Betting on the Winner: The effect of local elections on corporate political activity outcomes

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#04/2016
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Version 1.0
February 2016

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©Rodrigo Bandeira-de-Mello. rodrigo.bandeira.mello@fgv.br
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The effect of local elections on corporate political activity outcomes

Rodrigo Bandeira-de-Mello*
FGV Sao Paulo Business School, Brazil
June 4, 2015

Abstract
How can managers successfully access political rents by way of corporate political strategies (CPA)? Existing research has suggested several endogenous factors that correlate with CPA outcomes. I offer a more robust solution to this problem. Drawing on insights from the perspective of CPA as exchanges between firms and political decision-makers, and from the special interest politics of political economy, I develop and test a causal mechanism that links local elections, legislative bargaining and access to political rents at the national level. I conducted a natural experiment using regression discontinuity design and propensity score matching in municipal elections in Brazil to show that firms enjoy superior access to subsidized financing from the state-owned national development bank (BNDES) when they decide to invest in municipalities whose winning mayoral candidate is coalition-aligned with the national ruler. This effect fades away as the level of competition in the local election decreases. The evidence implies that when managers bet on national coalition-aligned winners in close local elections, they positively affect CPA outcomes. I extend the exchange-based typology of corporate political strategies by offering a novel possibility of targeting voters with financial inducements, which I call a private local development strategy. Finally, these results show that firms exchange their project-execution capabilities for superior access to subsidized financing.

Keywords: Corporate Political Activity, Local Elections, Political Rents in Banking, Quasi-Experimental Research.

*I want to thank Kenneth Shepsle, Jeffry Frieden, Torben Inversen, Daron Acemoglu, Ben Olken, Abhijit Banerjee, Chap Lawson, Ian MacMillan and the other participants in the seminars organized by the Department of Government at Harvard, by the Latin America Group at the MIT Political Science Department, by the Center for Emerging Markets at Northeastern, and by the Snider Center at the Wharton School. Special thanks to Daniel Hidalgo for valuable guidance and support, Alvaro Cuervo-Cazurra for his valuable suggestions, and to Renato Lima and Danilo Lima for their insights. I recognize the valuable research assistance from Renato Santos. I want also to thank the MIT Political Science Department for providing me a fertile environment to develop these ideas during my visiting appointment in the 2014-2015 academic year. I recognize financial support from FAPESP and FGV. The usual disclaimer applies. All errors are my own. Contact info: rodrigo.bandeira.demello@fgv.br
INTRODUCTION

One of the most challenging questions for research into corporate political activity (CPA) is to explain how firms successfully manage political decision-makers (Getz, 1997). From an exchange perspective, firms and political decision makers (here politicians) exchange resources for mutual benefit (Benson, 1975; Hillman and Hitt, 1999). Firms care about accessing favorable policy and rents, while politicians care about remaining in power or obtaining other individual rents from office. From the point of view of managers, the main problem is to assess the extent to which the resources they are bringing to the exchange maximize the politician’s preferred outcomes, thus affecting the CPA outcome.

The existing exchange-based literature on CPA offers partial solutions to this question. It does not provide explicit testable causal mechanisms, i.e., it does not go beyond correlation claims about how endogenous factors matter for firms engaging in exchange with politicians. For instance, empirical research suggests that the optimum choice of resources depends on structural antecedents, such as formal and informal political institutions (Henisz and Zelner, 2012), political market features (Bonardi and Keim, 2005), and on industry- and firm-level factors, such as industry concentration, firm size, and government dependency (Hillman et al., 2004; Lux et al., 2011; Lawton et al., 2013). While this research has provided valuable information about the conditions associated with some CPA outcomes, the lack of a clear causal path prevents theory development.

I offer a solution for this problem. I develop and test a causal mechanism that links local elections to the outcome of national-level CPA, through legislative bargaining. The intuition behind my argument is the following. The national ruler cares about maximizing the national legislative outcome and needs to engage in bargaining with the legislators. Since the national legislators have incentives to please elected local administrators, thanks to their role as local brokers, the national ruler has incentives to channel resources to coalition-aligned localities. Firms may anticipate this demand and, in exchange for political rents, help the national ruler maximize the legislative outcome. I derive my hypotheses using insights from exchange-based CPA (Benson, 1975; Getz, 1997; Hillman and Hitt, 1999) and tactical electoral redistribution from political economy (Snyder, 1989; Cox, 2009). Political economy models applied to special-interest redistributive politics predict policy
outcomes that consider the interaction between elections, post-election legislative bargaining, and the activity of interest groups (Chari et al., 1997; Grossman and Helpman, 2002; Persson and Tabellini, 2002). For instance, voters and lobbies affect (or elect) policy positions, as well as having an impact on the dynamics of the policy making process, which will define which groups will disproportionately receive resources (Snyder, 1989).

I test my hypotheses in the context of political rents in banking. Empirical evidence has shown that government ownership in banks is instrumental for electoral redistribution (Dinç, 2005). Since state-owned (SO) banks provide subsidized financing, firms have a strong incentive to seek these rents (Sapienza, 2004). Given that the national ruler that controls the bank needs to channel resources in order to please allies in congress, I argue that firms can have superior access to political rents from SO banks if they decide to invest in coalition-aligned localities.

The methodological challenge is to account for all the observable and non-observable factors that affect both: whether a given locality is coalition-aligned, and the corporate decision to invest. In order to tackle this challenge, I conducted natural experimental research using regression discontinuity (RD) design to randomly ("as-if") assign localities to either coalition-aligned or non-aligned groups. RD has been often used in empirical research in economics and political science (Lee and Lemieux, 2010). It is an efficient solution for making causal inferences using observational data. It has several advantages over alternative methods, such as instrumental variable regression, matching techniques, and fixed-effect models (Angrist and Pischke, 2008). It provides a quasi-randomization of individuals, allowing to control for observable and non-observable confounding factors (Hahn et al., 2001). The intuition behind RD design in elections is that individuals who barely won or barely lost an election have counterfactual properties, so the treatment effect is identified by the observed difference of the outcome variable between these two groups (Lee, 2008).

I chose Brazil as the empirical context. Although my research does not intend to be Brazil-specific, the country is an excellent natural laboratory. First, financial markets are not well developed and market interest rates are extremely high, making BNDES the only attractive source of long-term credit, even for those firms that are not financially-constrained (Lazzarini et al., 2015). Second, coalition building efforts are fundamental for the national ruler to maximize legislative success
(Pereira and Renno, 2003). Finally, since candidates are voted at large in all elections, the broker role of local political decision-makers is very important for national politicians. I analyzed two municipal elections spanning eight years, from 2005 to 2008 (2004 election) and from 2009 to 2012 (2008 election). From the total of municipalities in Brazil, the RD setup assigned, "as-if" random, 3,500 municipalities to either treatment or control groups. The treatment (control) is the group of municipalities where the coalition-aligned party barely defeated (lost to) an opposition party. During this period, the state-owned national development bank granted 1,443 loans to private firms. I matched each loan for private investment with its recipient municipality (ies) to construct the observed outcome variables.

The findings indicate that "betting on the winner" provides superior access to political rents in banking. The victory of a mayoral candidate whose party is coalition-aligned with the national ruler in congress positively affects the attraction of large private projects subsidized by the BNDES. In addition, I applied matching techniques combined with differences-in-differences to show that this effect fades away as the coalition-aligned mayoral candidate defeats the coalition-opposition in his or her stronghold. Therefore, managers should direct their investments to help the national ruler secure swing municipalities for allied political parties in congress in order to have privileged access to subsidized credit. These findings give support to the causal mechanism linking local elections to national-level CPA through legislative bargaining. The results hold good even after a series of tests for robustness and alternative explanations.

The contribution of this paper is threefold. First, it provides a causal mechanism that explains CPA outcomes. The analyzed CPA allows the exchange-based typology of CPA to be extended, by introducing the possibility of targeting voters with financial incentives (through the externalities of large private investments). That is, in addition to information, votes and money (Hillman and Hitt, 1999), firms can exchange their project execution-capabilities to gain superior access to political rents. Second, existing research has focused on how political capabilities affect CPA, or on how CPA affects competitive strategy (McWilliams et al., 2002; Bonardi and Holburn, 2006; Capron and Chatain, 2008; Oliver and Holzinger, 2008; Holburn and Vanden Bergh, 2014). This paper provides an example of the overlooked effect of market capabilities on CPA outcomes. Finally, it adds value to the related literature on how government ownership in banking affects the behavior of firms by
improving existing explanations about the behavior of state-owned banks (Carvalho, 2014; Lazzarini et al., 2015).

