD controls	Yes	FD fixed effects	Yes
State fixed effects	Yes	State * Year fixed effects	Yes
Observations	439	Observations	1147
-	-	Number of groups	439
Adjusted R-squared	0.23	Adjusted R-squared	0.85

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1 ;

Robust standard errors in parentheses, clustered at FD level in panel regression in column (2)

Sample excludes candidates with criminal charges for the period 2003-2006 only.

# 3 Internet Scrutiny and Politicians' Criminality

## 3.1 Introduction

The mass media can play a fundamental role in addressing political agency problems. By providing information about politicians' profiles and actions, the media can diminish the asymmetry of knowledge between voters and their political representatives. An effective media allows voters not only to select better representatives, but also to monitor their actions in office more efficiently. As a result, an effective media can also promote greater discipline among elected politicians by increasing the marginal cost of political corruption.

In this paper I will focus my attention on the Internet, which is currently the fastest growing medium and the largest repository of information in the world. In particular, I will look at the way the use of Internet in Brazil for information dissemination and scrutiny of politicians' actions and profiles has had an impact on the level of political corruption detected over the last few years.

The 2006 Brazilian federal elections set a benchmark for the role played by the Internet in shaping the electoral outcomes. In that year an innovative Internet-based project launched by the anti-corruption non-governmental organization (NGO henceforth) Transparéncia Brasil brought to the public the criminal records of all incumbent candidates seeking re-election to the federal Chamber of Deputies. By accessing the data published online, the voters were able to get information about any former convictions and current lawsuits pending against this group of candidates. This project attracted a vast audience and reinforced the salience of political corruption in the electoral debate. The results presented in the previous chapter show that this information dissemination project also had a significant impact on the electoral outcomes. The candidates listed with criminal charges by Transparéncia Brasil registered, on average, a significant reduction in their total state vote-share as compared both to their peers with a clean criminal record and with their pre-2006 electoral performance, and a large proportion were not re-elected to a new term. These results suggest that voters did use the information about political corruption to make their voting decisions and to punish the politicians with a criminal record.<sup>56</sup> In this sense, more information on the politicians' actions and profile did seem to enable political accountability.

In this chapter, I will divert my attention from the electoral impact of the Transparéncia Brasil's information project, and I will focus instead on its potential impact on the elected politicians' behaviour. In particular, my aim is to understand whether the

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<sup>56</sup>As mentioned in the previous chapter, the voters' ability to use the information available from Transparéncia Brasil's website to punish and remove from office the corrupt politicians is determined by the (perceived) quality of the challengers standing for election. If voters perceive the challengers to be at least as corrupt as the incumbents their ability to punish the latter based on the Transparéncia Brasil information is therefore very limited.

Transparéncia Brasil' information project might have had an impact on the amount of political corruption (and crime, in general) detected during the new legislative term, after 2007,<sup>57</sup> as compared to that detected in the previous term, before the project's release. This comparative analysis will allow me to have a better understanding of the overall efficacy of this information dissemination project in addressing problems of political agency and, in particular, in curbing political corruption.

In theory, the Transparéncia Brasil's information project - which since 2006 keeps an updated record of all criminal charges brought against members of the Chamber of Deputies - can have an impact on the amount of political corruption detected since 2007 through two main channels: first, by improving the political selection in 2006 - i.e. by allowing voters to throw out the corrupt candidates and elect better, less corrupt(ible) candidates; and second, by disciplining the politicians in office through a tighter scrutiny of their actions.

My survey of the new criminal records available from Transparéncia Brasil and from the Supreme Federal Court (the institution responsible for the adjudication of cases involving serving federal deputies) reveals that, as compared to the previous term, the amount of new lawsuits filed against serving federal deputies has dropped by (at least) 70% since 2007. The reduction in the number of deputies implicated in criminal offences between the two terms analysed is visible both within the group of incumbent deputies re-elected and, especially, among the group of challengers elected (as compared to the (ex-)deputies who stepped down at the end of the previous term). Provided that there has not been any deterioration in the corruption detection mechanisms used by competent authorities between the two terms in analysis,<sup>58</sup> this evidence offers good support to the hypothesis that the Transparéncia Brasil's information project might have had an important role in curbing political corruption in the Chamber of Deputies during the current term. In particular, the observed reduction in the number of prosecutions between the terms under analysis within the group of incumbents re-elected should be interpreted as capturing the disciplining effects of the information dissemination project on the deputies' behaviour in the new term. And the (even larger) reduction in the number of prosecutions observed among the group of challengers elected in 2006 vis-à-vis those of former deputies between 2003 and 2007 suggest, on the other hand, that in addition to the disciplining effect on politicians' criminal behaviour, the information project might also have generated a quality gain (as far as involvement in criminal activities is concerned) in the pool of federal deputies elected in 2006.

Overall, the observed reduction in the amount of criminal activity detected among federal deputies in the new legislative term, since 2007, is an important achievement and particularly so for a country whose judiciary system has been unable to represent enough threat to discipline the offenders. Brazil has been the first presidential system to impeach

<sup>57</sup>The current term started on the 1st of February 2007 when the deputies elected in October 2006 took office. It will end on the 31st of January 2011.

<sup>58</sup>And given that no major anti-corruption programme or institutional reform targeting the Chamber of Deputies has been introduced since 2007.

a president (Collor de Mello in 1992), but throughout the years many members of its political class have survived unpunished in spite of countless accusations of corruption and crime.<sup>59</sup> This has damaged the credibility of the political institutions in the eyes of the voters and, with respect to the Congress in particular, its ability to fulfil its role of checking the executive (Fleischer, 2010).

The results presented in this paper stress the role played by NGOs as intermediaries between elected politicians and civil society to address political agency problems. Through their anti-corruption campaigns and information dissemination projects, the work of the NGOs in Brazil (Transparência Brasil and others with a similar project line that have been created since 2006) not only sensitizes voters to the subject of corruption but also gives them means to scrutinize politicians' actions more efficiently and to distinguish the "wheat from the chaff" at the time of election. Finally, the results also underline the important role of the Internet as the medium of communication and mobilization used for this purpose as no other medium would be able to take so much information, so fast and to so many people across the country at a lower or similar cost.

The analysis in this paper contributes mainly to the literature that investigates the role of information on political accountability. Traditionally, this literature relies on the theoretical framework of the political agency models introduced by Barro (1973) and Ferejohn (1986). In these models, imperfectly informed voters act as principals who select and finance governments and are subject to their political decisions, and politicians are the agents in charge of those political choices (Besley, Burgess and Prat, 2002). The theoretical predictions from this literature do not unambiguously associate greater access to information to enhanced accountability and voter welfare (see Besley and Smart, 2007, or Prat, 2003, for instance). My aim in this chapter is to provide further empirical evidence for a better understanding of this relationship between information and accountability. All the evidence presented in this chapter should be interpreted and should work as a complement to the results presented in the previous chapter that show that voters do seem to use their vote to punish corrupt politicians when information that allows them to distinguish the corrupt from the law-abiding candidates is available and easily accessible.

A distinctive feature of the analysis presented in this chapter is the focus on the Internet as a privileged medium for the promotion of transparency in politics and accountability. Thus, this study closely relates to the growing "niche" of the literature on information and accountability that looks at the links between Internet and corruption. The vast majority of this literature, however, focuses on the impact of different e-government initiatives, rather than on NGO or grassroots' initiatives, on corruption. On the whole, it offers evidence - mostly based on case studies - of a positive role played

<sup>59</sup> The inefficiency of the judiciary in Brazil can be summarised in the words of the federal prosecutor Mario Lucio Avelar, who filed criminal actions against several deputies involved in the corruption scandals that stormed the Brazilian Congress in 2005 and 2006, in an interview to the newspaper "O Globo": "The justice is very lenient towards financial crimes in general. In Brazil in order to go to jail one has to rape, murder and confess. And have a bad lawyer." ("O Globo", November 2006).

by the Internet in increasing transparency and promoting political accountability (see Bhatnagar, 2003a; Mahmood, 2004; UNDP, 2008; Kim et al, 2009; Liu et al., 2009; Andersen et al, 2010).

