The Political and Economic Effects of Brazilian Participatory Budgeting

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Abstract

What are the effects of Brazilian participatory budgeting? Do effects intensify or degrade over time? Existing scholarship answer these questions primarily using case studies. This paper proposes a panel data analysis of the durability and intensity of the political and fiscal effects of participatory budgeting in Brazilian cities. Focusing on 568 Brazilian cities that have a population greater than 50000 inhabitants over 6 electoral terms, between the years 1992 and 2012, it extends significantly the scope and understanding of previous empirical work. The paper uncovers limited effects on fiscal spending on health care and education, and larger effects on the probability of re-election of the party of the mayor. Differently from previous quantitative research the paper highlights how the effects of PB are mostly concentrated in its first four year of implementation. Participatory Budgeting effects, on average, degrade over-time.

1. Motivation

There are a number of arguments to support a more deliberative and participatory form of democracy. The World Bank[1] claims that many of the key components of participatory and deliberative[2] democracy are capable of inducing better local governance; deliberative and participatory procedures, they argue, can improve tax revenue and economic development, reduce corruption and in the long run may induce a more equitable distribution of income.

From an empirical standpoint there are many different experiences in local institutions, some along participatory lines, some deliberative, some combining both. Most of these experiments, like the Neighborhoods Councils in Italy or the New England town meeting, seem to be incapable of maintaining a high level of participation in the long run. However, in the 1990s some Brazilian cities began to implement a new form of budgeting based on participation that, in some instances, has been capable of inducing and sustaining high levels of participation. Around 300 Brazilian municipalities with a population larger than 50000 initiated a participatory budgeting (PB) process between 1989 and 2012, some of these processes failed in one or two years, some other are still implemented (e.g, Porto Alegre). In 2012, overall, 114 cities were implementing some form of participatory budgeting. This characterizes the Brazilian experience as one of the most successful and long lasting experiment of municipal participatory democracy yet developed.

[1]See the Empowerment project and the Participation and Civic Engagement Projects at http://web.worldbank.org.
[2] The most recent experiments of participatory institutions have some form of deliberative assembly in them; nonetheless it is important to maintain the distinction between these two types of institutions because each of them can exists in isolation. Pure participatory institutions are adopted in Italy and Switzerland (i.e. the referendum and the popular initiative law), pure experiments of deliberation are more common (e.g. Deliberation Day). For a very interesting discussion on the differences between deliberation and participation see Cohen and Fung (2004).

The literature on participatory budgeting is mostly composed by case studies. The majority of these case studies have been conducted in Porto Alegre, a city of 1.4 million of inhabitants in the southern state of Rio Grande do Sul. There are only a few large N studies (Marquetti 2007, World Bank report 2008, Gonçalves 2014, Toucton and Wampler 2014) that empirically investigate the effects of participatory budgeting on public spending, poverty and infant mortality rate.

In this paper I propose a comprehensive analysis that investigates both the economic and the political effects of participatory budgeting. The analysis is based on a novel panel dataset covering all the Brazilian cities with a population larger than 50000 inhabitants from 1989 to 2012. The statistical analysis, due to the low quality of data before 1992, centers on the subsample of processes implemented between 1993 and 2012 and shows that participatory budgeting alters slightly the structure of public expenditures. Participatory budgeting doesn't seem to have any effect on the revenues contradicting some of the theoretical, anecdotal and experimental evidence proposed by many researchers (e.g., Rhodes 2000, Shah and Wagle 2003, Buerman and Amelina 2014). However the analysis shows robust evidence that adopting participatory budgeting has a positive effect on the probability of reelection of the party of the mayor. Most interestingly the impact of PB on public spending and political competition is driven by its first four years of implementation contradicting some of the existing knowledge about the long-run effects of PB (Gonçalves 2014, Toucton and Wampler 2014).

2. What is Participatory Budgeting?

According to World Bank, participatory budgeting is a process through which citizens present their demands and priorities for civic improvement, and influence the budget allocations made by their municipalities through discussions and negotiations[3]. This mechanism has the peculiar characteristic of establishing a link between the technical formulation of the budget and the participatory process. It complements representative institutions rather than substituting for them. Usually the municipal budget is decided by a handful of bureaucrats, Participatory budgeting is an attempt to open this process to the citizenship.

Porto Alegre, as I mentioned before, is considered one of the most successful examples of participatory budgeting. The participatory procedure In Porto Alegre has been refined over the past 26 years. In Porto Alegre the budget plan is developed over a period of 11 months through a series of meetings in three different levels: the micro-local, the district (17 regions[4] in which the city is divided) and city-wide levels.