**LOCAL ELECTIONS AND CPA**

The exchange-based literature on corporate political activity (CPA) considers that the mutual resource dependency between firms and politicians explains why firms are politically active (Getz, 1997). Firms and politicians engage in a voluntary transaction of resources for mutual benefit (Benson, 1975). The dependence of an actor on the others is a function of how much one party needs, or wants, the resource from the other party (Cook, 1977). Hillman and Hitt (1999) synthesizes the basic resources firms can bring, alone or in combination, when engaging in exchanges with politicians. Firms can provide information to politicians about voter preferences, for instance, through lobbying activities, hearings and technical reports. Firms can provide financial incentives to politicians, which include money for financing political campaigns or any other form of direct inducement, such as outside jobs (board participation). Finally, politicians are obviously influenced by votes. Firms may influence the politician’s behavior indirectly by changing voter preferences by way of any type of grassroots politics, advocacy advertising or educational campaigns.

Extensive empirical literature has provided evidence on the conditions under which these resources yield particular outcomes. These conditions include broad political institutions, such as electoral systems and political risk, as well as industry-level and firm-level variables (Hillman and Keim, 1995; Hillman et al., 2004; Lux et al., 2011; Henisz and Zelner, 2012; Lawton et al., 2013). From an exchange-based perspective, these conditions shape the resulting power balance, or interdependence, between actors in an exchange (Cook, 1977). Firms act politically either to exploit power advantages and get access to political goodies, or to mitigate a disadvantageous power imbalance (Getz, 1997). However, while existing evidence provides important information about contextual factors associated with CPA outcomes, causal mechanisms linking drivers to CPA outcomes have not yet been tested. This is because the determinants of CPA outcomes are usually endogenous. For instance, some usual determinants of CPA outcomes, such as the nature of political issues, nonmarket capabilities, political embeddedness or party competition do not serve for designing clear causal paths. Political
market attractiveness is a function of the nature of the political issue being transacted: its electoral appeal, and the distribution of its benefits and costs among other players (Bonardi and Keim, 2005). Nonmarket capabilities are a function of learning from previous exchanges, that is, which actions were successful in the past, and which were not (Bonardi and Holburn, 2006; Henisz and Zelner, 2012). Political embeddedness (Oliver and Holzinger, 2008) is also historically determined and a function of previous CPA. Party competition (Holburn and Vanden Bergh, 2014) is influenced by several aspects, including how much money has been poured into the race.

I argue that the interaction between elections and legislative bargaining provides a clear causal mechanism explaining CPA outcomes. Models in special-interest redistributive politics in political economy explain why government targets particular groups with a disproportionate distribution of political goodies (CPA outcomes), such as subsidies (Grossman and Helpman, 2002). The literature offers several formal models to explain how interest groups interact with election and policy-making outcomes (see Persson and Tabellini (2002) for a review). This interaction, however, has been overlooked by CPA research in management. In order to advance my argument, I distinguish between local and national elections, as well as between pre- and post-election politics. Local elections elect administrators and legislators in a given constituency, such as mayors in a municipality. National elections elect national decision-makers, e.g. the President and national congressmen. Pre-election politics refer to electoral competition before election day, when candidates present their platforms and target their voters, while post-election politics refer to the policy-making process during the legislature (Persson and Tabellini, 2002).

I focus on local elections and the exchange between firms and national politicians. I argue that local elections affect national-level CPA because they affect post-electoral politics at the national level1. The causal mechanism linking local elections and CPA outcomes is the dynamics of policy-making in the national legislature. Assuming that the national ruler also cares about national legislative outcomes, the exchange interdependence becomes favorable to the firm when it helps the national ruler bargain with congress. This is possible when the firm helps the national ruler reward coalition support in congress by channeling private investments to politically-aligned

1Obviously, post-election politics affect the pre-election politics of the upcoming election. This is important since elections may serve as an instrument for monitoring the politician in office. I address this aspect in the following sections.
localities. This proposed mechanism extends (Hillman and Hitt, 1999)’s CPA typology to predict what I call a private local development (PLD) strategy. The extended typology is represented in figure 1. Firms may target political decision-makers with information (e.g. lobbying), or with money (e.g. campaign financing), or they can target voters with information (e.g. advocacy advertising) (Hillman and Hitt, 1999). The PLD strategy fills the still/as yet missing possibility of targeting voters with financial inducements (in the form of project externalities). I derive the hypothesis that explains how local elections affect PLD strategies in the context of political rents in banking.

**POLITICAL RENTS IN BANKING**

The political use of state-owned (SO) banks is a plausible mechanism that explains direct outcomes of CPA. Government ownership does affect bank behavior what provides incentives for firms to become politically active and try to access the political rents accruing from SO banks (Sapienza, 2004; Dinç, 2005). Drawing on the political view of government ownership (Shleifer and Vishny, 1994), empirical results have indicated a positive effect of using connections or any other strategy when accessing political rents accruing from SO banks. Khwaja and Mian (2005) found that the political connection through board participation, that is, when a politician sits on the board of directors, yields preferential treatment by SO banks in Pakistan. They also found greater effects when the director’s party is in power or when the director is politically strong. Without explicitly modeling the government ownership of banks in Brazil, Claessens et al. (2008) used corporate contributions in electoral campaigns as a proxy of political connections and found that connected firms have more financial leverage and privileged access to finance. In the United States, where government ownership of banks is not common (La Porta et al., 2002; Duchin and Sosyura, 2012) explored the financial bailout of corporations by the American government after the 2008 crisis be way of the Troubled Asset Relief Program (TARP). They tested several corporate strategies, such as lobbying, financial contributions, board participation, and the connection of the firm and politicians whose voting district is where the firm headquarter is located. Their results show a strong relationship between political strategies and a connection to access of government capital. The evidence in Brazil indicates a relationship between the allocation of the SO national development bank and political
connections through campaign financing (Lazzarini et al., 2015).

Given the fact that governments make political use of SO banks, I derive a set of hypotheses that predicts how local election affect the outcome of CPA through legislative bargaining.

**National-local coalition alignment**

First, the interactions between elections, legislative bargaining and special interest groups should be assessed conditioned on existing political institutions (Persson and Tabellini, 2002). Therefore, I assume that a) national congressmen are voted to be representatives at-large, i.e. of the whole population of their states or regions; b) the legislative rules give considerable power to the national ruler (such as veto of amendments to the budget); c) party leaders have agenda-setting power and enjoy considerable influence over how party members vote on the floor; and d) given this setting, the national ruler has incentives for bargaining with parties, not individual congressmen\(^2\).

In order to show how local elections affect national-level CPA outcomes through legislative bargaining, I first derive the path from legislative bargaining to the CPA outcomes, then the path from local elections to legislative bargaining. The relationship between legislative bargaining and the CPA outcome can be viewed as a plausible equilibrium. Investments affect the local environment in several ways that are attractive to political decision-makers. They create jobs, generate extra sources of revenues and, particularly to less developed constituencies, they help improve basic institutions, such as technical education and infrastructure. Investments help incumbents claim credit for these accomplishments. One common type of politically-driven investments are pork-barrel projects (Weingast et al., 1981): the national ruler exchanges pork for policy by pleasing congressmen (parties) with projects in their constituencies that will improve their chances in the ballot box. I argue that private projects subsidized by SO banks can also serve to please political parties. Given that SO banks are political instruments, the national ruler can channel subsidized private projects into politically attractive areas to gain support in congress. Differently from pork-barrel projects, private investments are even more attractive to politicians because they are not directly subject to

\(^2\)These assumptions are precisely the case or fairly well match the rules in several countries in Europe, South America, and Asia. The third assumption is important since the agenda-setter’s policy preference may not coincide with the preference bliss point of the pivotal congressmen, resulting in an equilibrium policy that is different from the one originally proposed by the agenda-setter (Romer and Rosenthal, 1979).
public budget constraints or to the laws of public administration. Therefore, it is in the interest of the national-ruler to attract private firms to invest in politically attractive areas. The incentives for the firms are straightforward. By investing in politically-attractive areas, they get access to political rents in the form of privileged financing. In situations where SO banks are very active, getting the money in the market without subsidies is obviously more expensive and not attractive (Sapienza, 2004; Lazzarini et al., 2015). Assuming a large number of constituencies and few budget restrictions for the government to finance these projects, the best strategy for firms and political decision-makers is to engage in this type of exchange.

Local elections affect legislative bargaining since they inform the national ruler which localities are more politically attractive for receiving investments. Since, the incentive for political parties in local elections is not to maximize the total number of votes, but to maximize the total number of elected constituencies won, in mayoral elections, for instance, the problem is how to maximize the total number of elected mayors. This is because local administrators play an important role for political parties in at-large voting. For instance, mayors can serve as important "brokers" in national elections as they are closer to the constituents, are ultimately responsible for project implementation, and can help in implementing credit-claiming activities in their municipalities. As brokers, mayors have the means to enforce clientelistic relationships, hold voters accountable and monitor the voter fulfillment of their promises (Stokes, 2005). Therefore, private investments subsidized by SO banks can be considered a form of remuneration for the broker service performed by allied local administrators (Szwarcberg, 2012).