The rest of this chapter is organised as follows. In the next section I provide background information on the Transparéncia Brasil's information dissemination project and its estimated results. Section 3.3 presents a simple model to guide my analysis of the effects associated with the information revelation project started in 2006. In Section 3.4 I describe the data sources used and discuss the evidence found within the proposed framework. Section 3.5 concludes.

### 3.2 Background

In July 2006 the NGO Transparéncia Brasil launched an Internet-based anti-corruption campaign aimed at preventing the re-election of the federal deputies with a “dirty” criminal record. This campaign was motivated by a series of corruption scandals that hit the Federal Congress in 2005 and 2006, during President Lula da Silva first administration, involving an unprecedented number of senators and federal deputies as well as several top Workers’ Party officials. The evidence of widespread corruption at federal level represented a major blow to the Workers’ Party reputation of transparency and honesty in politics built throughout two decades of municipal and state administrations across the country (Hunter and Power, 2007) and accentuated the lack of trust and disbelief in the country’s political institutions.<sup>60</sup> Political corruption became the most salient issue in the political debate and during the electoral campaign, dominating the news coverage of politics in the two years up to the election.<sup>61</sup>

According to Transparéncia Brasil’s founder and board member Neissan Monadjem, the NGO’s anti-corruption project, which started in 2006, answered to a growing demand from the Brazilian electorate for more information on political candidates that was not being satisfied by the media. To satisfy that demand, Transparéncia Brasil compiled information from several different regional and federal courts in Brazil in order to assemble an accurate picture of the criminal history of each candidate to re-election. From this compilation and research work resulted a list of 165 incumbents, out of the 467 standing for re-election, either formerly convicted or under criminal investigation, which was made available on the Transparéncia Brasil’s website under the project name “Projeto Excelências” (“Excellencies Project”). Together with the information about the criminal records,

<sup>60</sup>In a survey by the best-selling weekly magazine “Veja” in 2006, only 3% of those interviewed agreed that the country’s congressmen effectively represent and defend the interests of the Brazilian society. When asked for a word that would best define the country’s federal representatives the top three results given by the surveyees were “dishonest”, “insensitive” (to society’s needs) and “liars”. In line with these results, Datafolha public opinion surveys also show that the Brazilian Congress reached its lowest rate of public approval in 12 years in the 2005-2006 period.

<sup>61</sup>The Chamber of Deputies and the Senate TV channels, for instance, reached record audiences during 2005 and 2006, as the public followed the development of the Parliamentary Commissions of Inquiry (“CPIs”) that were set up to investigate the different scandals. In a number of days their high audiences rivalled those of main commercial channels (Folha de São Paulo, 7 Aug. 2005 in Observatorio da Imprensa).

the project also provided biographical data and details on the political activity of every incumbent candidate standing for re-election. These details included information on their legislative production, membership in special interest groups or commissions, presences and absences from Congress and electoral financing accounts (donors and/or recipients and respective amounts). The whole set of data provided by Transparéncia Brasil was intended to serve as complementary information for voters to separate the “wheat from the chaff” among the candidates seeking re-election to the Chamber of Deputies.

The “Projeto Excelências” was an instant hit in the Internet world. The list with the incriminated candidates was widely replicated in online forums, blogs and news sites.<sup>62</sup> For its innovative nature the project also received extensive coverage in the conventional media which, according to its coordinators, was fundamental to extend its reach.<sup>63</sup> The impact evaluation of this Internet-based project on the electoral performance of the candidates to re-election in 2006 was presented in the previous chapter. By exploiting within and across candidate variation in the existence of criminal charges and electoral performance I have shown that the candidates listed with criminal charges by the Transparéncia Brasil “Excellencies Project” registered a significantly smaller probability of re-election and an overall worse electoral performance in 2006, as measured by the candidate’s vote-share in the state of election, after the project went online. The results strongly suggests that the electorate did value and make use of the information about the candidates’ criminal records in order to “throw the rascals out” of office.

Following the unparalleled number of corruption scandals during his first term in office, President Lula da Silva promised an anti-corruption package specifically aimed at curbing corruption in the federal administration. As a result, since 2006 several bills have been sent to Congress for debate and voting. However, until the end of 2009 only one anti-corruption bill had been approved by the federal legislative. On the other hand, over the past years there has been a visible rise in the number of anti-corruption initiatives started by civil society groups. Several Internet-based projects have been started which, in line with Transparéncia Brasil’s “Projeto Excelências”, aim at keeping an up to date record of the elected politicians parliamentary activities and scandals.<sup>64</sup> In truth, several government bodies have also been using the Internet to promote civic engagement and accountability.<sup>65</sup> The Chamber of Deputies, for example, has been making increasing

<sup>62</sup> The project’s success led to Transparéncia Brasil winning an international contest by the United Nations Democracy Fund which resulted in a two-year grant to maintain and extend the project (Monadjem, 2007).

<sup>63</sup> Information obtained from personal conversation with the project’s main coordinator, Mr. Claudio Weber Abramo.

<sup>64</sup> Examples of such Internet projects are:

- Movimento de Combate a Corrupção Eleitoral: <http://www.mcce.org.br/>
- Contas Abertas: <http://contasabertas.uol.com.br/>
- Voto Consciente: <http://www.votoconsciente.org.br/>
- Congresso Aberto: <http://www.congressoaberto.com.br/>
- Vote na Web: <http://www.votenaweb.com.br/>

<sup>65</sup> The government’s dedicated “transparency portal” (<http://portaldatransparencia.gov.br>), for instance, was created in 2004 to provide information on budgets and spending across different levels of government. In 2008 this Internet portal was awarded as one of the five best governance practices in the

use of its web space as a privileged medium of its transparency policy. As a result, in the current term it is possible to follow each deputy's legislative output (bills proposed, voting patterns, presences/absences from Congress, membership in special program commissions) as well as their detailed monthly expenses claims since April 2009. The latter, in particular, represents an important step in the Chamber's own anti-corruption policy. It targets a common method used by politicians to pocket undue public money by claiming back expenses unrelated to their political duties.<sup>66</sup> All these new initiatives, both public and private, allow for an even greater scrutiny of the federal deputies by the electorate and reinforce the role of the Internet as a platform for information dissemination and accountability. Although the average Internet penetration rate in Brazil is still far from the levels registered in North America or Western Europe, its usage rates have been increasing at a fast speed as a result of the country's economic growth and of the government's several programs to promote Internet access throughout the country.<sup>67</sup> According to the "Freedom on the Net 2009" report by Freedom House, between 2006 and 2008 the number of Internet users more than doubled in Brazil reaching 70 million people. As a result, Brazil currently has the largest population of Internet users in Latin America and the seventh largest in the world. This suggests that the impact of Internet-based information projects, such like the one by Transparéncia Brasil, in curbing corruption is potentially even greater now than in 2006 as the information they convey is able to reach a larger proportion of voters.

### 3.3 Theoretical Framework

In this section I present a simple model to help guide my analysis and interpret the evidence. It sets up a simple theoretical framework for identifying the ways in which the Transparéncia Brasil's information dissemination project might have an impact on the politicians' criminal behaviour.