Meetings are self-organized at the micro-level of the street, the apartment block, and the neighborhood throughout the year. On the one hand many[5] describe these meetings as similar to the ones that are promoted in U.S. cities by concerned citizens, neighborhood association and NGOs to organize a community around a specific issue of interest (beautification projects, revitalization projects, crime prevention etc.). On the other hand the participatory budgeting process transforms the effectiveness of these meetings and their potential impact. The proposals

[3] World Bank's *Empowerment Case Studies: Participatory Budgeting in Brazil* available at http://siteresources.worldbank.org/INTEMPOWERMENT/Resources/14657_Partic-Budg-Brazil-web.pdf

[4]The number of regions was changed in 2007, before there were only 16.

[5] Among others see the description made by Gret, M. and Sintomer, Y. (2005).

that are generated at the micro-level have a real chance to be implemented, and this, according to many observers[6], constitutes a powerful incentive to participation.

At the district level the process begins in March when the plenary assemblies are held. There are thematic and regional assemblies. In these assemblies participants have to register and declare to which neighborhood group they belongs. The assemblies range from 200 participants to more than a 1000 depending on the thematic or the district. The meetings are managed by municipal civil servants that enforce strict rules of discussion (e.g. each speaker can talk a maximum of 3 minutes). Usually the speakers represent a residents' groups or associations. The number of people that participates in the plenary assembly dictates the number of delegates that can be elected to the District Forum. Each residents' group will appoint a number of delegates that is proportional to the number of people that are registered under the group's name. The model of Porto Allegre mediates participation through group affiliation. Individual participants with no group affiliation have less ability to influence the process. In other cities (e.g., Canoas), instead, the delegates are directly elected in the plenary assembly. Therefore, it is very important for the success of a group's objective that the highest number of people shows up at the first district/thematic plenary meeting. The plenary assemblies have two additional main functions: electing the representatives in the participatory budgeting Council (two representatives and two substitutes) and ranking the neighborhood priorities.

At the city level the main organ is the Participatory Budget Council (Conselho do Orçamento Participativo - COP), consisting of delegates elected by the 17 districts and by the six thematic assemblies. This institution is the site of the dialogue between the popular movement and the city administration. It meets once or twice a week during the PB process. It defines the criteria for

[6] Among others see the description made by Gret, M. and Sintomer, Y. (2005).

resource allocation, defends the priorities of regions and themes, discusses revenues and expenditures, drafts the detailed Investment Plan, and votes on the budget proposal presented by the executive. In Porto Alegre three criteria determine the budget allocation for each of the 17 regions of the city – the priorities decided by the COP, the existing levels of provision in terms of infrastructure and services, and the population. To them three logics are applied: a majority-democratic logic, a technical logic, and a redistributive logic. Each regional popular assembly (FROP) selects its service priorities. The executive assesses the technical viability of projects. The municipality produces an index of existing levels of provisions of services and infrastructures in each region. During this process the GPO (Gabinete de Programação Orçamentária, formerly known as GAPLAN, Gabinete de Planejamento), a technical office specifically created, is in charge of translating the citizens' demands into technically and economically viable municipal projects. This participatory procedure has been refined over 25 years of operation. Each year the COP councilors evaluate the performance of the procedure and vote changes and improvements.

A World Bank case study of Porto Alegre[7] points out that between 1989 and 1996, the number of households with access to water services rose from 80% to 98%; the percentage of the population served by the municipal sewage system rose from 46% to 85%; the number of children enrolled in public schools doubled; in the poorer neighborhoods, 30 kilometers of roads were paved annually since 1989. According to the authors since transparency improves the motivation to pay taxes, revenue increased by nearly 50% (budget resources for investment only went up from US$ 54m in 1992 to US$ 70m in 1996). Due to these results PB has been declared

[7] Shah, P. & Wagle, S. (2003).

one of the international local government's "best practices"[8] at the UN Habitat conference in 1996.

The incredible success of participatory budgeting in Porto Alegre seems to be limited to the first 13 years of its implementation. During these years the process has experienced an almost constant increase in the number of participants; from the initial 900 to more than 18000 in 2001. In 2002 after a change in the rules governing the process[9], participation has for the first time begun to decline. Additionally, according to some researchers, (Baierle 2002, 2007, Chavez 2006) the process has been experiencing a structural crisis exacerbated by the loss of the leftish coalition in 2004. The new city governments have been supporting the process only on paper. Delays, and lack of information are plaguing the procedure. The participants often receive the investments plan a few days before the discussion eliminating the possibility of real deliberation.

Changes in the organizational rules lead toward the professionalization of the representatives of the participatory budgeting Council. In order to become a candidate a citizen is now required to have participated various years, and council members can now be reelected with no limitation.

The most recent World Bank case study on Porto Alegre (World Bank 2008) shows, among many other problematic symptoms, how the share of executed investments has dropped from 90% to less than 10% in the previous 7 years. According to the ONG Cidade, that has been monitoring the process since its beginning, the government of the city utilizes this chronic delay in the implementation of the investments to alter the priorities decided by the population. On paper the citizens decide 20% of the investments of the city, but in reality it's difficult to understand the amount of investments that will be implemented.