Empirical evidence from financial economics corroborates the differential flow of resources from SO banks to politically aligned constituencies. Using a sample of Italian firms, Sapienza (2004) found that the greater the percentage of votes received by the party to which the chairperson of the bank is affiliated in a given area, the lower the interest rates charged by SO banks to firms borrowing in this area. Cole (2009) studied Indian public banks to show that their lending behavior in agricultural credit follows the electoral cycle and they are more intense in districts where the ruling party won or lose by narrow margins. Using aggregate data for groups of firms by size and at the state level in Brazil, Carvalho (2014) found that firms switch jobs to states that are politically

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3 Mayors themselves have their own brokers, e.g. councilmen or party representatives in an area in the district (Szwarcberg, 2012).
attractive to the national government in order to be rewarded with favorable borrowing from the SO bank.\(^4\)

Assuming that national rulers will please coalition-aligned parties by directing private investments subsidized by SO banks to politically attractive areas, the informational value of local elections is important for managers identifying where to invest. If the elected local administrator's party is politically coalition-aligned with the national ruler in congress, then it is expected that this locality will be targeted by the national ruler (and firms) with a disproportionate amount of resources. Therefore, I propose hypothesis H1a.

**Hypothesis H1a:** The coalition alignment between the local and the national ruling parties positively affects the attraction of private investments subsidized by SO banks.

**Project size**

In order to ensure that these private investments are being used for political purposes, I derive two other hypotheses. The first one is about the visibility of private investment. The incentives for political parties, the national ruler, and the local administrator is to claim credit for possible externalities accruing from private investments\(^5\). Therefore, the more visible the project, the better for credit-clamming particularly in electoral systems where there is strong party competition with at-large voting. Besides being more visible to local stakeholders, bigger projects are more likely to provide more jobs and have greater impact in the local community.

From the manager’s point of view, larger enterprises are more subject to stakeholder pressures

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\(^4\)Other types of resources rather than funding from SO banks are also associated with political alignment and the electoral calendar. Asher and Novosad (2015) show for the Indian context, that firms operating in coalition-aligned constituencies outperform firms in non-aligned districts, and have privileged treatment in getting licenses from the government. Using data on discretionary budgetary transfers from the national government to local governments in Brazil, Brollo and Nannicini (2012) found that transfers to politically aligned municipalities are more substantial than those to "enemy" mayors, precisely because non-aligned municipalities receive fewer funds closer to the upcoming municipal election. According to the authors, this strategy "ties the hands of the enemy" since 65% of municipality revenue comes from the federal government, including 15% of discretionary transfers to infrastructure projects (tax revenues account for 5.5% and state transfers, 25.5%).

\(^5\)While research in political science has shown that bringing projects home translates into votes (Ames, 1995), I cannot rule out the mediating effects of bribes on the relationship between pork-projects and votes. Using Brazilian data, Samuels (2002) shows that the electoral system gives incumbent deputies incentives to exchange pork-barrel projects for financial inducements from private firms in charge of implementing these projects. The private investments to which I am referring are not pork-barrel in the classical sense but may also be instrumental in collecting bribes.
Larger projects are more dependent on local stakeholders than smaller projects, because, for instance, of the larger amount of sunk costs involved, the difficulty in meeting government requirements for environmental licenses, and the need to rely on a bigger number of skillful workers who might require the firm to invest in educational projects. By investing in politically attractive localities, managers may benefit from favorable treatment in the government bureaucracy, which can make the execution of larger projects more efficient.\(^6\) Hence, I expect the larger private projects to flow to politically attractive localities. Based on this, I propose hypothesis H2b.

**Hypothesis H2b:** The coalition alignment between the local and the national ruling parties positively affects the attraction of larger private investments subsidized by SO banks.

**Electoral competition**

The second hypothesis that helps to prove that the location of private investments subsidized by SO banks is politically-driven concerns the level of competition in local elections. The problem for the national ruler is to maximize legislative outcomes by channeling private investments to multiple localities. Since coalition allies in congress make efforts to maximize the total number of elected local administrations, the best solution for the national ruler is to target "swing districts"\(^7\). In these localities, credit-claiming private projects produce greater marginal effects on the probability of winning (or losing) the upcoming local election. Conversely, channeling resources to "safe districts", or strongholds of coalition-allied parties, as well as to localities where the party is not well-voted, may not change the final outcome of the upcoming local election. Hence, investing in safe districts has a smaller effect on the legislative outcome when compared to swing districts (Case, 2001; Dahlberg and Johansson, 2004).

However, it is less likely that national governments would be willing to disproportionately transfer resources to non-aligned swing districts and thus help the opposition party claim credit. As Samuels (2002) points out, claiming credit from pork-barrel projects, for instance, may not be easy when

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\(^6\)In fact, I found that the national-local coalition alignment also has an effect on the observed intensity of environmental licenses issued by the national government. These results are available upon request.

\(^7\)By definition, swing districts are those constituencies where the margin of victory of the winning candidate is so small that by doing "a bit better" (or worse) the outcome of the election changes (Snyder, 1989; Cox, 2009).
candidates are voted at large, since other players may steal the credit and persuade voters. While such districts may be targeted anyway, swing districts where the elected party is coalition aligned with the national government would capture the largest share of investments in comparison with their non-aligned counterparts.

If private projects subsidized by SO banks are instrumental for political purposes, I expect that the national ruler will make more efforts to secure swing districts for coalition-allied parties. If this is true, I also expect that, as the marginal political benefits of these private investments decreases with the margin of victory of the winning candidate, the incentives for the national ruler and firms to make investments also decrease. Hence, I propose hypothesis H2.

**Hypothesis H2:** The level of competition in the local election positively moderates the effect of coalition alignment between the local and the national ruling parties in attracting private investments subsidized by SO banks.

This set of hypotheses can be depicted in figure 2. National-local coalition alignment is the main driver affecting the PDL outcome and it is moderated by local electoral competition. PDL outcome reflect the interdependence resulted from the value of the resources in the exchange. Politicians exchange cheap finance for the service of carrying out investments. In the next section, I show the empirical strategy to make national-local coalition-alignment exogenous in order to test its causal effect on CPA outcome through legislative bargaining.

**EMPIRICAL STRATEGY**

A major challenge for research into CPA outcomes is to make robust claims about causal inference. The very nature of the observational data plagues these attempts with omitted variables bias. The natural experiment I describe in this section exploits the discontinuities of CPA outcomes in close elections and provides a fairly efficient solution for identifying causal effects.

**Research setting**

The political and economic environments in Brazil make the country an excellent natural laboratory to test my hypotheses. The three basic reasons are: a) political institutions favor competitive
elections and party fragmentation, and demand significant efforts by the president to form coalition-based support in congress; b) the state-owned national development bank is a relevant economic agent; and c) since the cost of capital is high, having access to favorable finance is a source of competitive advantage.

The political environment

Brazil is a vibrant democracy. The country is a republic with 26 states plus the federal district and 5,561 municipalities, as of 2015. The national ruler is the President, who is elected for a 4-year term, with one possibility of re-election. State governors, state and federal representatives and city mayors are also elected for 4-year terms. Governors and mayors, like the president, can run only once for re-election. National elections for President, state governors, senators, and federal and state representatives are held two years apart from the local elections for mayors and city councilors. The at-large voting system is used in all electoral races. Elections use electronic ballots and voting is mandatory for individuals between 18 and 70 years old. The average turnout is 85 percent, with little variation across constituencies.

The national congress is formed by two chambers, the House of Deputies and the Senate. There are 32 parties registered in the Electoral Supreme Court (TSE), of which, 28 parties have affiliated politicians elected for the 2015-2018 National Congress legislature. However, historically only a hand full of parties concentrates the majority of congressmen. Since the redemocratization in the end of 1980’s, basically two parties alternate themselves in power: the center left Workers Party (PT) and the center right Social Democrats (PSDB). The third major party (PMDB) swings to either side depending who is in power. The rest of the political parties bargains their support with the ruling part, so that in the case of the rewards are not attractive, they go to opposition.

Despite the fact that the electoral system favors personalized voting and "entrepreneurial" candidates, party leaders and the President enjoy considerable power for agenda setting and the allocation of public funds, respectively (Pereira and Renno, 2003; Alston and Mueller, 2006). The President puts a lot of effort into building coalition with party leaders for electoral outcomes, thus making the Brazilian presidential strongly coalition-based. These coalitions are not formal electoral coalitions that runs for election, but are continuously negotiated on informal agreements.
There are several channels by which the President can build political alliances in Congress. I highlight the two most used channels. First, the government may handover a share of execution of the federal budget by letting aligned parties control cabinet posts. Rent-seeking ministries, like transportation, are of the most value, since the party in control of the budget can claim credit for projects and have sufficient resources to please their allies, such as politically-aligned mayors. This "wholesale" support-buying is one of the reasons there are, in 2015, 39 different ministries in Brazil. As pointed out by Boas et al. (2014), during the years of the Lula presidency the ruling Workers' Party (PT) was over-represented in cabinet seats, adopting a "party strengthening" strategy. However, this strategy decreased over the years as other parties increased their bargaining power in Congress.