Consider a world where political candidates' criminal propensity ( $\varsigma$ ) follows a normal distribution with average  $c$  and variance  $\sigma$ . In this world voters dislike political corruption but have imperfect information on the candidates' criminal profile and actions.

At any given moment, the set of politicians in office will correspond to an area of the criminal propensity distribution delimited by a minimum ( $c$ ) and a maximum ( $\bar{c}$ ) threshold level of criminal propensity  $\varsigma$ , as in Figure 3.1. This is because candidates' probability of election is positively correlated with their own criminal propensity (e.g. candidates increase their probability of being elected by engaging in vote-buying, illegal

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world by the United Nations Convention Against Corruption.

<sup>66</sup>Each deputy is entitled to claim back up to BRL 15,000 each month (or a total of BRL 90,000 per semester – roughly USD 49,500 at 2010 exchange rates) to cover expenses related to their political activity. However, investigations conducted by journalists from Folha de São Paulo based on the receipts handed in by the deputies and approved by the Chamber since 2007 have shown that several deputies systematically claim back money to cover purely private expenses, such as private maids, security services for their properties or electoral campaigns.

<sup>67</sup>For details on the government's policies of "digital inclusion" see <http://www.inclusaodigital.gov.br> or <http://onid.org.br/portal/programas/>

campaign funding or simply by making “fake promises” ). Hence very honest candidates, at the left-hand tail of the distribution, will not be elected.<sup>68</sup> However, the most corrupt of the candidates, at the right-end tail of the distribution, will not be elected either as there will be an upper bound for the level of observable corruption voters are willing to tolerate.<sup>69</sup>

The number of crimes committed by a given politician  $i$  in term  $t$  will be a positive function of her own criminal propensity ( $\varsigma_i$ ) but will also depend negatively on the desutility arising from eventual detection and punishment in that term ( $\rho_t$ )<sup>70</sup>:

$$C_{it}(\varsigma, \rho) = b(\varsigma_i) - d(\rho_t) \quad (3.1)$$

The timing of the game is as follows. Candidates are elected to office at the beginning of period 1. At the end of this period, an information revelation mechanism reveals to voters the amount of crimes committed by each politician. Elections take place and voters choose their new political representatives. Once elected, the information mechanism keeps tracking and updating the politicians' criminal records, which are observed by the voters. A new election is held at the end of period 2.

The information revelation mechanism can have an impact on the amount of crime committed by serving politicians through two main channels. First, the information revelation at the end of period 1 is expected lead to a change in the composition of the politicians elected to office in period 2. At the time of election voters are able to identify the most corrupt incumbent candidates and use their votes to throw these incumbents out of office. In replacement, new politicians (challengers) are elected to their seats. Graphically, this change in the composition of politicians elected can be illustrated by a move of the upper and lower bounds of the distribution of the elected candidates to the left, respectively, from  $\bar{c}_1$  to  $\bar{c}_2$  and from  $c_1$  to  $c_2$ , as in Figure 3.2. The dashed area in this same figure represents the group of incumbents re-elected to office in period 2, after the information revelation. On average, due to the information revelation mechanism the group of selected politicians in period 2 will be of lower criminal propensity than the group of politicians in office in period 1.

Second, the information revelation mechanism is also expected to have a disciplining effect on the politicians' criminal behaviour in period 2. This is because in period 2 politicians know that any criminal act will be automatically revealed to voters. Thus, for every politician, the expected punishment ( $\rho$ ) from a criminal act will be higher in

<sup>68</sup>Alternatively, one can simply think that the most honest people in the society do not even want to get involved in politics.

<sup>69</sup>Alternatively, one can simply consider that people with the highest propensity to corruption in society will find other activities rather than politics that maximise their amount of illicit rent extraction (e.g. they will prefer drug trafficking).

<sup>70</sup>At the extreme, punishment means not being re-elected to a new term since politicians like being re-elected

period 2 than in period 1, i.e.  $\rho_2 > \rho_1$ . As a consequence, the total amount of crime committed by serving politicians is expected to be smaller in period 2.

Given the change in the composition of politicians in office between period 1 and 2, the total variation in the number of crimes committed by elected politicians during these two periods can be decomposed in the following manner:

$$\Delta C(\varsigma, \rho) = (C_2^{incumb} - C_1^{incumb}) + (C_2^{new} - C_1^{old}) \quad (3.2)$$

where  $C_t^{incumb}$  measures the number of crimes committed by the incumbents re-elected in period  $t = \{1, 2\}$ ;  $C_2^{new}$  is the number of crimes committed by the newly elected deputies during period 2 and  $C_1^{old}$  is the analogous measure in period 1 for the deputies who were not re-elected for a second term.

In this expression, the first difference  $(C_2^{incumb} - C_1^{incumb})$  measures the variation in the number of crimes committed between periods 1 and 2 within the group of politicians that were re-elected to a new term at the end of period 1. As a result, this difference captures the disciplining effect of the information mechanism on the incumbents' behaviour in period 2. Everything else being equal, this effect is expected to decrease the number of crimes committed within the group of incumbents between period 1 and 2:  $C_2^{incumb} - C_1^{incumb} < 0$ .

The second difference  $(C_2^{new} - C_1^{old})$  measures the variation in the number of crimes committed between periods 1 and 2 by, respectively, the group of politicians who were not re-elected to a new term at the end of period 1 and the newly elected politicians that took their seats in the Chamber in period 2. The difference  $(C_2^{new} - C_1^{old})$  is expected to capture not only the disciplining effect of the information dissemination mechanism on the politicians' criminal behaviour, but also the selection effect associated with this same mechanism.

The disciplining (or incentive) effect is expected to work for the newly elected politicians in the same way as for the incumbents: as the expected cost of crime goes up in period 2, after the introduction of the information mechanism, the number of crimes committed by any politician in period 2 should be smaller than in period 1. This would also be true for the challengers elected had they been in office also in period 1:  $C_2^{new} < C_1^{new}$ . The selection effect, on the other hand, reflects the change in the composition of politicians in office between periods 1 and 2. As the most corrupt politicians are thrown out of office after the information about their crimes is revealed at the end of period 1, new politicians with a lower criminal propensity are elected in their place as illustrated in figure 3.2. As a result, in any period  $t = \{1, 2\}$  it is to be expected that  $C_t^{new} < C_t^{old}$ , this is, everything else being equal, the number of crimes committed by the new crop of elected politicians will be lower than the crimes committed by the old (non-re-elected) politicians. Putting both selection and incentive effects together, I expect the number of crimes committed in period 2 by newly elected politicians to be smaller than the number

crimes committed by the “old” politicians in period 1, i.e.:  $C_2^{new} - C_1^{old} < 0$ .<sup>71</sup> Moreover, if the disciplining effect of the information mechanism in period 2 is uniform across the elected politicians,<sup>72</sup> it is to be expected that

$$|C_2^{incumb} - C_1^{incumb}| < |C_2^{new} - C_1^{old}| \quad (3.3)$$

To sum up, in a world where political candidates have different propensities to corruption and voters are imperfectly informed about politicians’ actions, the information revelation mechanism is expected to decrease the amount of political crime through two different ways. First, by allowing voters to select a better pool of candidates at the time of election, i.e., candidates with lower propensity to crime (the “selection effect”). And, second, by increasing the expected costs of crime for all politicians elected (the “discipline” or “incentive effect”).