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[8] http://www.bestpractices.org

[9] The two rounds of discussions have been substituted by a single plenary assembly. The change has decreased the amount of time dedicated to the general discussion. Most assemblies now only focus on the elections of the representatives of the Counsel of participatory budgeting.

These recent developments are highlighting the fragility of the participatory process, how it strongly depends on the support of the governing coalition and the constant risk that the process becomes a large and well organize form of clientelism.

3. Other Brazilian PB experiences

In the past 26 years more than 300 Brazilian cities have implemented some form of PB. The current literature has a number of definitions of the participatory process that are vague, like the one from the World Bank I presented in the introduction, and cannot be effectively used to draw lines between types of PB due to the lack of city level data. The literature doesn't have a detailed map of the differences among the various institutional designs for all Brazil. Currently the PB cases are identified through self-reporting and surveys. The variance of the institutional design is unexplored and the effects of different design are unknown.

In a recent paper Wampler (Wampler 2009) suggests that there could be three main different types of participatory budgeting. Those that are implemented by policy entrepreneur, those that are implemented by policy advocates and those that are implemented by pro-forma adopters. Wampler's paper systematize the emerging consensus among academics that a number of the PB processes adopted in Brazil are "*para inglês ver"*[10] a common Portuguese phrase that signifies, more or less, a window dressing process, a facade (e.g. Wampler 2007). In these cases, the percentage of investment really decided by the population is quite small, effective participation is restricted to an elite of community leaders that are often coopted by the government of the city and the whole process is highly controlled by the executive of the city.

[10] "So that the English can see". The origin of this expression is potentially related to a law against slavery passed by the Brazilian Regency Government in 1831 under the pressure of the English Crown. The law was not applied for twenty years.

Therefore it is important to keep in mind that the results presented in this article are due to the average effect of significantly different participatory governance innovations. Thus the results should not be indicative of the effect of best practices, and instead should be considered as the average results that can be expected when considering 'good' and 'bad' PB processes together.

4. The Quantitative Literature on Participatory Budgeting

As I mentioned before there are only a handful of statistical analysis investigating the effects of PB. The majority of researches are based on anecdotal evidence based on one or few more case studies. Teixeira (2002), using the dataset collected by Ribeiro and De Grazia (2003), analyzes the outcomes of PB among small rural municipalities. She identifies a substantial number of cases in which PB has been a failure and has been abandoned. She points out three main factors that sustain PB: the importance of a strong network of civil society organizations, the political will of the ruling party, and, finally, the human and economic resources available to the municipality.

Avritzer and Wampler (2005), building upon the research of Torres Ribeiro and Grazia (2003) have constructed a census of all the PB experiences from 1989 till 2004. They use this dataset to explain the adoption of PB in Brazil. They identify five main factors: the presence of a Mayor affiliated to the Worker Party (Partido dos Trabalhadores), the size of the municipality, its location, the level of development measured through the HDI index, and finally the civil society-political society relationships. They don't provide a statistical analysis, but they show a number of very interesting relationships using tables and simple descriptive statistics. Wampler (2007),

expanding the previous analysis, proposes a static probit model on all the 200 cities that have a population greater than 100,000 individuals. The model points out that the emergence of PB is significantly correlated with the presence of a PT majority. More interestingly, excluding from the sample the cases in which PT had a majority, the analysis leads to the surprising result that PB was adopted more often in cities in which the left was weak and conservative forces held power. Wampler concludes that these conservative municipal governments "were seeking to gain governing and elections benefits from their association with a program that is known for its emphasis on social justice, transparency, and direct participation".

Marquetti and Bêrni (2006) propose the first systematic study of the fiscal effects of participatory budgeting. Again building upon the research of Ribeiro Torres and Grazia they investigate all the 60 cities of the southern state of Rio Grande Do Sul with a population larger than 30000 inhabitants. They present two separate cross-sections, one for the period 1997-2000 the other for the period 2000-2004. They find that cities adopting PB tend to spend more in education, "culture, sport and leisure" (this is one of the aggregate entry of the Brazilian balance sheet) and housing. They also find an interesting interaction between the availability of resources and the effects of PB on overall public spending. Poor cities that adopt PB tend to spend less than those not adopting it. While, among the cities with more resources, those that adopt PB spend more resources than those that do not. They explain this phenomenon by claiming that PB forces the government to provide an optimal amount of public goods. In poor cities, they assume that citizens prefer to pay lower taxes and receive a smaller amount of public goods than what is usually offered. In larger cities, citizens prefer a larger amount. Given the size of the sample their results have to be considered with care.

Zamboni (2007) employs the Brazilian random audit system to compare random audit outcomes in cities implementing PB and cities not implementing PB finding mixed results. Timmons and Garfias (2015) employing again data from random audits shows that cities in which corruption was revealed have a higher chance of adopting PB. This study highlights that this city governments often perceive PB as an engagement strategy to signal a break with past practices and a new fresh start.