The second channel by which the federal government can build political coalitions is by "retail" bargaining (Boas et al., 2014). The President includes in the federal budget pork-barrel projects proposed by congressmen in exchange for political support in congress (Alston and Mueller, 2006). These projects are basically of two forms: direct contracts with the federal government and discretionary transfers to municipalities. Congressmen (and parties) use these resources to "bring the pork home", pleasing their constituents and allied mayors, as well as their major financial contributors (Samuels, 2002; Brollo and Nannicini, 2012; Boas et al., 2014). Brollo and Nannicini (2012) found that money allocated by way of discretionary transfers to politically aligned municipalities is more substantial than that allocated to "enemy" mayors. In fact, these transfers are opportunistic in the sense that they are more intense ahead of the municipal election. According to the authors, this strategy "ties the hands of the enemy" since 65 percent of municipal revenue comes from the federal government, including 15 percent of the discretionary transfers for infrastructure projects (tax revenues account for 5.5 percent and state transfers, 25.5 percent). Although the President has the final decision to allocate these resources, a great deal of effort is made by parties to include these projects in the federal budget.

The business environment

Doing business in Brazil is no easy task. This is not just because competition may be fierce in some industries, but also because formal market institutions are weak and informal institutions
do not promote support for individuals to efficiently undertake arms-length transactions. Formal market institutions, more precisely, property rights and information symmetry are not well developed. Intermediaries that could facilitate transactions, such as auditors, information bureaus, infra-structure and logistics operators, educational organizations, and even the judiciary system are not well developed or efficient. As a consequence, markets do not function well and players need to find substitutes for these weak formal institutions, such as relationship-based and network-based support. Historical cultural traits have fostered specific informal institutions, such as clientelism and patronage, which reinforce the asymmetric concentration of power in office-holders, which in turn favors rent-seeking activities.

As a typical hierarchical economy, individual big businesses in Brazil firms enjoy greater asymmetrical power over other interest groups, like organized business, labor and non-profit organizations (Maxfield and Schneider, 1997; Schneider, 2013). Firms need political support to access valuable country resources controlled by government, and government needs business support for financing its election campaigns and to put forward its economic and developmental agenda. This status quo is reinforced precisely because it is in the best interests of those in power. Xavier et al. (2014) found that business groups that have the state as a minority shareholder benefit more from the underdevelopment of formal institutions.

The Brazilian state has always been large and has always been an important player in the economy (Evans, 1979). Since 2003, under the ruling of PT, the liberalization policies that had been in place since the 1990s were halted in favor of a Brazilian-type of state-capitalism policy (Musacchio and Lazzarini, 2014). The state became even more pervasive in business affairs, controlling important country resources. One feature of this heavy hand of government is the increasing role and size of the state-owned National Development Bank (BNDES). The bank was created in 1952 in order to promote economic development by funding projects in target industries (Leff, 1968). It has, however, performed different roles during its existence, from investing in large infrastructure projects and bailing out firms, to leading privatizations in the 1980s and 1990s (Lazzarini et al., 2015).

After 2003, the bank increased considerably in size and scope. From 2006 to 2014 its lending level increased by 260 percent. As of 2013, the bank accounted for 20 percent of all credit to the private sector, 10 percent of the Brazil GDP, and is virtually the only source of long-term credit for
large corporations. Considering that capital markets are not well developed, long-term loans and retained profit are the preferred sources of financing in Brazil. On top of that, the BNDES lends money at a subsidized rate of about half of the market rate. In 2014, the average long-term loan rate in the market was around 15 percent per year, while the rate at the BNDES was around 6 percent. Hence, there are no incentives for firms to contract long-term loans in the market, even if they can, but rather to apply for the maximum allowed financing level at the BNDES. Despite the fact that the bank is primarily funded with tax payers’ money, its operations are not fully subject to public scrutiny. This flexibility contributes to the instrumental use of the bank to fulfill a political agenda. Although the technical body of the bank has a long tradition in public service, the political capture of the bank is inevitable (Lazzarini et al., 2015).

Given this context, my argument is that the BNDES is also instrumental in pleasing coalition allies in congress. Since credit-claiming through pork-barrel projects is not efficient given the existing electoral system (Ames, 1995; Samuels, 2002), funneling resources to coalition-aligned municipalities by subsidizing private projects financed by the BNDES is an interesting alternative to buy support coalition (Boas et al., 2014).

Causal identification

The purpose of this empirical strategy is to test the causal effects of the national-local coalition alignment on CPA outcome as measured by the allocation of the BNDES to subsidize private projects. The main empirical challenge is to control for observable and non-observable factors that affect both local elections and CPA outcomes. For instance, right-wing municipalities may be more attractive to certain businesses than left-wing districts, as the former may be associated with rich cities and a better educated workforce and the latter with less qualified workers. The reverse effect is also possible: public and private investments may affect the results of the upcoming election, increasing the chances for the incumbent. It is impossible to control for all possible confounding factors. Therefore, any simple correlation between political alignment and a private local development strategy would be severely biased.

Usual solutions for this problem in observational studies are instrumental variables (IV) regressions, fixed-effect models (FE), differences-in-differences models (DD), and selection on
observables through matching procedures. The main drawback with IV modeling is the difficulty of finding good instruments that do not fail the exclusion restriction (Angrist and Pischke, 2008). As for the FE class of models, they do not take into account non-observable, time-varying confounding factors. In the case of this paper, for example, one may think about any reason that led to changes in political power in the election, or any event at the local level in a given year that makes the municipality more or less attractive to private investment. The drawbacks for matching techniques are the sole focus on observables, and their sensitivity to model specification (Imbens, 2014).

One alternative way to efficiently mitigate omitted variable and model specification sensitivity problems is to consider a sample of municipalities that have been exposed to quasi-random electoral results. The best solution for making elections exogenous is the regression discontinuity (RD) design. RD has been used in economics and political science (Imbens and Lemieux, 2008; Lee, 2008; Lee and Lemieux, 2010; Caughey and Sekhon, 2011), including papers that used election data in Brazil (Ferraz and Finan, 2007; Brollo and Nannicini, 2012; Boas et al., 2014; Fujiwara, 2015). It has the advantage of controlling for both observable and non-observable sources of confounding. RD is a quasi-experimental design that exploits exogenous events to "assign" units to the treatment or control groups "as if" random. This is possible when individuals are measured according to a criterion, or running variable. Once a cutoff for this running variable is exogeneously defined by the event, individuals that lie in the proximity on each side of the cutoff are considered similar enough to show counterfactual properties (Hahn et al., 2001). Individuals at one side of the cutoff receive the treatment while the others, at the other side, do not.

I followed similar setups that used RD in close elections (Brollo and Nannicini, 2012; Boas et al., 2014). The treatment is the election of a mayoral candidate whose party is in coalition alignment with the national government, and the control is the election of a coalition-opposition party. The running variable is the margin of victory of the first candidate with respect to the runner-up. The cutoff is the value that separates elected from defeated candidates, that is, the margin of victory is equal to zero. The intuition is that the sample of municipalities, in which the mayoral candidate, whose party is aligned with the national government and who barely defeated a non-aligned candidate, is similar enough to be comparable to the sample of municipalities where the nationally-aligned candidate barely lost the race to a non-aligned candidate. It implies that in a municipality complying with
these conditions any candidate, aligned or non-aligned, had the same chances of winning. Therefore
the assignment of this municipality to the treatment or control groups is "as-if" random, providing
a fair balance of observed and non-observed variables between groups. The effects are estimated for
the constrained sample that meets these conditions, and the observed difference of the dependent
variable for these two groups close to the cutoff is identified as the causal effect.