In the context of this paper’s analysis, this framework suggests that the Transparéncia Brasil’s project should lead to a reduction in the total number of crimes detected among serving federal deputies. In particular, if the selection and incentive effects hold in the direction proposed above I expect to observe a reduction in the amount of crime detected between the 52nd term (2003-2007) and the 53th term (2003-2011) both within the group of incumbents re-elected and within the group of challengers elected as compared to the former deputies that stepped down at the end of the 52nd term.

### 3.4 Data and Evidence

#### 3.4.1 Analysis

The aim of this paper is to understand whether the Transparéncia Brasil’s information project, which started at the end of the 52nd legislative term, in 2006, has had an impact in federal deputies’ criminal behaviour during the new legislative term, from 2007 onwards. To address this question, I survey the criminal records of the federal deputies in office during the terms under analysis in order to estimate the number of criminal offences committed in each term and, based on that, compute a measure of the change in the deputies’ criminal behaviour between the two terms analysed (this is  $\Delta C$  in section 3.3 above). Therefore, it has to be stressed that any consideration about the evolution in the number of crimes between the two terms under analysis is, in fact, based on the number of crimes *detected* by the competent authorities in each period.

It is possible that deputies in office in both legislative periods might have committed crimes that went (and are still going) undetected. This is not unlikely since many crimes

<sup>71</sup>Notice that this result is also compatible with an alternative scenario in which the selection of the new deputies works in the opposite direction. This is, the challengers elected to office have higher propensity to crime than the non re-elected incumbents. Such possibility is not completely unrealistic in my scenario given that at the time of the election the Transparéncia Brasil’s project did not include information about the criminal records of the challengers. Even in this scenario the number of crimes detected in period 2 could be smaller if the incentive effect is sufficiently strong to counteract the (negative) selection effect.

<sup>72</sup>Or, at least, not larger for the challengers than for the incumbents re-elected

- and particularly crimes involving high-level politicians - take a considerable amount of time to be uncovered. In fact, most of the new lawsuits that have been filed against federal deputies since 2007 refer to acts committed in previous terms (and previous political posts). Likewise, it is possible that crimes committed over the last three years will only be detected and become public knowledge in the years to come. To deal with this time issue, I will base my comparative analysis on the number of crimes that were *committed* and *detected* within each legislative period, that is, between 2003 and 2007 and from 2007 onwards. Provided that the efficiency of the detection mechanisms used by the responsible authorities (federal police, public prosecutors, courts) did not deteriorate over time this comparative analysis should provide a good estimate of the change in the level of the deputies's criminal behaviour between the two terms under analysis.<sup>73</sup><sup>74</sup>

Finally, another "timing" issue affecting my comparative analysis is that the 53th legislative period will only finish in February 2011, when the deputies elected in October 2010 will take office. My account of crimes committed and detected in the 53rd legislative period is defined as of February 2010. Typically, in electoral years several new lawsuits are filed against deputies seeking re-election for electoral crimes. For timing reasons and in order to make the comparison as valid as possible, any electoral crime committed during the 2006 election by the deputies in office during the 52nd term will be excluded from the comparative analysis.

In the next subsections I discuss the data sources used and present some descriptive statistics to characterise the profile of the elected deputies in each term. Then, I give an overview of the main criminal cases detected during the terms under analysis and of the number of deputies prosecuted in consequence of them. Following the theoretical framework presented in section 3.3 I will separately analyse the variation in the number of criminal occurrences detected between the 52nd and the 53rd legislative terms within the group of incumbents re-elected and within the group of challengers elected to office in 2006 as compared to the ex-deputies they replaced.

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<sup>73</sup> There are not many reasons to believe that the detection mechanisms used by competent authorities have become less efficient since 2007. The Brazilian Federal Police is the main investigative body for crimes involving federal deputies. Its operational records show for the period 2003-2010 show that the total number of ongoing anti-crime operations (which include also criminal investigations related to international drug trafficking and terrorism) has not decreased since 2006/2007. More importantly, this same source shows that the number of civil servants arrested in consequence of these operations has remained stable throughout the whole period under analysis (more precisely, 991 detentions were made between 2003 and 2006, and 896 between 2007 and February 2010). This makes me trust that, on the whole, the investigation procedures by the competent official bodies have been at least as efficient in detecting corruption among federal agents in the current legislative period as before 2007.

<sup>74</sup> Another assumption necessary is that politicians in the Chamber of Deputies did not become able to develop more sophisticated, harder to detect crimes after the Transparéncia Brasil's project went online. There are not many ways, other than time, that can prove whether this was a reasonable assumption to make. However, the profile of the deputies elected in 2006 suggests that they are, on average, of "lower criminal propensity" than the former legislature. Thus, everything else being equal, it is unlikely that the politicians with a 'clean' criminal record would only decide to engage in criminal activities after 2007, when the scrutiny to Congress members is clearly tighter.

### 3.4.2 Data Sources

My aim in this paper is to measure the change in the number of crimes committed by the elected deputies between the two last legislative periods, before and after the launch of Transparéncia Brasil's information project. This corresponds to the  $\Delta C$  measure in section 3.3.

In practice, my measure of  $\Delta C$  will be based not only on the existing criminal convictions but also on existing criminal investigations and accusations against federal deputies as long as the legal proceedings were started by the public prosecution service. Therefore, my measure of  $\Delta C$  includes not only sentenced offences but also allegations of crime made against federal deputies.<sup>75</sup> This approach is justified by the long life cycle of legal cases against federal politicians in Brazil until a final sentence is imposed, and is followed also by Transparéncia Brasil in "Projeto Excelências".<sup>76</sup>

The data used in this paper comes from two main sources: the Transparéncia Brasil website and the Supreme Federal Court online database.

The Supreme Federal Court (henceforth SFC) is the only judicial institution in charge of judging members of the Federal Congress. This court keeps an online database that through keyword based searches allows any Internet user to access a list of any former convictions or ongoing cases against the current members of the Chamber of Deputies. In the terminology used in section 3.3 the SFC database covers information regarding the criminal records of the re-elected incumbents ( $C^{incumb}$ ), as well as of the challengers elected in 2006 ( $C^{new}$ ).

For each case listed (if any) the SFC provides a summary description which includes the name of those involved (defendant, lawyers, prosecutors), the date the proceedings were instituted in the SFC and the date of their different legal stages, the origin of the case (in case it started and was transferred from a different court) and a brief technical description of the typology of the respective crime.

The SFC does not hold information about the former deputies who were not re-elected in 2006, this is,  $C_1^{old}$  in the terminology used above. As soon as a deputy leaves office any pending case is sent back to the respective judicial house of origin.<sup>77</sup> My knowledge about this group of ex-deputies is mostly based on the information obtained from Transparéncia Brasil (and discussed in the previous chapter). This NGO provided me with a complete list of the federal deputies' judicial records as of 2006 that resulted from its own research for "Projeto Excelências".

As described above, Transparéncia Brasil's work in 2006 was aimed at preventing the re-election of the candidates with a "dirty" judicial record. Hence its data, as of

<sup>75</sup>This means that most of the times I refer to "crimes committed by deputies" it should in fact be interpreted as "crimes allegedly committed by deputies".

<sup>76</sup>This is still a prudent approach since the public prosecution can only institute lawsuits against serving members of Congress after gathering sufficient evidence of crime.

<sup>77</sup>Exceptionally an ex-deputies might retain her "last instance" privilege and her criminal records remain at the SFC. This will happen if she is elected as senator, president or vice-president, or appointed as a federal minister or as attorney general (Brazilian Constitution Art. 102, I, b).