A World Bank study (WB 2008) using a difference in difference matching model covering the period 1990-2000 investigates the effect of participatory budgeting on poverty measure and fiscal revenues. The matching process constructs a synthetic control group that is most similar to the city adopting participatory budgeting. Additionally, the model controls for the effect of the share of votes obtained by the Worker Party to avoid that leftish redistributive politics confounds the effect of PB. Both propensity score and kernel matching technique are compared. The results show that participatory budgeting has an effect on various poverty reduction indexes, while it has no effects on fiscal revenues. Importantly the effect on poverty is driven by cities that have implemented the process for the entire 10 years, i.e. a really small subset of the sample.

Two recent papers on the effect of participatory budgeting, Gonçalves (2014) and Touchton and Wampler (2014) instead find significant impacts of PB on health-care spending and infant mortality rate. The first explore the entire galaxy of more than 5000 municipalities in Brazil between 1990 and 2004, the second one instead centers on cities with a population larger than 100000 inhabitants over the period 1989-2008. Outside of Brazil Olken (2008) investigates the impact of participatory meetings on the provision of public goods at the local level. The study is path-breaking for its innovative methodology, but it is difficult to apply its conclusions

to Bazilian PB due to extreme difference in the participatory procedures implemented by the researcher. Finally Buerman and Amelina 2014 present the results of an experimental study conducted in Russia that identifies a positive effect of PB on tax collection.

In this study I expand the previous empirical investigation on Brazilian PB in three ways, first I introduce city level fixed effects capturing city level heterogeneity and thus compensating for omitted city level variables.[11] Second I investigate the effect of participatory budgeting on the probability of reelection of the party of the mayor, something that has never been studied before. Third I employ an interaction term that allows to distinguish between the effect of a new PB process and the effect of a PB process that has been inherited from the previous term. The latter innovation is particular important to understand the difference between short and long term effects of PB.

5. The dataset

One of the main contributions of this research is the Brazilian Participatory Budgeting Census (Spada 2012).[12] This novel dataset identifies instances of participatory budgeting from 1989 to 2012 in medium to large Brazilian cities, is geo-located and can easily integrate a number of existing datasets that contain detailed information on economic, social, political and demographic variables for every municipality in Brazil. [13] The dataset is based on two separate

[11] Using regional level fixed effects as in Touchton and Wampler (2014) is a less conservative approach that might overestimate the effect of PB.

[12] The census is available on participedia (licensed under **CC BY-NC-SA 3.0**).

[13] There are three main reasons to limit the study to medium to large cities. First, the qualitative literature (Texeira 2002) indicates that the institutional variance of PB is smaller for medium and large cities. Second, small cities (defined by the Brazilian law as cities with fewer than 50,000 inhabitants) obey different rules in regard to the transparency of balance sheets in the time period considered (art. 63 Lei Complementar 101 2000). This contributes to a continued lower quality in the public finance data available for these cities. Third, a larger number of small cities emerge during the considered time period. The census contains the sample constituted by the union of

data collection efforts conducted in 2008 and 2012 that combine an online pre-screening of city websites with a telephonic survey. First research assistants scraped the internet for any available document and webpages about participatory budgeting in the target sample of cities. Then the potential candidates were surveyed telephonically. A city is coded as having adopted participatory budgeting only if the process respects the five criteria identified by Sintomer et al. (2008). The dataset builds upon previous data collection efforts by Torres Ribeiro and de Grazia (2003) and Wampler and Avritzer (2006). Currently this is the largest existing dataset on a municipal democratic innovation and offers the almost unique opportunity to investigate quantitatively the diffusion and impact of a democratic innovation for more than twenty years (from 1989 to 2012).

This essay integrates the Participatory Budgeting Census with information gathered from the Instituto de Pesquisa Econômica Aplicada (IPEA) and from various state level electoral tribunals (Tribunal Regional Electoral — TRE) that possess information on executive elections held before 1996.

Brazilian elections at the municipal level are held every four years, with the first municipal elections after a 20 year long dictatorship taking place in 1988.[14] The qualitative literature shows that participatory budgeting is a fairly stable process within each electoral period. In two of the case studies (Hortolandia (SP) and Itaúna (MG)) I conducted in 2009 the process had lasted three years (2004-2007) then was simplified (2008) and subsequently was abandoned at the beginning of the new electoral term. This is a common pattern for citywide PB

municipalities that achieved a population larger than 50,000 in 1992, 1997, 2000, 2004 and 2007. A total of 590 cities are present in the current census, this is just a minority of the ~5500 Brazilian municipalities, but it accounts for more than 60% of the Brazilian population. This paper presents tables and results using the most conservative subsample, the one comprised of only the 468 cities that had more than 50,000 inhabitants in 1992. The results shown in this study become even stronger with larger unbalanced samples. These results are available upon request.