More formally, the running variable is defined by the equation 1. The margin of victory \((x)\) of
the aligned party in a municipality \((m)\) in a given election \((t)\) is measured by the number of valid
votes \((V)\) of the winning candidate \((w)\) minus the votes received by the runner-up candidate \((r)\),
divided by the total number of valid votes in a given election. The treatment (control) group is the
sample of municipalities when in a given election \(t\), the party of \(w\) is coalition-aligned (opposition)
and the party of \(r\) is non-aligned (coalition-aligned). Therefore, the margin of victory takes positive
(negative) values for the treatment (control) group. The value is positive (negative) when the aligned
party wins (loses) and the opposition party loses (wins).

\[
x_{mt} = \begin{cases} 
\frac{V_w - V_r}{V_t}, & \text{if } w \text{ is aligned and } r \text{ is opposition} \\
\frac{V_r - V_w}{V_t}, & \text{if } w \text{ is opposition and } r \text{ is aligned} 
\end{cases} 
\]

\(1\)

The causal or treatment effect (TE) is identified as the difference between the observed effect for
the treatment and control groups at the cutoff. Formally, the "localized" TE is defined by equation
2.

\[
TE = \lim_{x_{mt} \to 0^+} E[y_{mt} \mid x_{mt}] - \lim_{x_{mt} \to 0^-} E[y_{mt} \mid x_{mt}] 
\]

\(2\)

In order to estimate TE, RD design assumes that individuals lying close to the cutoff of the
running variable are comparable units. Hence, the fundamental decision in any RD design is how far
from the cutoff these individuals are still comparable (Imbens and Kalyanaraman, 2012). In races
decided by larger margins, as one move away from the cutoff, several confounding factors could be
at play, such as historical, ideological or economic factors. For these reasons, RD does not use the
full sample to compute TE, but only the sample of treatment and control units where the margin
of victory is at the proximity of the cutoff. The distance around the cutoff that defines the sample size to compute TE is called bandwidth. The larger the bandwidth, the larger the sample size and the statistical power, but the likelihood of producing unbiased causal estimates for TE decreases. The key decision is to find bandwidths that are large enough for statistical power but still produce comparable groups. Similar to previous RD studies (Brollo and Nannicini, 2012; Boas et al., 2014), I computed the TE for four different bandwidths, six percent, seven percent, ten percent and for the optimal IK bandwidth produced by the algorithm proposed by Imbens and Kalyanaraman (2012). It is expected that treatment effects are significant for at least one bandwidth, given the positive verification of RD assumptions.

Model specification

The estimation of TE in Equation 2 requires the specification of the functional form that accounts for the relationship between the observed effect (the dependent variable) and the running variable, controlling for any other residual factor. Models for treatment and control groups are fitted using data constrained to the bandwidth windows for each side of the cutoff. The usual practice is to fit local linear OLS or a more flexible lower-order polynomial (Gelman and Imbens, 2014). In this paper, the mode followed a similar specification used by Boas et al. (2014), described in Equation 3:

\[
\min \sum_{m=1}^{N} \left\{ -h \geq x_{mt} \leq h \right\} K_{\lambda(x_{mt})}(y_{mt} - \theta_t - \sum_{z=0}^{p} \beta_z x_{mt}^{z} - \sum_{z=0}^{p} \gamma_z x_{mt}^{z} I_{mt})^2
\]

The estimation purpose is to minimize the sum of squared errors for the sample of N municipalities whose computed margin of victory in a given election \((x_{mt})\) lies within specified bandwidths \(h\). The quantity of interest is the estimate of TE given by \(\gamma_0\), which is the change in the intercept value of the function when crossing the cutoff \((x_{mt} = 0)\). The term \(K_{\lambda(x_{mt})}\) is a kernel function that yields weights according to the proximity of the cutoff. To assess possible model specification dependency, I fit three models based on the general specification in Equation 3. The first is a local linear model, where \(p\) is equal to one, and \(K_{\lambda(x_{mt})}\) is a constant term. The second model is a locally-weighted

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8The choice of the bandwidths is arbitrary as long as it meets the RD assumptions. The IK bandwidth usually has higher values. The other three bandwidths I am proposing are more conservative (Boas et al., 2014).
linear regression (loess) where \( p \) is equal to one, and \( K_{\lambda (x_{mt})} \) is a tricube function that gives more importance to observations close to the cutoff. Finally, I fit a non-weighted polynomial of order \( p \) equals to two. All models control for election effects \( \theta_t \) that affect all municipalities in a given mayoral term. All standard errors are cluster-robust at the municipality level.

Timing of events

The interpretation of the TE is a function of the timing of events and the information available to the players. I assumed the following sequence.

- **Municipalities are assigned to either treatment or control groups**: firms may be planning the investments before the elections, but they observe the local electoral results to bargain with the local authorities in order to decide where to invest. Since national elections occur two years before local elections, firms know which municipalities are coalition-aligned or in opposition.

- **Loan application**: it is difficult to identify whether the decision to invest the project in that particular place and time is solely driven by the firm. Firms may be explicitly approached by the government to invest in that particular municipality or region. Either way, after observing the local election results and bargaining with the authorities, the investment decision culminates with the application for and concession of the loan. In applying for the loan, the firm must have decided where to invest.

- **Analysis of the loan proposal at the BNDES**: the bank follows its internal procedures to decide about the final granting of the loan. Usually the lead-time from asking the bank about the project’s feasibility to the final signing of the contract is less than one year.

- **The observed effect**: Assuming that firms will wait for local elections to decide, and considering the average lead-time for proposal analysis by the bank of one year, it is expected that the effect will be more visible in later years of the mayoral term. In other words, the difference in BNDES money being invested by private firms between coalition-aligned municipalities and their non-aligned counterparts will be greater in the last two or three years of the mayoral term.
Sample and variables

I collected data for two mayoral elections, covering 8 years: the 2004 Election (2005-2008 term) and the 2008 Election (2009-2012 term). The data is available from the Electoral Supreme Court (TSE). It provides all information about the election needed to compute the margin of victory defined by equation 1. From the total number of municipalities, I had to restrict the sample to only those where more than one candidate was in the race and where, between the two candidates with the largest number of votes, one could be assigned to the treatment group and the other to the control group. I also left all the municipalities in the state of Sao Paulo and the city of Rio de Janeiro out of the sample. These are clear outliers and the inclusion of these cities would bias the counterfactual properties. The infrastructure of Sao Paulo state is far more developed than any other state and provides, to virtually all municipalities, world class highways, educational institutes and the largest industrial fabric of the country. This state alone represents almost one-third of the Brazilian GDP. The cities of Sao Paulo and Rio together accounts for around 20 percent of the national GDP. The inclusion of the state of Sao Paulo does not systematically alter the results, but negatively affects the validity of the causal identification efficiency.

Since presidential and mayoral elections are separated by a period of two years, I restricted the sample to parties whose supporting status did not change in this period. Since there was no change in the national ruling party (from 2003 to 2014), most of the political parties maintained their status. The elected president negotiates congressional support at the beginning of the term. I considered aligned parties to be those whose congressmen voted, on average, in favor of the government’s line more than 50 percent of the time during each presidential term, and opposition parties otherwise.

Project-level data on BNDES loans are also publicly available but with restrictions. There is no disclosure of the application date, of rejected applications, or of the general financial conditions of the loan. The available information discloses the date the loan was granted, a unique applicant identification number, a description of the project, the value of the loan, and the department of the bank responsible for the analysis. I had to identify and confirm the recipient municipality(ies) in each project. When this information was not clear in the project description, which seldom occurred, I crossed with other sources. I considered only loans with clear identification of the

\[\text{There are no parties close to this threshold. The Congress during this period was clearly divided.}\]
recipient municipality(ies). When there was more than one municipality, the total value of the loan was split among them. I considered only loans to private firms, excluding hydroelectric projects, since their locations are mostly defined by geographical factors.\footnote{The sample only considered direct, non-automatic types of loan, which are designed for larger projects that demand technical analysis by the bank.}

I matched the year when the loan was granted with each mayoral term: 2004 Election (loans granted in 2005, 2006, 2007 and 2008), and the 2009 Election (loans granted in 2009, 2010, 2011 and 2012). Based on this, I constructed four dependent variables for the observed effect: a) total loans (1st to 4th yrs.): the sum of all loans received by firms investing in a given municipality during the four-year term after a given election; b) total loans (2nd to 4th yrs.), the sum of the last three years of the term, in order to rule out the possibility that the loan was applied for before the election; c) total loans (1st to 2nd yrs.), the sum of loans in the first and second years of the term; and d) total loans (3rd to 4th yrs.), the sum of loans in the third and fourth years. Besides computing the observed effect as the sum of loans in a given period, I also used the average size of the loans as the observed effect to test Hypothesis H2b. To compute this metric, I divided the total loan values for the number of projects in a municipality for each period. This serves as proxy for the size of the project. All values in both sets of variables were winsorized at 1 percent.

**Insert Table 1 around here**

Table 1 shows the sample composition. Of the 4,390 loans granted by the BNDES in the period, 1,443 meet the criteria to be part of the sample (non-hydroelectric projects for private firms where the municipality(ies) were clearly identified. Considering both elections, 3,500 cities were assigned to either treatment or control groups. One can easily note that not all municipalities received investments. The firms in the sample were mainly manufacturing and services firms. A typical financed project was for the expansion of plant capacity, the construction of new plants, investments in research and development, or the improvement of distribution channels.

Table 2 presents the main descriptive statistics for the two sets of dependent variables, total loans and average loan, and the number of loans received by firms investing in a given municipality per year of the four-year term. Providing support for the expected timing of events, the figures suggest that investments are more pronounced in the second half of the term. On average, BRL 4.85 Million
against BRL 2.5 Million, respectively. The number of loans does not change much over the term years. The maximum number of loans was 10 in a given municipality in the third year.