2006, did not cover all the deputies in office between 2003 and 2006 but focused only on the subset of incumbent deputies standing for re-election.<sup>78</sup> In order to learn about the criminal records of the ex-deputies who did not stand for re-election in October 2006, I had to resort to my own research using news websites such as "Globo", "Folha de São Paulo" or "Congresso em Foco".<sup>79</sup> The fact that the period between 2003 and 2006 was considerably rich in political scandals makes it easier to find information about the ex-deputies prosecuted for those events, even if they are no longer serving members of the Congress. However, it is still possible that my account of criminal cases detected between 2003 and 2007 underestimates the real figure if some (probably minor) cases have gone unreported by the main media channels that constitute my source of information.

To correctly compute the measure  $\Delta C$  above I need to know not only whether criminal charges have been brought against members of the Chamber of Deputies during the terms under analysis, but also whether those charges were instituted for offences effectively committed during the term. This is important since for the proposed comparative analysis to be valid I need to make sure that I effectively compare the level of criminal activity detected in the two terms under analysis only. Therefore, any charges brought against federal deputies for offences committed in previous terms (before 2003) and/or political posts have to be ruled out.

The information provided by the SFC online database in particular is often too scarce to learn about the occurrence date of the cases against federal deputies listed. For each case listed, the database provides information about the date when the legal proceedings were initiated before the SFC. However, it is not uncommon that between the crime's occurrence date and the date it reaches the SFC a couple years have passed. This is especially true for the cases that reach the SFC coming from lower jurisdictions and whose original records are usually no longer accessible.<sup>80</sup> To overcome this problem I had to resort to additional information sources. The news search engine provided by Transparéncia Brasil, under the project name "Deu no Jornal" ("In the News"), which gives online access to thousands of articles about corruption published by newspapers across Brazil since 2004, was a fundamental tool for this purpose. Through keyword based searches it allowed me to access past newspaper articles about selected politicians which provided the necessary details to complement the SFC data whenever necessary. A list with the remaining online sources used in this paper is provided in the bibliography.

Finally, for all former and current deputies, the Chamber of Deputies provided basic biographical data and the Superior Electoral Court (the Brazilian electoral commission)

<sup>78</sup>In any case these represented approximately three-quarters of the total number of deputies that were in office during the 52nd term.

<sup>79</sup>More precisely, through the following addresses: <http://g1.globo.com/g1/politica/> ; <http://www.folha.uol.com.br/>; <http://congressoemfoco.ig.com.br/>.

<sup>80</sup>Moreover, it should be stressed that the information available at the SFC website is in general very technical and hard to interpret for anyone without a legal background. One of the merits of the Transparéncia Brasil's project is precisely the fact that it attempts to make the understanding of each case more "accessible" to the average citizen - for example, by providing a non-technical summary of the case or weblinks to previous newspaper articles published about it.

details on the electoral results and campaign accounts.

### 3.4.3 Descriptive Statistics

Table 3.1 presents descriptive statistics for the group of 513 deputies elected to the Chamber of Deputies in 2002 and in 2006. As can be seen, for most of the variables considered there are no significant differences between the two periods: candidate's vote-share, gender ratio, average education, political affiliation, ownership of media concessions or number of terms in the chamber of deputies are not significantly statistically different between the elected legislatures in 2002 and in 2006. The whole group of deputies elected in 2006 is on average older than in 2002, which is not surprising given that 55% of the deputies in this group are incumbents re-elected in 2006. However, the 231 challengers elected at this date were both younger and had less experience in the Chamber of Deputies (as measured by the number of previous terms served) than the former deputies they replaced. The main difference between these two periods seems to be in the size of the electoral campaigns. Evaluated at 2002 prices, the candidates elected in 2006 spent on average 14,000 Reais more than the candidates elected in 2002.

At the start of the current legislative term, in February 2007, 125 out of the 513 deputies elected already had charges against them for crimes committed in the past. My knowledge of the equivalent measure for the 513 deputies elected in 2002 is limited since I cannot recover the criminal records of all the deputies elected at that date. In particular, I do not have information about the pre-2002 records of the 121 deputies who did not stand for re-election at the end of term, in 2006. The criminal records of the remaining 392 deputies elected in 2002 were surveyed and listed by Transparência Brasil as described above. From this data I observe that 136 deputies already had former convictions or pending lawsuits at the beginning of the term in February 2003. I will take this figure as a lower-bound for the total amount of deputies elected in 2002 with previous criminal charges against them.

An analysis of the federal deputies' criminal records listed by Transparência Brasil in 2006 and of the existing lawsuits in the SFC against the current members of the Chamber reveals that the type of crimes that generated legal action are roughly the same in both periods. The majority of the charges are instituted for crimes against the public administration, including crimes of embezzlement, fraudulent public procurement, managerial wrongdoing, electoral crimes and gang formation. In both periods several lawsuits were also filed for crimes not directly related to the deputies' political functions. Among these, crimes of tax evasion or irregularities in tax declarations, and crimes against the environment or the national patrimony were the most frequent.

The life cycle of lawsuits against members of the federal Congress is on average quite long. It is common to find among the cases listed in the SFC lawsuits filed for crimes allegedly committed many years ago. Because the Brazilian electoral law authorizes candidates convicted in court to stand for election as long as a court decision is not passed

into matter adjudged (this is, until their last appeal has not been exhausted), lawsuits against elected deputies carry on from previous posts and accumulate over time.<sup>81</sup> As a result, many of the lawsuits listed in the deputies' records were not filed for crimes committed while serving in the Chamber of Deputies. Instead, the majority of the cases relate to previous political posts in state or municipal administrations. This is not a surprising finding given that political corruption in Brazil is known to be especially pervasive at the executive level of local governments, where the detection mechanisms are typically less effective<sup>82</sup> and the opportunities for fraud more abundant.<sup>83</sup>

### 3.4.4 Evidence

#### Crime by Legislative Period

**52nd Term (2003-2007)** As discussed in section 3.2 during the 52nd legislative term, between February 2003 and January 2007, an unprecedented number of criminal cases involving federal deputies was detected and became public knowledge. Two scandals in particular monopolised the news and generated intense public interest and debate for their magnitude and political significance: the “mensalão” and the “bloodsuckers’ scandal”, as they were dubbed by the media.

The “mensalão” or “big monthly allowance” was a vote-buying scandal uncovered in 2005, two years into President Lula da Silva’s first government. Top Workers’ Party officials were accused of paying a monthly allowance of allegedly 30,000 Reais (equivalent to USD 12,000 at the time) to a number of federal deputies in return for pro-government votes in the Chamber of Deputies. Further police investigations also found out that (part of) the money used by the Workers’ Party in this scheme was of illegal origin.<sup>84</sup> The overall scandal threatened to bring down Lula da Silva’s government and resulted in the resignation and prosecution of several Workers’ Party members. In the Chamber of Deputies, 3 deputies implicated in this scandal were sacked, while 4 deputies resigned to avoid expulsion and 12 deputies were subject to criminal investigations for the crimes of passive corruption, gang formation and money laundering.

The “bloodsuckers’ scandal”, on the other hand, was uncovered in 2006 and consisted

<sup>81</sup> As of January 2010, for instance, the deputy Neudo Campos from the state of Roraima held the record number of 21 lawsuits in the SFC.

<sup>82</sup> According to Freedom House the Brazilian media gives broad and accurate coverage of corruption at the federal level, but less for smaller states and municipalities, as local media outlets are often owned or controlled by politicians (Countries at the Crossroads 2010, Freedom House).