[14] In 1985 only 201 cities elected their mayor.

processes, confirmed also by the literature of PB processes outside of Brazil (Lopes-Alves and Allegretti 2012). Thus the Census contains six time periods: 1989 to 1992, 1993 to 1996, 1997 to 2000, 2001 to 2004, 2005 to 2008 and 2009 to 2012.

The sample of cities investigated is composed of all the cities with a population of more than 50,000 inhabitants. The initial sample generated in 2008 cross-checked the previous data collection efforts conducted during the period 1989 to 2004 by other authors. The second census conducted in 2012 instead focused only on the period 2009 to 2012 and on new cities that had achieved 50,000 inhabitants and had not been investigated before. In 2008 568 cities were investigated, in 2012 the sample was expanded to 590.

This essay employs in its main statistical analysis only the subset of 468 cities that achieved 50,000 inhabitants in 1992 because this set of cities is stable, there are no cities created or merged within the time period analyzed with statistical methods.[15] But robustness checks have been conducted employing the entire 2008 and 2012 Census. For a detailed description of the sample and an investigation of the diffusion of PB in Brazil see Spada 2014.

1. Model specification and results

In this section we employ a simple linear model with fixed and time effects estimated adjusting the error for clustering at the state level to investigate the effects of PB. The model specifications can be represented by the following equation:

$$\mathrm{Y}_{i;t} = \alpha_i + POL_{i;t-1}\boldsymbol{\beta} + PB_{i;t}\#PB_{i;t-1}\boldsymbol{\gamma} + ECON_{i;t-1}\boldsymbol{\delta} \quad + \varepsilon \mathrm{POP}_{i;t} + PERIOD_t\boldsymbol{\eta} + \boldsymbol{\theta}_{i;t}$$

[15] When cities split or merge in a time period it is unclear how to properly attribute the effect of lagged city level independent variables.

Where POL is a matrix containing the political variables (victory of the PT, mayor's share of votes), $PB_{i;t}\#PB_{i;t-1}$ is a matrix that contains a dummy that assumes value 1 if the city is adopting a PB process in the previous 4 years, the same dummy lagged, and an interaction term between the two dummies[16], ECON is a matrix containing the two economic variables measuring fiscal autonomy (tax share of revenues) and financial viability (total expenditures over total revenues), POP is a vector containing population data, PERIOD is a matrix containing three period dummies, α_i is a fixed effect capturing city level heterogeneity. The city level fixed effects (α_i) should be capable to reduce the effect of any omitted variable bias. Introducing Brasil level time effects imposes common factors that might shape the entire country, such as the improvement of the economy, and the victory of the PT in federal elections. Adding, instead, state specific time effects reduces the significance of all the economic results, and strengthens the significance of the political results. Adding per capita gdp does not alter the results, but the reliability of such measure for small cities is unclear and that is why I prefer to include population, tax share of revenues and the financial viability index that are proxies for the state of the economy of a municipality.

Table 1 present the results of the effect of PB on the share of public spending devoted to healthcare, education and capital investments. Table 2 focuses on the effect of PB on the tax share of revenues and the effect of PB on the probability that the party of the mayor wins again

[16] These three dummies allow to analyze the effect of a new participatory budgeting and the effect of a process that carries over from the previous period.

the election.[17] Note that the result of the latter regression remain robust when employing a logit function (available upon request).

Table 1 shows that the implementation of participatory budgeting[18], after controlling for city level fixed effects, has no average significant impact on the share of the expenditures devoted to health and sanitation. This result becomes significant (Pvalue 0.044) when analyzing the entire sample of 590 cities in the Budget Census, and becomes strongly significant (Pvalue 0.008) if I exclude from the sample cities adopting PB in previous time periods (results available upon request). The latter implies a potential difference between the impact of new or re-adopted PB processes, versus continuing ones.

Column 2 and 3 confirm the intuition that the short run effect in cities adopting PB for the first time is different from the effect of continuing to adopt PB. PB has a positive short term effect that disappears overtime. While the interactions terms show interesting results, such results are not robust, and they become not significant if I exclude from the sample cities adopting PB for more than two time periods, i.e. this result is driven by the few cities that abandon PB after having implemented it for 3 or more time periods.

Overall these results complement the results that have been presented by Gonçalves (2014) and by Wampler and Touchton (2014) by highlighting that the change in healthcare share

[17] The use of a linear specification with a binary dependent variable, the so called linear probability model (LPM), is sometimes criticized. A LPM can lead to predictions outside the interval [0;1], generating "impossible" probabilities. Nonetheless the LPM gives good estimates of the coefficients near the center of the distribution of the regressors, it fails only to provide good estimates of extreme values of the regressors. When the objective is to estimate the effect of each regressor on the dependent variable, as in this study, the fact that some predicted values are outside the unit interval is of secondary importance (Wooldridge 15.2), and the LPM provides a series of advantages over nonlinear specification. The LPM requires a weaker set of assumptions than nonlinear models, and it allows a direct and simpler interpretation of the regressors, particularly when there are interaction terms. When dealing with Panel Data the LPM doesn't suffer of the incidental parameter problem (Wooldridge p. 484), and allows for proper treatment of individual heterogeneity using fixed effects, and it further allows correction for the presence of clustered errors.