*** Insert Table 2 around here ***

**RD assumptions**

The efficacy of the RD design for identifying causal effects in close elections relies on the assumptions that the number of votes received is exogenous and that all candidates have a chance of winning between zero and one (Hahn et al., 2001; Lee, 2008). Fraudulent elections are an example of a violation of the first assumption. Candidates cannot "sort themselves" around the cutoff. To assess this possibility I checked for evidence of vote manipulation, i.e. if some candidates systematically won (or lost) by a small margin. Close to the cutoff, the votes received by candidates must be a random process and a similar number of candidates should lie on either side. I tested this assumption using the McCrary test (McCrary, 2008). The results failed to reject the hypothesis of no sorting ($p \leq .73$). The second assumption is plausible, since I only considered in the sample those municipalities where more than one candidate was in the race.

If the RD setup really provides "as-if randomized draws" of individuals to be assigned to treatment and control groups, then they should not differ, on average, in pre-treatment background characteristics close to the cutoff (Boas et al., 2014). I analyzed the smoothness of several municipality-level covariates around the cutoff. I estimated Equation 3 using these covariates as the observed effect. Data came from the TSE, United Nations' Atlas of Human Development, the 2000 Brazilian Census, and the Brazilian Bureau of Statistics (IBGE) databases. Figure 3 plots the p-value for all specifications for a subset of covariates representing the economic, spatial, social-demographic, and political dimensions of a municipality’s features. As expected, I found no effect for any of the suggested bandwidths, indicating that both groups are balanced across these characteristics and giving support for the "randomization" of the RD design. These results also imply that any of these bandwidths are fairly reasonable for identifying the causal effects.

*** Insert Figure 3 around here ***
I also checked whether previous investments affected the margin of victory in the subsequent election. There is no effect of total loans received in the previous period on the margin of victory in the upcoming election. Finally, there is no imbalance between treatment and control with the regard to the total loans received for projects eligible for preferential treatment under the BNDES development program\textsuperscript{11}.

**FINDINGS**

Figure 4 shows a simple description of the observed outcomes year by year, comparing treatment and control groups considering the full sample \((h = 1)\). The total loan figures for the treatment group are consistently greater than the values for the control group, particularly in the second half of each term. The effect is more pronounced in the 2004 Election than in the 2008 Election. However, figures for the first years of the term (2005 and 2009) should be taken with caution since the decision to apply for the loans was more likely to have been taken before the election.

*** Insert Figure 4 around here ***

Visual inspection of the dispersion around the cutoff is important for deciding which model specification is most appropriate for computing the TE. Figure 5 compares the plots of the predicted values for each of the three specifications considering the outcome of total loans (3rd. to 4th yrs.) and a bandwidth of 10 percent. Since the models are not only a function of the margin of victory, the plot of predicted values is smoothed. Each observation point is a bin of 89 municipalities, plotted at their average points. Binned observations facilitate the visualization of the variance as to whether the functional form is correctly measuring the TE, or the discontinuity, at the cutoff. From the graphs, the discontinuity is visible in all three specifications. The value of the TE is also similar across models, indicating that all specifications are suitable for causal identification. The TE computed for bandwidth \((h)\) at 10 percent is the difference between the value at the cutoff for the positive values of the margin of victory (around BRL 9 Million) and this value on the negative side of the margin of victory (around BRL 3 Million).

\textsuperscript{11}Full results are available upon request. Preferential treatment increases by 20 percentage points the limit of BNDES financing for eligible projects in underdeveloped areas.
The actual computation and significance tests for the TE is given by the estimation of $\gamma_0$ in equation 3. Table 3 shows all results for the three specifications and four bandwidths. The number of observations ($N$) increases with the bandwidth. Looking across the three panels, there is no significant effect for total loans (1st. to 2nd. yrs.) in any bandwidth size ($h$). However, there are significant effects for total loans (3rd. to 4th. yrs.). In panel I, the highest value for TE, for the more conservative bandwidth, is BRL 8.12 Million ($TE = 8.12, h = 6\%, p \leq .05$). For the weighted estimations in panel II, the more significant value for TE is the 10 percent bandwidth ($TE = 7.47, h = 10\%, p \leq .05$). In panel III, even though the coefficients are positive, the only significant TE is also at 10 percent ($TE = 8.85, h = 10\%, p \leq .05$). These results support hypothesis H1a.

Support for hypothesis H1a implies that the election of a mayor belonging to a nationally aligned party attracts money in the form of subsidized loans for the projects of private firms investing in the locality. The value of the effect is not negligible, since it is almost double the overall average. These results provide evidence in support of the proposed timing of events and the informational role of the elections: firms seem to wait for the election results before applying for the loan, since they are more prone to invest in nationally coalition-aligned municipalities.

Table 4 presents the treatment effects for the outcome measured by the average loan size. This outcome proxies for the average project size in a municipality. The results are similar to those in Table 3 for total loans. In support of hypothesis H2b, the more significant TEs range from BRL 5.08 Million ($h = 5\%, p \leq .05$) to BRL 5.38 Million ($h = 5\%, p \leq .05$). Considering that the number of projects is balanced between treatment and control groups, this evidence suggests that firms are more likely to select into the treatment group, i.e., they decide to apply for loans to invest in larger projects in aligned municipalities. On the government side, larger projects are more visible and more efficient in credit-claiming advertising. On the firms’ side, larger projects tend to be more complex and riskier, which increases the value of implementing CPA to access political rents.
Finally, I tested the moderating effect of electoral competition. It is interesting that when looking at tables 3 and 4, the TE decreases when bandwidth increases, which is an indication that electoral competition matters. The main methodological challenge for testing this hypothesis comes from the fact that electoral results may not be exogenous in strongholds of both coalition-aligned and opposition parties. In municipalities in which one party (or ideology) is much stronger than the others, due to several factors such as education or income level, the winning margin in elections is usually larger. Therefore, the TE is not identified by RD design for larger margins. To solve this problem I estimated the TE using a combination of propensity score matching (matching) with differences-in-differences (DID). While matching assigns municipalities for treatment and control groups based on observable covariates, the DID approach controls for non-observable time-invariant municipality traits, by evaluating the difference in the average difference between groups for the difference in loans received after and before the elections.

I considered the variables in figure 3 plus the margin of victory and previous loans as initial covariates. The final selection considered pre-treatment variables with sufficient overlapping between two groups, which could affect election results and investment decision, and those that were not affected by the election (Caliendo and Kopenig, 2005). For set exact matching in both features I set: the election year and whether the mayor’s party belonged to the state governor’s coalition. I calculated the scores using matching with and without replacement. The final model for estimating the treatment effects controlled for election effects and the weights of each observation in the case of matching with replacement. The results are in Table 5 for log-transformed values of total loans (3rd to 4th yrs.). Results show that the average treatment of the treated (ATT) is positive in all four models\textsuperscript{12}.

\textbf{*** Insert Table 5 around here ***}

\textsuperscript{12}For better fit, I estimated this model with the logarithm of the actual value of the outcome plus one. In the case of RD design, taking the logarithm was not necessary since the distribution of the outcome was similar at both sides of the cutoff. This is not the case for matching since one municipality with an observed outcome of zero can be matched with another with an observed outcome of several millions. Moreover, the treatment effects (ATT) are not comparable in magnitude with the RD estimates, because the zeros are maintained when taking the logarithm plus one, producing much lower figures. The negative values for the matching plus DID models mean that when assigned to the control group the observed outcome is lower after the election than before.
Despite the fact that the combination of matching and DID computes an alternative treatment effects using a less efficient method for identifying causality, it provides more robustness to my claims since its computation does not constrain the margin of victory to a bandwidth. However, in order to test the moderating effect of the electoral competition, the values of TE in table 5 should be compared with the values of TE computed when constraining the margin of victory only for large values. To test this, I restricted the sample for the matching procedure considering a varying lower limit for the margin of victory for positive values and a varying maximum limit for negative values. For instance, for the limit value of ten percent, instead of using the sample inside the usual bandwidth window \((-10% \geq h \leq 10\%\)), I used the sample outside these limits \((-10% \leq h \geq 10\%\)). By doing so, I am comparing municipalities that won only by increasingly larger margins. Figure 6 depicts the results.

*** Insert Figure 6 around here ***

For the more complete model that combines matching and DID, the point estimates decrease as the window limits move away from the cutoff. The TEs are significant only for the whole sample, on average, which are the results presented in table 5. In support of hypothesis H2, the effect fades away when comparing municipalities that are strongholds of coalition-aligned parties.

Robustness tests and other considerations

Besides computing RD estimates for different model specifications (local linear, loess, and polynomial order 2), and using an alternative method (Matching and DID) to calculate the treatment effects, I conducted other robustness test to account for possible alternative explanations.