<sup>83</sup> This conclusion is reinforced by the results found by the municipal audits conducted by the Brazilian Court of Accounts (“Controladoria Geral da União”) as part of an anti-corruption program started in 2003. Having checked the accounts of more than a quarter of the country’s 5,564 municipalities over the last 7 years, this Court has detected irregularities in most of them and highly visible evidence of corruption in 20% of the audited municipalities (see <http://www.cgu.gov.br/sorteios/index1.asp> and *Veja*, ed. 25 Feb. 2009).

<sup>84</sup> Police investigations revealed that at least 50 million Reais reached the Workers’ Party or allied parties’ funds through illegal means and resulted either from kickbacks from private companies favoured in public contracts and from corruption schemes controlled by party officials in state-owned companies (*Veja*, ed. 30 Jan. 2008 and 17 Mar. 2010; *Isto É*, ed. 27 Feb. 2010).

of a major procurement fraud for the provision of health equipment across the country. Several federal deputies were implicated in the approval of federal transfers to selected municipalities where, in articulation with local health officials and fictional companies, the money was used for the purchase of over-invoiced ambulances through arranged bids. According to the Federal Inspector General Office, as reported by Folha de São Paulo on 9th May 2008, approximately 1,500 ambulances were purchased at inflated prices between 2001 and 2006 through this fraudulent scheme, causing an estimated overall loss of 25 million Reais (approximately USD 11.5 million at 2006 prices). As a result of this scandal, 70 federal deputies were prosecuted for crimes against the public administration, fraudulent public bidding, gang formation and money laundering.

Besides these two major scandals, other cases detected in this period included electoral crimes (committed during the municipal elections of 2004, since crimes related to the 2006 elections are excluded from my analysis as explained above), active and passive corruption, crimes of tax evasion, influence peddling and crimes of extortion, crimes of enslavement and environmental crimes.

In total, I observe that new lawsuits were filed against 101 deputies for crimes committed and detected during the 2003-2007 legislative term. The vast majority of the crimes detected (roughly 80%) were directly related to the deputies' political functions. In the terminology used in the previous chapter they can be classified as crimes of a "public nature".

This total figure is figure is a close approximation to the number of crimes committed and detected during this period since most of the 101 deputies prosecuted appeared to be involved in a single offence between 2003 and 2007. In some cases, however, a deputy's involvement in a single scandal can originate several lawsuits. For example, many deputies implied in the "mensalão" scandal were charged simultaneously for crimes of active or passive corruption, money laundering and embezzlement. Since the quality of the judicial information available is not uniform across all deputies in office between 2003 and 2007,<sup>85</sup> I have opted to focus on whether or not the deputies were prosecuted for crimes committed during this period rather than on the exact number of lawsuits filed against them.

**53rd Term (2007-2011)** The SFC current records together with the information available in "Projeto Excelências" by Transparência Brasil show that the amount of new lawsuits filed against federal deputies for crimes committed since 2007 is considerably smaller than in the preceding period.

During the 53rd term, the media coverage of corruption in the Chamber of Deputies was mostly dominated by accusations of embezzlement against several deputies in consequence of irregular expenses claims. Federal deputies can claim back up to 15,000 Reais

<sup>85</sup> For many of the deputies who were not re-elected in 2006 I observed whether or not they were involved in any crime and prosecuted during the period but I have no detail on the precise number of charges brought against them.

every month for expenses incurred as a consequence of their political activities. However, investigations by the journalists from “Folha de São Paulo” found out that several deputies had been regularly using this facility to claim back money for purely private expenses.<sup>86</sup><sup>87</sup> As of February 2010, a total of 7 deputies have been identified and criminally investigated for the crime of embezzlement. The debate and public outrage over these cases of irregular use of public monies urged the Chamber of Deputies to publish on its webpage, since April 2009, details of all the expenses claimed by the deputies – including description of the good/service purchased, seller, date and the transaction's fiscal number - as part of an innovative policy of transparency.

Apart from these, the SFC's records and the information available from Transparência Brasil also show that new lawsuits were filed against deputies for electoral crimes related to the municipal elections of 2008 (5 in total, as of February 2010), targeted budgetary amendments and federal transfers (6 deputies) and pay-roll frauds such as “ghost” public employees<sup>88</sup> or illegal accumulation of public benefits (5 deputies).

The remaining cases listed as of February 2010 refer to offences not directly related to the deputies' political activities and include environmental crimes (2 deputies), influence peddling (2 deputies), tax fraud (1 deputy) and attempted homicide (1 deputy). These cases, which in the terminology of the previous chapter can be classified as of a “private nature”, represent approximately 20% of the total number of offences detected in the current term.

In total, adding together crimes directly related with the deputies' political duties and crimes of a private nature, I am able to identify as of February 2010 a total of 29 federal deputies under investigation or accused of offences committed since 2007. As compared to the 101 cases registered in the 52nd term (2003-2007) this figure represents a decrease of more than 70% in the number of deputies prosecuted between these two periods. This result is compatible with the theoretical predictions from section 3.3 that suggest that the information dissemination project might have had a positive impact on the deputies' criminal behaviour after 2007 (meaning less propensity to crime) due both to selection and incentive effects.

Although the data available does not allow for a clear quantification and separation of the latter effects, the descriptive statistics in Table 3.1 do suggest that, as measured by the observable criminal record at the time of election, the pool of 513 deputies elected

<sup>86</sup> As reported by the news, there were cases of deputies claiming back expenses to pay for private maids, security services for their own properties, or their own electoral campaigns.

<sup>87</sup> An associated scandal that made the front page news in this period was related to the misuse made of the travel allowance by the federal deputies. The Chamber gives every deputy a weekly travel allowance to cover travel expenses from their states of origin to Brasilia. Investigations by the news website “Congresso em Foco” found out that roughly half of the Chamber had used their travel allowance to offer flights – mainly to international destinations - to friends and relatives. The competent authorities failed to classify the act as a crime based on the fact that the existing legislation was not clear enough about the correct use for the deputies' travel quota. However, the public debate generated by the case forced the Chamber's Ethics Commission to start a major review of the regulations regarding the matter.

<sup>88</sup> “No show” or “ghost” public employees are a known fraudulent practice in Brazil used by politicians to claim and pocket extra money or to distribute resources across their networks (Fleischer, 1997).

in 2006 does seem to be of lower criminal propensity than the ones elected in 2002, in line with the expected “selection effect” discussed in section 3.3. Everything else being equal, it is reasonable to expect a reduction in the level of criminality in the Chamber of Deputies after 2007.

In effect, the existence of previous criminal charges (at the time of election) seems to be a powerful determinant of the probability of engaging in criminal behaviour during the 53rd term. In Table 3.2 I present the estimation results for the probability of being prosecuted for a crime committed after 2007 term based on the following (reduced-form) linear probability model:

$$Crime_i = \alpha + \beta Charges_i + Others_i \delta + \mu_i \quad (3.4)$$

where  $Crime_i$  is an indicator variable that takes value 1 if deputy  $i$  is prosecuted for a crime committed in the 53rd term, after 2007, and zero otherwise.  $Charges_i$  is an indicator variable that takes value 1 if deputy  $i$  has a criminal record (previous charges) at the time of election, in 2006, and  $Others_i$  includes several deputy-level characteristics as presented in Table 3.1. The model is estimated from the cross-section of 513 deputies elected in 2006, making use of the variation in detected criminal behaviour from 2007 onwards (more exactly, the fact that 29 out of the 513 deputies in office during the 53rd term have been prosecuted for crimes committed after 2007, as described above). The results in Table 3.2 clearly suggest that, among the several candidate-level variables considered, the existence of previous criminal charges is the only variable significantly associated with the deputies’ probability of committing a crime during the new term.<sup>89</sup>

To gain a further insight about the possible effects of the information dissemination project, in the next sub-section I follow the framework proposed in section 3.3 and focus on the variation in the number of crimes detected between the terms under analysis across two different groups of deputies: the group of incumbents re-elected and the group of challengers elected in 2006 (as compared to the deputies that stepped down from their seats at the end of the 52nd legislature).