[18] The first specification lumps together first time adoption, re-adoption and continuation of a PB process.

TABLE 1: THE EFFECTS OF PB ON HEALTH, EDUCATION AND CAPITAL INVESTMENTS SHARE OF TOTAL BUDGET EXPENDITURES

VARIABLES	(1) Health Share of Exp.	(2) Health Share of Exp.	(3) Health Share of Exp.	(4) Education Share of Exp.	(5) Education Share of Exp.	(6) Education Share of Exp.	(7) Capital Inv. Share of Exp.	(8) Capital Inv. Share of Exp.	(9) Capital Inv. Share of Exp.
PB (1 if PB implemented in the previous 4 years)	0.01	0.02**	0.01	-0.01**	-0.02**	-0.01**	-0.01	-0.01	-0.01
	(1.49)	(2.40)	(1.66)	(-2.53)	(-2.30)	(-2.16)	(-1.41)	(-1.67)	(-1.42)
LagPB (1 if PB implemented only in years -5 to -8)		0.02***	0.02**		-0.03***	-0.03***		0.03*	0.03*
		(2.98)	(2.06)		(-3.45)	(-4.02)		(1.89)	(1.81)
PB#LagPB (1 if PB implemented in the previous 8 years)		-0.03*	-0.03**		0.02	0.01		0.01	0.00
		(-2.03)	(-2.12)		(1.16)	(1.03)		(0.51)	(0.05)
LagPTwin (1 if Mayor belongs to the PT)			0.01			0.00			-0.00
			(1.14)			(0.04)			(-0.04)
Lag(Mayor's vote share)			0.03			0.03			0.08***
			(1.34)			(1.26)			(3.11)
Population			-0.00			-0.00			0.00
			(-0.56)			(-1.41)			(1.20)
Lag(Financial Viability)			0.00***			0.00***			0.00***
			(6.18)			(3.84)			(4.69)
Lag(Tax Share of Revenues)			-0.03			-0.16***			0.05
			(-0.73)			(-3.61)			(1.29)
City Fixed Effects	Included	Included	Included	Included	Included	Included	Included	Included	Included
Time dummies	Included	Included	Included	Included	Included	Included	Included	Included	Included
Constant	0.00	0.00	0.00	-0.00	-0.00	0.02	0.01	0.00	-0.04**
	(0.24)	(0.21)	(0.12)	(-0.15)	(-0.11)	(1.20)	(1.13)	(1.07)	(-2.75)
Observations	2,562	2,558	2,440	2,566	2,562	2,444	2,662	2,658	2,528
R-squared	0.78	0.78	0.78	0.80	0.80	0.81	0.37	0.38	0.39
Number of Groups	468	468	467	468	468	467	468	468	468

The sample contains the 468 cities with a population larger than 50000 inhabitants in 1992. Robust t-statistics in parentheses estimated assuming clustering at the state level. *** p<0.01, ** p<0.05, * p<0.1. The financial viability index is the ratio of expenditures over revenues.

of spending is mostly centered in the first four years of implementation of a PB process. It is possible that the most glaring problems of a city, health and sanitation (e.g., sewage system) are immediately tackled if PB is implemented.

Column 4, 5 and 6 of table 1 investigate the effects of PB on the share of spending devoted to education, they confirm the results shown by Gonçalves (2014) that PB has a small negative impact on education share of spending. The effect of the implementation of PB (column 4) is substantially identical to the effect of first time adoption (results available upon request).

The table additionally shows that the cities that abandon a PB process after 4 years have larger reductions in education spending than those that continue the process. Interestingly these results are robust to excluding from the sample cities adopting PB for more than two time periods, i.e. the sample that assumes that the second lag of PB is equal to zero. This results are consistent with the presence of a lock-in effect of PB on the pattern of the expenditures on education in its first four years. If PB is abandoned whatever change had been implemented on education carries over.

Column 7, 8 and 9 of Table 1 investigate the effect on the capital investment share of the budget and they reveal no significant effects. Altering the sample does not change this result.

Similarly, when we look at the tax share of revenues in Table 2 we find non-significant effect of the implementation of PB (column 1), and a short run negative effect that is then offset by a long run positive effect (column 2 and 3). These results are not robust to altering the sample