First, does the state governor matter? I argue that municipal elections provide information for firms to exploit resource transfers from the national government to coalition-allied municipalities. The state governor elections are not necessary for explaining the observed effect. First, looking at figure 3, the variable that capture whether municipalities belong to states where the governor’s party is nationally coalition-aligned is balanced across treatment and control groups. This means that the probability of finding aligned state governors is the same for these two groups. Second, the propensity score for models in table 5 were computed by exactly matching municipalities where the
mayor’s party belonged to the state governor’s coalition. Third, the difference between the observed outcomes is much greater in the second half than in the first half of the mayoral term. Since mayor and state elections happen two years apart from each other, this implies that the observed outcome is greater during the first half of the state governor’s term, right after the election. It is unlikely, therefore, that state-level factors are driving the results, since the usual cycle is a contraction in the first half (Nordhaus, 1975). Taken together, these results do not suggest that government at state level is an important channel for explaining the observed outcome.  

How sensitive are the findings to bandwidth selection? The findings show significant treatment effects for some bandwidths, such as six, seven and ten percent. It is important however to assess the extent to which the findings are sensitive to other bandwidth values. Figure 7 depicts the estimated effects for total loans (3rd to 4th yrs.) using the local linear specification and a confidence interval equal to 95 percent. The plot shows always positive point estimates for several bandwidth sizes. The confidence intervals decrease because the sample size increases with the bandwidth size. Closer to the cutoff, which is the region that identifies causality, there are significant effects for the range between five and 10 percent. This pattern indicates little sensitivity to the bandwidth selection due to any possible observed outcome outlier.

*** Insert Figure 7 around here ***

Is it really the election of an aligned party that causes the effect or it is something else that co-occurs with the election? Given the consistent pattern of the findings, it is less likely that something else relevant to the effect is occurring along with the election. In both elections, there is more activity in the second half of the term than in the first half. Therefore, any confounding event happening on election day should produce an effect that follows the electoral calendar. This argument also helps account for the fact that the firm would has invested anyway, regardless of the election. Again, the timing and geographical distribution observed in both elections make this less likely, since if this would be the case, the firm investments should also coincide with the electoral calendar.

13State governors can be an initial point of contact for the firm willing to make a new investment in the state. However, it is at the city level where the action takes place. State governors usually say yes to firms, but the final decision requires bargaining with local authorities.
Is it the election of an aligned party that causes the effect or simply the election of any party? I ran a placebo test using the excluded sample of municipalities where the parties of the two leading candidates in the race were both either aligned or in opposition. I randomly assigned, between the two, which received the treatment. Figure 8 shows the plot of the t-statistics. As expected, there are no significant treatment effects in any models, which excludes the possibility that election per se is causing the effect.

Is party ideology relevant for interpreting results? A possible concern is that the national ruling party ideology is causing the effect since the analyzed period does not account for changes in power at the national level. I argue that party ideology is not relevant for my results. Zucco and Lauderdale (2011) shows that in Brazil the legislative behavior of parties is not driven by policy preferences but rather as a function of accessing government resources controlled by the President. To check this concern, I estimated the TE using a sample of municipalities in the state of Sao Paulo that received private investments financed by other sources rather than by the BNDES. I found that municipalities where the party of the elected mayor is coalition-aligned with the party of the state governor received more investments. Unlike the case of the BNDES, the state governor does not control political access to finance, but firms may have sought coalition-aligned municipalities in order to have access to other types of rent, such as licenses. This result suggests that it is the coalition alignment and not the particular ideology of the national ruling party (PT) that is driving the results. A related concern refers to the possible differential effects coming from individual party ideology within the coalition group. A closer look at each party does not support this argument. Figure 9 shows average values for total loans (3rd to 4th yrs.) for the sample of municipalities within the 10 percent bandwidth. Individually, opposition parties (number 25 and 45) received much less, on average, per municipality than aligned parties. It is interesting to notice that the ruling party (number 13) shows the lowest average value. This confirms the idea that, by rewarding loyal parties, the national government is focusing on coalition building instead of party strengthening (Boas et al., 2014).

*** Insert Figure 8 around here ***

Does the national ruler favor pivotal parties? This question raises the idea of "swing" parties in

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14 The government of the state of Sao Paulo has been in the hands of the federal government opposition since 2003. These results are available upon request.
congress. Swing parties are those whose support (opposition) is fundamental for passing (rejecting) a government proposal. In the case of Brazil, the party number 15 (PMDB) can be characterized as swing party: it is the largest party in congress, it is not ideologically aligned with the ruling party, and it does not face significant costs in positioning far from its initial policy preference. In figure 9, this party does not receive, on average, the largest investments sums. Compared to the figures for parties ideologically-aligned with the ruling part (e.g. party number 65), there is compelling evidence that the national rulers target "core" allied parties.

The final concern refers to the existence of possible discontinuities at different cutoffs. This would imply that it is not only the election that is causing the results, but also something else. I estimated all the models in several cutoffs using the same bandwidths. The results did not show any significant pattern. This indicates that it is the election of a coalition-aligned party that is causing firms to apply for subsidized loans for large projects to invest in the municipality.

DISCUSSION AND CONCLUSIONS

I exploited close elections to make causal inferences about how local elections affect national-level CPA outcomes. I applied a regression discontinuity design using municipal elections in a large developing economy to show that the national-local coalition alignment positively affects the observed intensity of private investments subsidized by SO banks. This effect fades when the municipality is a stronghold of the nationally-aligned party, indicating that the national ruler tries to secure swing districts for its allies in congress. These results imply that firms are betting on the winner of close local elections in order to access political rents if the winner is coalition-aligned with the national ruler. These findings have interesting theoretical and managerial implications, I discuss this in this section, along with the limitations and opportunities for future research.

Theoretical implications

I highlight three major implications of these findings. The first one is methodological. Observational studies are virtually the only feasible design for understanding the real drivers and consequences of corporate political strategies. Therefore, controlling for omitted variables and disentangling the
effect of the political action from other factors is a major challenge for the field (Pearce, 2001; Hillman et al., 2004). I provide a robust test for the causal effect of local elections on national-level CPA. While regression discontinuity design has been applied in political science and economics for unveiling and testing causal mechanisms (Lee and Lemieux, 2010), to my knowledge no studies to date have been conducted in CPA-related literature in management using an equivalent method to produce robust causal inference using observational studies. I believe this methodological contribution will improve this stream of research in management as scholars will be able to make better claims about causality.

Second, these results contributes to extending knowledge about the role of organizational capabilities in CPA. Existing research focuses on how political resources and capabilities affect overall nonmarket performance (Bonardi and Holburn, 2006; Oliver and Holzinger, 2008) or on how political capabilities affect competitive strategy (McWilliams et al., 2002; Capron and Chatain, 2008; Holburn and Vanden Bergh, 2014)\textsuperscript{15}. This paper offers an example of an overlooked relationship: how market capabilities affect political activity. Unlike other strategies like lobbying, campaign contribution or constituency building, targeting voters with financial inducements is a direct function of the market capabilities of the organization. The firm can only channel financial inducements to voters if it has the capability of expanding existing plants, creating new ones, managing a more complex distribution channel or any other investment project whose features creates externalities that help credit claiming by the government. Firms offer their project execution capabilities in exchange for subsidized financing.

The final implication is to bring into management literature a related field about how government ownership in banking affects real corporate decisions (Sapienza, 2004; Dinç, 2005; Khwaja and Mian, 2005; Cole, 2009). My findings not only contribute in framing these empirical findings within the context of management research in CPA, but also provide an alternative causal mechanism that adds value to existing work. For instance, Carvalho (2014) used plant level data to show that firms operating in Brazil switch jobs from less to more politically attractive states in order to increase the chances of receiving more financial resources from the BNDES. By using a finer-grained dataset at the project and municipality levels, I tested an alternative mechanism that mitigates the possible

\textsuperscript{15}Some exceptions are in international business literature that considers previous international experience (market entry capabilities) in coping with political risk environments (Delios and Henisz, 2000).
confounding factor of using aggregate data at the state level. Lazzarini et al. (2015) positively tested
the effect of campaign contributions on BNDES allocation, which suggests the political capture of the
bank. I offer an alternative causal mechanism focused on local elections and legislative bargaining to
research offers a more diverse set of projects which is not tied to any fixed geographical features.

Limitations and future research

My setup does not discriminate between situations when it is the government that explicitly asks
the firm to invest in a specific municipality, perhaps in exchange for future favors, and the situations
when the firm anticipates that the government needs to please allies. While the final observed effect
is the same, knowing in which situation the firm has more freedom to choose and in which it is
strongly pressured by the government could be a topic for future research. In this regard, I have
conducted several qualitative interviews with government affairs executives of major business groups
in Brazil. I found that when the investment initiative comes from the government, the project is
more likely to be an unrelated diversification for the firm. And when the initiative comes from the
firm, the project is more likely to be an expansion of existing plants or a related diversification.