### Crime by Politicians’ Status: Incumbents vs Challengers

**Incumbents** 282 incumbents were re-elected for a new term in the Chamber of Deputies in October 2006. Among these deputies 29 had been charged during the 52nd term for crimes committed in that legislative period (2003-2007).

By tracking their judicial records in the SFC and the information available from Transparência Brasil since 2007 I observe that new lawsuits were brought against 15 deputies in this group for crimes committed since 2007. In comparison to the 29 deputies prosecuted in the previous period, this figure represents a reduction of almost 50% in the

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<sup>89</sup>Using, alternatively, a probit or a logit regression model does not affect this conclusion since statistical significance of the variables considered remains the same.

number of serving deputies involved in crimes between the two legislative periods under analysis.

In the framework of the model in section 3.3 this reduction can be interpreted as capturing the disciplining effect of Transparéncia Brasil's information dissemination project on the deputies' criminal behaviour. Since the 282 incumbent deputies were re-elected to office after the release of Transparéncia Brasil's information project, the disciplining effect captured in the reduction in the number of crimes and prosecutions should be considered as a "treatment on the treated" effect of the information project on the incumbents' behaviour.

**Challengers** 231 challengers were elected to office in October 2006. By tracking their current judicial records in the SFC and using information available from Transparéncia Brasil I observe that a total of 14 deputies in this group have been prosecuted for crimes committed since 2007. Since these deputies did not serve in the Chamber of Deputies during the 52nd legislative period, between 2003 and 2007, the analogous measure of prosecutions is not available for that period. Instead, I observe that during the 52nd legislative period 72 out of the 231 deputies who were not re-elected for a new term in 2006 (or did not even stand for re-election) were prosecuted for crimes committed during their term in office.<sup>90</sup> Thus, by comparing the criminal records of these two groups of deputies - challengers elected in 2006 and (ex-)deputies who stepped down at the end of the 52nd legislative term - I observe that there has been a reduction of over 80% in the number of serving deputies involved in crimes between the two terms under analysis.

As presented in the theoretical framework in section 3.3 this reduction is likely to capture both the disciplining and the selection effect of the Transparéncia Brasil's information project on the deputies' criminal behaviour.

The disciplining effect of the Transparéncia Brasil's project works for incumbents and challengers elected in 2006 in a similar way. By keeping an updated record of every deputy's criminal offences the Transparéncia Brasil's project allows for a tighter public scrutiny of the deputies' actions and misdeeds. This is likely to work as a disciplining device for the whole group of deputies in office and hence contribute for a reduction in the number of crimes committed.

The selection effect of the Transparéncia Brasil project, on the other hand, is associated with the compositional change in the pool of candidates elected in October 2006 after the information about the candidates' criminal records is released. In the framework presented in section 3.3 the information revelation mechanism allows voters to throw the most corrupt candidates out of office and replace them by politicians with a lower propensity to crime. Thus, everything else being equal this compositional change will result in a decrease in the number of crimes committed by serving politicians. The results pre-

<sup>90</sup>Notice that, as mentioned above, this figure is a lower bound for the total number of prosecutions effectively made between 2003 and 2007. This is because my information about the criminal records of the deputies who did not stand for re-election in 2006 is limited.

sented in the previous chapter showed that the Transparéncia Brasil information project allowed the voters to identify and throw out of office several deputies with a criminal record - more precisely, 92 out of the 165 incumbents listed by Transparéncia Brasil with criminal charges did not manage to get re-elected in October 2006. As explained before, Transparéncia Brasil did not provide any information about the challengers' criminal records in 2006.<sup>91</sup> As a result, the information available to the electorate about the challengers standing for election in 2006 was, on average, not significantly better than in previous elections. However, as discussed above, the descriptive statistics in Table 3.1 are suggestive of a compositional gain in the pool of candidates elected in 2006 in terms of propensity to crime: the number of elected deputies with a criminal record at the beginning of the term is smaller in 2007 than in 2003. The fact that the reduction in the number of deputies prosecuted between the terms under analysis was clearly stronger for the group of challengers (as compared to the (ex-)deputies they replaced in 2007) than within the group of incumbents re-elected provides further support to this compositional gain hypothesis. It suggests that the selection effect associated with the Transparéncia Brasil project might, indeed, have been positive, in the direction proposed in section 3.3, hence reinforcing the disciplining effect of Transparéncia Brasil's project on the deputies' criminal behaviour.

### 3.5 Concluding Remarks

The last federal elections, in 2006, represent a landmark in the way the Internet was used by grassroots' organizations and by the average voter to fight political corruption in the Chamber of Deputies and prevent the re-election of incumbents with criminal records. Equipped with objective information about the incumbents' criminal history, the average voter showed at the polls not to be indifferent to political corruption: the majority of candidates with a criminal record were not re-elected in 2006 and, on the whole, they registered a significantly worse electoral performance as compared to previous elections and to the performance of their peers with a clean criminal record.

Since the last federal elections, the use of the Internet for information dissemination campaigns and for the promotion of transparency in politics has increased substantially. The amount of information available on each deputy's parliamentary activities and criminal offences has never been so large and, given the fast speed of Internet penetration in Brazil, so easily accessible to the average citizen.

In this paper I have provided a comparative analysis of the corruption scandals and consequent lawsuits filed against the members of the Brazilian Chamber of Deputies in the 52nd legislative term (2003-2007) and in the 53rd legislative term (since 2007). My aim was to understand whether the information dissemination project started by Transparéncia Brasil in 2006 might have had any visible impact on the deputies' criminal behaviour in the current legislative term. In theory, there are two main reasons why

<sup>91</sup> There were some exceptions though, since a few selected challengers with a known record of political corruption also had their profiles listed by the Transparéncia Brasil's project.

one might expect this to happen. First, since the information project helped voters to remove from office (some of) the most corrupt deputies in the 2006 election the deputies in office after 2007 are likely to be, on average, of higher quality (i.e. more honest) than in the previous period. Second, the greater availability of information about the deputies' misdeeds might work as a discipline device during the term: for fear of the electoral punishment consequent of a (known) offence the deputies are less likely to engage in criminal activity.

My survey of the deputies' criminal records showed that the number of deputies prosecuted for crimes committed during their term in office has dropped by more than 70% between the two legislative periods under analysis. The reduction in the number of deputies prosecuted has happened not only within the group of incumbents re-elected, but also, and especially, among the challengers elected in 2006 as compared to the (ex-)deputies whose seats they took over in 2007. Overall, the evidence presented in this chapter strongly suggests that greater access to information on the politicians' actions and profile might have a powerful impact not only on the political selection but also on the politicians' behaviour while in office.