TABLE 2: THE EFFECTS OF PB ON TAX SHARE OF REVENUES, CONTINUITY OF THE PARTY IN GOVERNMENT

VARIABLES	(1) Tax Share of Revenues	(2) Tax Share of Revenues	(3) Tax Share of Revenues	(4) Continuity of the Party in Gov.	(5) Continuity of the Party in Gov.	(6) Continuity of the Party in Gov.
PB (1 if PB implemented in the previous 4 years)	-0.00*	-0.01*	-0.01**	0.13***	0.17***	0.10**
	(-1.72)	(-1.91)	(-2.69)	(4.49)	(4.22)	(2.54)
LagPB (1 if PB implemented only in years -5 to -8)		-0.01***	-0.01***		0.04	0.03
		(-3.10)	(-3.19)		(1.12)	(0.76)
PB#LagPB (1 if PB implemented in the previous 8 years)		0.01*	0.01**		-0.15***	-0.19***
		(1.97)	(2.19)		(-2.89)	(-3.60)
LagPTwin (1 if Mayor belongs to the PT)			-0.00			0.21***
			(-0.04)			(5.83)
Lag(Mayor's vote share)			0.01			0.44***
			(1.25)			(4.31)
Population			-0.00			-0.00
			(-0.54)			(-0.61)
Lag(Financial Viability)			-0.00			-0.00**
			(-0.27)			(-2.48)
Lag(Tax Share of Revenues)						0.28
						(1.20)
City Fixed Effects	Included	Included	Included	Included	Included	Included
Time dummies	Included	Included	Included	Included	Included	Included
Constant	0.12***	0.12***	0.12***	0.22***	0.22***	0.07
	(59.70)	(58.71)	(22.79)	(8.08)	(7.96)	(1.17)
Observations	2,685	2,681	2,551	2,804	2,800	2,644
R-squared	0.10	0.11	0.10	0.04	0.04	0.06
Number of Groups	468.00	468.00	468.00	468.00	468.00	468.00

The sample contains the 468 cities with a population larger than 50000 inhabitants in 1992. Robust t-statistics in parentheses estimated assuming clustering at the state level. *** p<0.01, ** p<0.05, * p<0.1. The financial viability index is the ratio of expenditures over revenues.

by restricting PB lags to be equal to zero, and by expanding the sample to the entire PB Census of 590 cities. The fact that PB has no impact on tax revenues in Brazil had already been detected by the 2008 World Bank study. However these results contrast a recent experiment conducted in Russia (Buerman and Amelina 2014). Thus it is possible that PB induced by international organization or external donors in countries that have a low state capacity might generate positive impact on tax collection. But it is also possible that the encouragement design employed by the researchers induced an effect beyond the application of PB on local officials and that such effect is the cause of the increase of tax collection.

When we look at column 4, 5 and 6 we find that PB has a significant positive impact on the probability that the party of the mayor wins again the elections at the end of the term. These results remain significant when considering the entire sample of the Census and when investigating first time adopters. Most interestingly the impact of PB is positive in the first time period (+10%), but continuing to adopt PB for a second time period generates a mixed effect. In column 5 the total effect remains positive (0.17+0.04-015=0.06), but in column 6, presenting the model that includes all the controls, it becomes negative (0.10+0.3-0.19=-0.06). This change is generated by the inclusion of the dummy that identifies the cities controlled by the Partidos dos Trabalhadores (results available upon request). Considering the full Census sample, or excluding from the sample cities implementing PB for more than 2 time periods, does not alter the results.

Very Preliminary Conclusions

Apart few exceptions, the current literature on the effects of participatory budgeting is based on case studies of best practices. This generates a bias towards positive outcomes in our general understanding of these phenomena. A typical example is the body of knowledge accumulated on Porto Alegre. According to many observers the quality of PB in Porto Alegre declined after 2008, consequently very little academic research has been conducted on Porto Alegre in subsequent years and thus we know very little about the current state of this process. Additionally many PB processes do not survive more than 4 years, and rarely researchers conduct case studies on abandoned processes generating a bias toward long lasting processes.

Quantitative analyses, similar to the one presented in this paper, overcome such problems by investigating a larger variety of successful and unsuccessful, short and long lasting practices. The obvious limit of these methodologies is that they identify only an average effect of PB processes that is often not as inspiring as the study of 'real utopias'. However, quantitative studies offer an important and fundamental reminder of the variety of these processes and contribute to the overall literature on participatory democracy by identifying potential baseline effects generated even by the worst process. They also remind us of the difficulty of 'transplanting' democratic processes and promote the generation of new and innovative solutions to increase the robustness of democratic innovations to varying local conditions.

This investigation is no exception, its results, ex-post, are not very surprising.[19] Anecdotal evidence has repeatedly shown that Brazilian cities adopting PB rarely provide a full account of the fate of approved projects beyond the first few years. No reliable data exists on the

[19] But in 2008 when I presented the first iteration of this multi-year project nobody believed that PB could have an impact on the probability of reelection of the mayor. Most Brazilian scholars I interviewed had localized information tracing back to 1996 the year in which in many cities controlled by PT mayors implementing PB lost the elections.

amount of funds allocated to PB, but my best educated guess on the basis of the survey included in the 2012 PB Census is that in medium to large cities, the most developed PB processes influence around 20% of the city investments[20], while the least developed ones as little as 1%. Overall thus the PB 'treatment' can only have a very small effect on public spending and mostly consists in a new type of participatory communication campaign that traces its best results and examples to the first years of implementation.