It would be also worth investigating the effect of multiple investments in swing districts by the
same firm on the bargaining power of the firm. Moreover, one obvious question for future research
is how local elections affect other types of CPA, such as lobbying or campaign contributions.

I have no smoking gun evidence that tells me whether investing in an aligned municipality
increases the chances of receiving BNDES allocations, because the bank does not disclose information
on rejected loan proposals. The observed intensity of the CPA outcomes reveals that, conditional on
bank approval, municipalities receive more money because they are coalition-aligned. But given the
existing theoretical and empirical evidence that SO banks are used as instruments for increasing the
electoral chances of allies, it is unlikely that the rate of approval of loans for aligned municipalities
would be smaller than for loans going to non-aligned municipalities. However, if this rate is not
smaller, it would be because of other moderating factors, such as the quality of the project itself or
the overall financial condition of the firm. Following up on this limitation, future investigations could
research into which company features are more likely to affect the observed outcome. For instance,
we could hypothesize that firms undertaking projects in industries that are more dependent on
government regulations or that face more pressure to be environmentally-responsible are more likely
to decide for aligned municipalities. Furthermore, future research into other political strategies, such
as lobbying, campaign financing and political connection, could add value to the proposed mechanism
tested in this paper. While the quasi-randomization of municipalities jointly controls for confounding
factors affecting the BNDES allocation and the decision to invest in a specific municipality, taking
into account these new firm-level variables may reveal some heterogeneity effects.

Moreover, the BNDES does not disclose loan application dates. However, official information
from the bank indicates that loans are granted on average in one year. Bank employees revealed
that this is a very conservative estimate. Hence, since the results show more action going on in the
second half of the term, it is less likely that these grants had been applied before the election.

The final limitation concerns external validity. First, interpretation of these findings should be
conditioned by the assumptions about political institutions. Therefore, whether they hold for other
democracies should be a function of institutional similarity. While SO banks are pervasive around the
world (La Porta et al., 2002), they are particularly more attractive in places where financial markets
are not well developed. Despite the fact the political institutions of Brazil are fairly comparable to
those of several other countries, future research could profit from testing and adjusting the same
mechanism for other settings, such as majoritarian elections in small districts, or for other types of
rents.

Managerial implications

The managerial implications of this paper are threefold. First, it broadens the portfolio of political
strategies to managers. Thanks to the nature of the investments, targeting votes with financial
inducements through the PLD strategy connects different layers of government and promotes good
long-term relationships between the firm and decision-makers.

Second, it highlights the informational value of local elections. Local elections inform managers
on which winner to bet. Any environmental scanning tool should take into account the results of
local elections (political alignment and electoral competition), and how the national government
are dependent on local governments, particularly in contexts where party competition and
coalition-building are important.

Finally, unlike other political strategies, the PLD strategy does not expose the firm to relevant moral hazards. Lobbying, campaign financing and constituency-building requires \textit{ex ante} investments, which may represent private costs for collective benefits\textsuperscript{16}. The PLD strategy does not require \textit{ex-ante} investments, since the subsidized loan is granted in order to make the investment. However, the firm could be subject to possible hold-ups if the project requires further collaboration from the authorities.

\footnote{I am thinking about indirect benefits through new policies that are collective, despite the fact that most of the times their effects are asymmetrical to firms.}
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Figure 1: A typology for corporate political strategies

<table>
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<tr>
<th>Target</th>
<th>Decision-makers</th>
<th>Voters</th>
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<tr>
<td>Information</td>
<td>Inducement strategies</td>
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<tr>
<td>(lobbying)</td>
<td>(campaign finance, outside jobs)</td>
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<tr>
<td>Constituency building strategies</td>
<td>Private local development strategy</td>
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<td>(advocacy ads)</td>
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Incentives

Information

Financial inducements
Figure 2: Diagram of hypotheses

- National-local coalition alignment
- Local electoral competition
- CPA outcome
- H1(a, b)
- H2

Diagram details: National-local coalition alignment influences CPA outcome through local electoral competition.
Table 1: Sample composition

<table>
<thead>
<tr>
<th>Sample</th>
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<td>Total number of BNDES loans</td>
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<tr>
<td>Sample size of selected BNDES loans</td>
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<tr>
<td>Sampled municipalities</td>
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<td><strong>Panel II: Industry representation (%)</strong></td>
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<td>Manufacturing</td>
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<td>Services</td>
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<td>Non-Identified</td>
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Table 2: Descriptive statistics

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<th>max.</th>
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<tr>
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Figure 3: Covariate balance checks

[Diagram with various variables and t-statistics]
Figure 4: Total loans transferred to municipalities in control and treatment groups by year.
Figure 5: Smoothing of predicted outputs at bandwidth \( h = 10\% \)

(a) Local linear

(b) Loess, tricube

(c) Polynomial, order 2
Table 3: Treatment effects, total loans.

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<td>coef (se)</td>
<td>coef (se) %</td>
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<td><strong>Panel I: Local linear</strong></td>
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<tr>
<td>Total loans (1st to 4th yrs.)</td>
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<td>9.22</td>
<td>7.67</td>
<td>6.50</td>
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<td>6.56</td>
<td>8.42*</td>
<td>7.79*</td>
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<td><strong>Panel II: Loess</strong></td>
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<td><strong>Panel II: Polynomial order 2</strong></td>
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Note: p-values are * 10%, ** 5%, and *** 0.1%.
Table 4: Treatment effects, average loan.

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<th>h=7%</th>
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<td>(se)</td>
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<td>(se)</td>
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<td><strong>Panel I: Local linear</strong></td>
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<tr>
<td>Avg. total loans</td>
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<td><strong>Panel II: Loess</strong></td>
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<td>Avg. total loans</td>
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<tr>
<td>Avg. total loans</td>
<td>4.41</td>
<td>5.33</td>
<td>5.90</td>
<td>5.81</td>
<td>3.90</td>
</tr>
<tr>
<td>(2nd to 4th yrs.)</td>
<td>(5.13)</td>
<td>(4.91)</td>
<td>(4.07)</td>
<td>(2.52)</td>
<td></td>
</tr>
<tr>
<td>Avg. total loans</td>
<td>1.71</td>
<td>-0.27</td>
<td>0.24</td>
<td>-1.01</td>
<td>-0.19</td>
</tr>
<tr>
<td>(1st-2nd yrs.)</td>
<td>(1.54)</td>
<td>(1.39)</td>
<td>(1.20)</td>
<td>(0.93)</td>
<td></td>
</tr>
<tr>
<td>Avg. total loans</td>
<td>3.13</td>
<td>5.35</td>
<td>5.64</td>
<td>5.38*</td>
<td>2.81</td>
</tr>
<tr>
<td>(3rd-4th yrs.)</td>
<td>(3.82)</td>
<td>(3.66)</td>
<td>(3.02)</td>
<td>(2.22)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1150</td>
<td>1332</td>
<td>1780</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: p-values are * 10%, ** 5%, and *** 0.1%.
Table 5:
Treatment effects (log), Matching by the nearest propensity score, full sample

<table>
<thead>
<tr>
<th></th>
<th>Replacement</th>
<th>No Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Matching</td>
<td>Matching-DID</td>
</tr>
<tr>
<td></td>
<td>(se)</td>
<td>(se)</td>
</tr>
<tr>
<td>Control</td>
<td>0.18*</td>
<td>-0.05</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Treatment</td>
<td>0.47***</td>
<td>0.22**</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>ATT</td>
<td>0.29**</td>
<td>0.27*</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>Matched control</td>
<td>842</td>
<td>1,466</td>
</tr>
<tr>
<td>Matched treatment</td>
<td>1,473</td>
<td>1,466</td>
</tr>
</tbody>
</table>

Note: p-values are: * 10%, ** 5%, and *** 0.1%.
Figure 6: Treatment effects comparing municipalities away from the cutoff.
Figure 7: Sensitivity of the treatment effects to bandwidth specification
Figure 8: Placebo test (face-off between aligned parties)

```
<table>
<thead>
<tr>
<th>Variables</th>
<th>Local linear</th>
<th>Loess</th>
<th>Polynomial order 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total loans (1st to 4th yrs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total loans (2nd to 4th yrs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total loans (1st to 2nd yrs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total loans (3rd to 4th yrs.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

```
bw ● bw=6% ● bw=7% ● bw=10% ● bw=IK
```

```
T otal loans (3rd to 4th yrs.)
T otal loans (1st to 2nd yrs.)
T otal loans (2nd to 4th yrs.)
T otal loans (1st to 4th yrs.)
−1 0 1 2 −1 0 1 2 −1 0 1 2
t Statistic
```

Variables

bw ● bw=6% ● bw=7% ● bw=10% ● bw=IK

Total loans (3rd to 4th yrs.)
Total loans (2nd to 4th yrs.)
Total loans (1st to 2nd yrs.)
Total loans (1st to 4th yrs.)
Figure 9: Party comparison for the average of Total loans (3rd. to 4th yrs.)