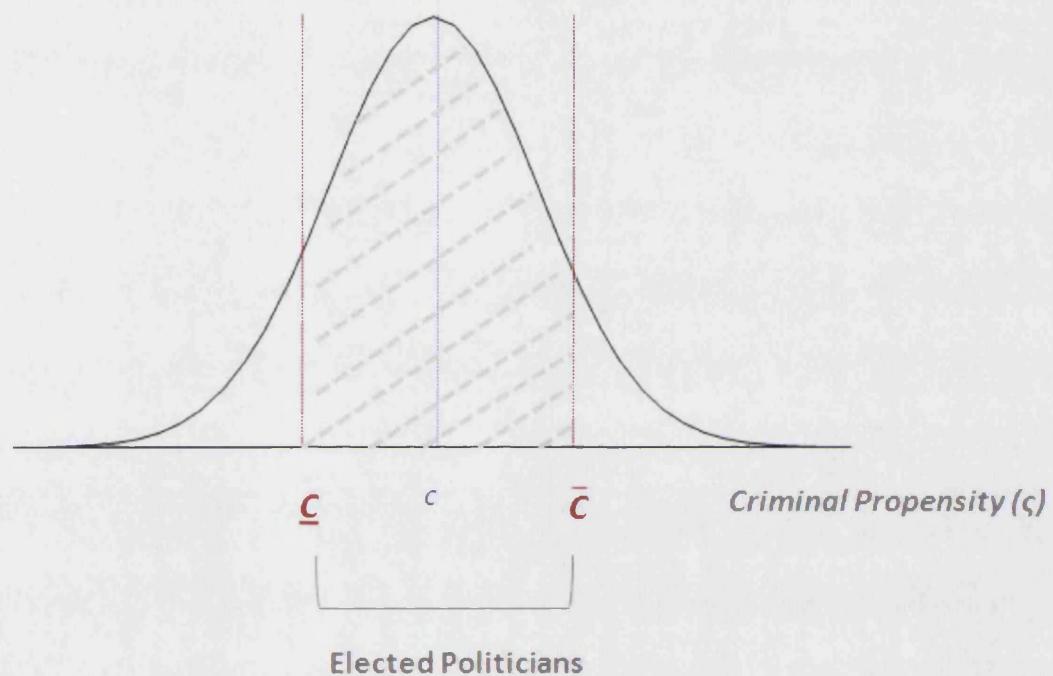
As a final remark, it is worth pointing out that political corruption is far from being a preserve of the federal government. In fact, the federal deputies' criminal records offer clear evidence that political corruption is also abundant in state and municipal governments. Therefore, following the promising evidence presented in this paper, it would be important to extend the actual policy of transparency and information dissemination based on objective facts - be they either criminal records in the Courts, expenses claims or details on procurement contracts - that apply to the Chamber of Deputies to different government bodies. This could contribute to make the public scrutiny of elected politicians more homogeneous across different levels of government and different regions of the country and thus extend the incentives for less criminal activity to a larger proportion of the political class.<sup>92</sup>

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<sup>92</sup>Transparéncia Brasil has been working together with a few state and municipal bodies for this purpose. As a result, it is for instance possible to obtain online information on all the procurement contracts made by the 293 municipalities from the state of Santa Catarina since 1997, including details about negotiated prices and competition.

### 3.6 Figures and Tables

**Figure 3.1:** Distribution of Criminal Propensities - Candidates Elected



**Figure 3.2:** Distribution of Criminal Propensities - Change in Candidates Elected

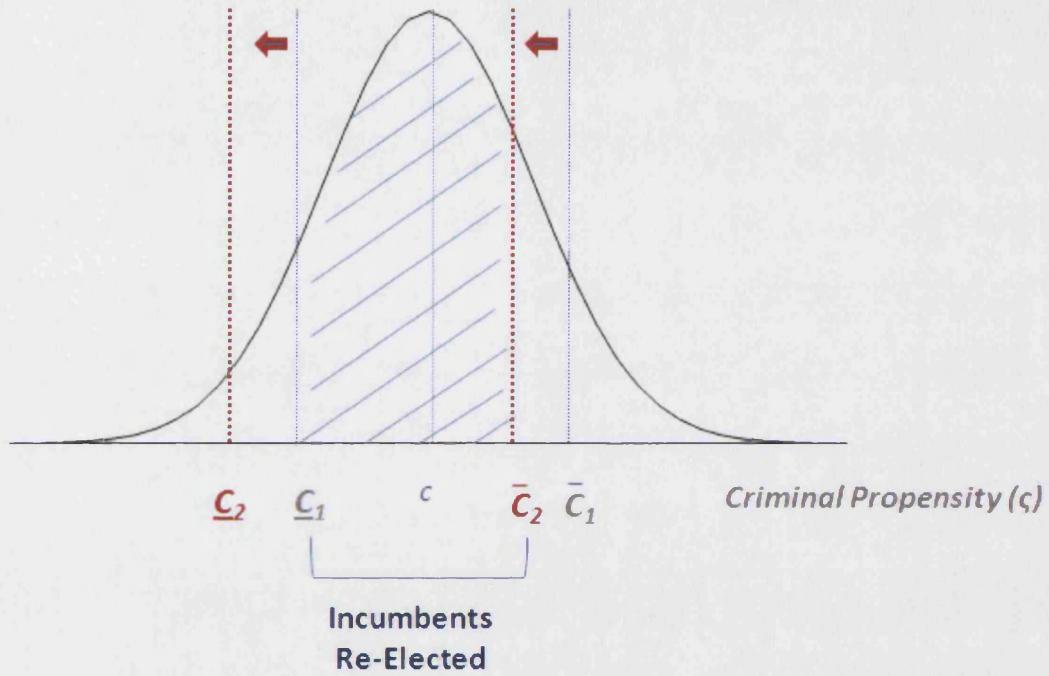


Table 3.1: Differences Between Groups of Deputies (2007-2010)

Descriptive Statistics (as of beginning of term)	52 <sup>nd</sup> Legislative period	53 <sup>rd</sup> Legislative period	difference	s.e.
	(2003-2007)	(2007-2011)		
<b>Total of Deputies</b>	<b>513</b>	<b>513</b>	.	.
State vote-share (%)	2.9	2.9	0.02	0.16
Reelected (%)	58.6	55.0	3.59	3.09
<i>With criminal record at time of election</i>	<i>136<sup>1</sup></i>	<i>125</i>	.	.
Female (%)	7.1	6.4	0.74	1.96
FDs with university education (%)	91.0	91.4	-0.37	2.23
Age	50.1	51.3	-1.20*	0.65
Number of mandates	1.4	1.4	-0.10	0.09
Owners of media licenses (%)	11.2	13.2	-1.97	2.05
Campaign contributions ('000 BRL, constant prices 2002)	224.9	365.5	-140.54***	17.02
Members of DEM (%)	16.3	12.7	4.67*	2.20
Members of PMDB (%)	14.6	17.3	-2.76	2.29
Members of PSDB (%)	13.8	12.9	0.95	2.12
Members of PT (%)	17.7	16.2	1.52	2.35

Source: TSE, Camara dos Deputados, STF and Transparencia Brasil

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

<sup>1</sup> This figure is a lower-bound as I do not have information about previous criminal charges (this is, before the 2002 election) for 119 out of the 513 deputies elected in 2002.

**Table 3.2:** Probability of Being Prosecuted (after 2007)

<i>Dependent Variable</i>	
<b>1(Crime after 2007)</b>	<b>(1)</b>
Vote-share in 2006 election	0.003 (0.005)
1(criminal record at time of election)	0.079** (0.031)
1 (female)	0.861 (1.171)
1 (university)	-0.893 (1.300)
Age in 2006	0.001 (0.001)
1(media concession)	0.014 (0.037)
1 (incumbent re-elected)	0.015 (0.030)
Number of terms served	-0.014 (0.010)
Campaign contributions	0.000 (0.000)
<b>State and Party controls</b>	<b>Yes</b>
Observations	513
R-squared	0.12

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1; Robust standard errors in parentheses

Results estimated from the cross-section of 513 deputies elected in 2006. The dependent variable is the dummy variable that takes the value 1 if the deputy is prosecuted for a crime committed in or after 2007, and 0 otherwise.

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