Thus it is not surprising that the analysis identifies the most robust effect of PB processes on the probability of reelection of the mayor and that on average such effect disappears over time. The first few years of PB are characterized by a novelty effect, by many promises, and sometimes by an attempt to break with the past. By solving a few initial glaring problems identified by the participants PB can generate significant return in terms of organizers' image. These 'wins' are constantly presented in the documentation of PB processes that I have encountered in many field projects and, in the short run, might shadow the fact that many other projects selected by the participants have not been implemented.

Thus in the short-run it is extremely difficult to discern window dressing PB processes from non-window dressing ones. PB processes are not audited and citizens rarely have the capacity to generate effective monitoring.

Additionally in many cases non-window dressing PB processes overtime get routinized, generating an oligarchy of participants. Sometimes the emergence of such oligarchy is almost inevitable due to the lack of capacity in civil society to provide year after year new community leaders. Sometimes communities themselves have an incentive to support the generation of these

[20] There are few cases in small cities in which PB is said to be allocating 100% of the investment. But it is important to keep in mind that already in medium cities with a population of around 50000 PB is often nicknamed calçamento participativo because most of the larger projects that can be implemented are mediated by federal and state procedures that carry specific conditions.

oligarchies because the PB process requires significant learning by doing and specialized skills. Less experienced community representatives are, in most cases, less effective in securing funds for community projects than experienced ones. Finally it is important to keep in mind that city governments rarely have incentive to counter these forces, and sometimes have incentives to promote cooptation of PB participants.

Thus the existing evidence points in the direction of an average deterioration of many PB processes over time and thus it is not surprising that the effect of PB might also change over time. While this anecdotal evidence is in line with the results of this paper, many scholars that specialize on best practices view the impact of participatory practices as increasing over time and some quantitative analyses support this view (Wampler & Touchton (2014), Gonçalves (2014)). However, after controlling for city specific fixed effects, i.e. and reducing the effect of some of the unobservables that might influence the impact of best practices, the statistical analysis I present shows the opposite. The impact of PB on healthcare spending, education spending and politics disappears or is reduced when PB is sustained more than 4 years. The latter result can help explaining the unusual pattern of adoption of participatory budgeting in Brazil that combines a high adoption rate with a similarly high abandonment rate (Spada 2014).

While it is easy to connect a small increase in health care and sanitation spending with an immediate reduction in infant mortality rate, the mechanisms that might drive the impact on elections are still unclear. In small cities, where the percentage of participants is a sizeable amount of the total voters, we can speculate that PB exerts influence directly on the participants and these affect the elections. In larger cities, like Porto Alegre with a population of more than 1.5 million and a number of participants that varies between 14000 and 20000 depending on the year, such explanation is not enough. It is theoretically possible that participants in PB are

community leaders, or influencers, and thus they represent, or influence, a larger amount of the population. But participating in any PB plenary assembly shows that only a subset of participants are community leaders.

Alternatively it is possible that PB allows city government to better control protest and deflect criticism. As a vereador of the Partidos dos Trabalhadores in Porto Allegre told me during a plenary assembly in 2009 “PB is a machine that captures community leaders, and when you are at the opposition it is almost impossible to severe the privileged relationship that PB generates between the government and the participants.” Thus an opposition party, a civil society organization or an individual might find extremely difficult to criticize the acts of city governments that are sanctioned by a participatory process engaging thousands of participants.

But all these mechanisms cannot explain why PB has an effect only in the short run. The most probable explanation is probably the simplest. PB generates, in its first years of implementation, a mechanisms that allows to collect the dreams and hopes of citizens and civil society groups. PB by implementing some of these dreams generates an extremely powerful message of responsiveness and accountability for the entire city. This message can be leveraged effectively to win reelection and establish the city government as innovative. However, overtime, the novelty of the process fades, and the cost of maintaining it inevitably increases. Window dressing processes generate delusions and discontent, while best practices generate increasing number of participants and thus inevitably accumulate overtime an increasing number of unfulfilled demands.

The current strategy to counter such inherent fragility of PB processes is to ‘manage the expectations of participants’ with various techniques, from limiting the scope of a PB process that effectively becomes a small grant program (European and North American Model), from

opening new channels of engagement to capture new and non-disillusioned participants (multi-channel PB), to ‘sharing the blame’ by invoking the fact that PB is a dynamic process and that participants are themselves responsible to improve it. But such solutions carry the risk of taming the most radical aspects of the process reducing its capacity to promote social justice.

I think, instead, that it might be more fruitful to go back to the drawing board strengthening the oversight capacity of PB processes, their Achilles’ heel, by incorporating the tenets and energy of the open government movement together with a stronger emphasis on participants’ capacity building. And maybe it has also come the time to grab the bull by the horns and begin advocating for the introduction of radical democracy within the political parties that currently control the fate of these participatory processes.

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