Journal of Economics Library
www.kspjournals.org
Volume 3 March 2016 Issue 1

The Impact of Capital Expenditure on the Probability of Reelection of Mayors at the District Level in Peru

By Jorge Luis GUZMAN †

Abstract. Until recently, elected authorities in Peru were allowed to run for re-election. The objective of this study is to test whether voters reward (or punish) elected authorities according to expenditure performance. In particular, I measure the probability of a mayor being reelected subject to their capital expenditure throughout the four-year term. I study the two most recent electoral terms: 2006-2010 and 2010-2014. To deal with the endogeneity of capital expenditure, the model controls for a number of characteristics of the elected authority and his or her political party (including the share of voted obtained in the previous election), for district characteristics and for other characteristics of the municipality. I find that mayors who get reelected for another four-year termare characterized by high levels of capital expenditure throughout the periods of 2007-2010 and 2011-2014. In particular, the years before the electoral processes, 2009 and 2013, seem to be of vital importance to determine the outcome of an election. A more refined question is answered by looking at both timing and type of expenditure which reveals that the electorate values the provision of public goods such as security, electrification, education, health and roads during the electoral term. Voters tend to punish projects related totransportation, communications and plumbing, which are characterized by the destruction of roads in the electoral years.
Keywords. Reelection, Decentralization, Public capital expenditure, Local governments.
JEL. D72, D73, H70.

1. Introduction

Until recently, elected authorities in Peru were allowed to run for immediate re-election. The electoral reform took place in March 2015 with the promulgation of the 30305-2015 law that prevents district mayors from running for immediate reelection. The factors that contribute to the reelection of a district mayor have not been studied in Peru.I test for the impact of capital investment on the probability of reelection of mayors in Peru. There are 1838 provincial and district municipalities throughout the country as of 2015. However, the scope of this research focuses on district municipalities. I have hypothesized that capital expenditure has a positive impact on the probability of the political reelection of mayors throughout the country. In other words, if mayors experience high levels of capital expenditure, they will increase their probability of beingreelected for a second term. Also, the different types of public investments such as capital expenditure in education, health, communications, and many others should increase or decrease the probability of reelection. Thus, the electorate will award incumbent mayors with their votes if they are perceived to make an efficient use of the allocated resources. Moreover, I will also explore other factors that could

† Universidad del Pacifico, Peru.
. +242 06 654 86 13
. jl.guzmanc@alum.up.edu.pe

increase or decrease the probability of being elected for a second termsuch as personal, municipal, district-level characteristics and the types of capital expenditures.

There has been little debate about the question itself in Peru. Research has been made on the debate that deals with the conundrum of whether decentralization improves social welfare or not (see Oates 1972, 1985; Steiner, 1999; Rodden, 2003). Scholars are interested in the evaluation of whether this allegedly democratic process provides a benefit to local populations once policies have been implemented. From an economic perspective, we should be concerned with this question because it affects millions of people who are not fully integrated into the market economy of Peru. That is the reason why the government intervenes through capital investment, in order to correct market failures and reach out for those who need investment the most. Duggan & Martinelli (2014) maintain that elections can serve as mechanisms of accountability that successfully align the incentives of politicians with those of voters.

Additionally, budget assignments, decentralization, and a recent electoral reformseem to be of importance as well since mayors can no longer be immediately elected for a second term and the new legal framework could affect decentralization and development of rural areas themselves. In 2006, regional governments managed approximately 20% of the national budget. In 2010, regional governments and local governments managed almost 38% of the national budget and in 2014, 37% of the national budget. Hence, mayors and regional presidents in Peru have a significant amount of the national budget at their disposal. That is why the question of whether the capital expenditure carried out by them, which is endogenous, has an influence on their reelection process. There is no evidence or research paper that links reelection and public expenditure in Peru.

The objective of this research is to study the relationship between public investment and the probability of reelection of mayors in Peru for two reelections: for those who started in 2006 and decided to run for reelection in 2010 and for those who started in 2010 and decided to run for reelection in 2014. The applied methodology is a logistic regression to estimate the impact of capital expenditure on the probability of reelection at the aggregate and disaggregate level. There is an identification problem that is discussed becauseI suspect that there is a possibility that our estimates are biased. Specifically, capital expenditure could be correlated with non-observable characteristics of the mayor that could also have an effect on the probability of being reelected such as the human capital of the mayor, work experience, ability, etc. The way in which I solve this problem is by using the percentage of votes obtained in a previous election. That instrument allows to account for the non-observable variables that could bias the results. A secondary objective is to identify other determinants of the reelection process.

The methodology of this paper concludes that capital expenditure throughout the years in office has a positive impact on the probability of reelection of mayors and that there are certain types of expenditures such as investments that could increase and decrease the probability of being reelected. In the same manner, carrying out capital expenditures in the electoral years such as 2010 and 2014 could reduce the probability of being reelected if capital expenditures in transportation or plumbing are carried out. The characteristics of the incumbent tend to increase the probability of reelection before the type of political of political party they are a part of. Thus, if somebody is a member of a regional movement or a national political party does not seem to be significant in terms of increasing or decreasing the probability of winning an election.The Peruvian electoral seems to favor personal characteristics rather than political machinery. The characteristics of the district can reduce the probability of being reelected if the district is poor.

My contribution to this political economy discussion is the link between political reelection and capital expenditure at the local government level in Peru. The methodology used is a logistic regression model where I use data from mayors who were elected in 2006 and run for reelection in 2010 and also for those who seek reelection in 2014 after being voted for office in 2010.The databases to construct the dependent variables were provided by both the National Office of Electoral Processes (OficinaNacional de ProcesosElectorales, ONPE), and National Jury of Elections(JuradoNacional de Elecciones, JNE). Information on capital investment and current expenditure was acquired from the Ministry of Economics and Finance of Peru (MEF) from 2007 to 2015. Information on the characteristics of the district were obtained from theCooperation Fund for Social Development (Fondo de Cooperaciónpara el Desarrollo Social, FONCODES) map of poverty and altitude observations from the Ministry of Climate (Ministerio del Ambiente, MINAM). Information on population size was obtainedfrom the National Institute of Statistics and Informatics (InstitutoNacional de Estadística e Informática, INEI). Information on the particular characteristics of each municipality was extracted from the National Registry of Municipalities (Registro Nacional de Municipalidades, RENAMU).

This question is important because the capital budget is assigned each year to cover the basic necessities of the poorest places in Peru. The notion behind government intervention through capital expenditure is that it intervenes in the absence of a market economy. Hence, a place with little private investment might be benefited by public investment and government intervention. Moreover, it would be interesting to explore if the previous system and reelection framework, before the 2015 electoral reform, worked under the reasonable incentives to benefit both the electorate and politicians and whether two terms were considered sufficient by the electorate to carry out an efficient administration process. This type of research has not been done in Peru. This is a political economy paper.

This paper is organized as follows: in section 2 the context is introduced, in section 3 a conceptual motivation of our study is provided. Section 4 discusses the databases. Section 5performs an empirical exploration. Section 6introduces the empirical strategy and methodology. Section 7 outlines the results andsection 8 provides additional insights about the impact of the capital expenditure on the probability of being reelected as a conclusion.

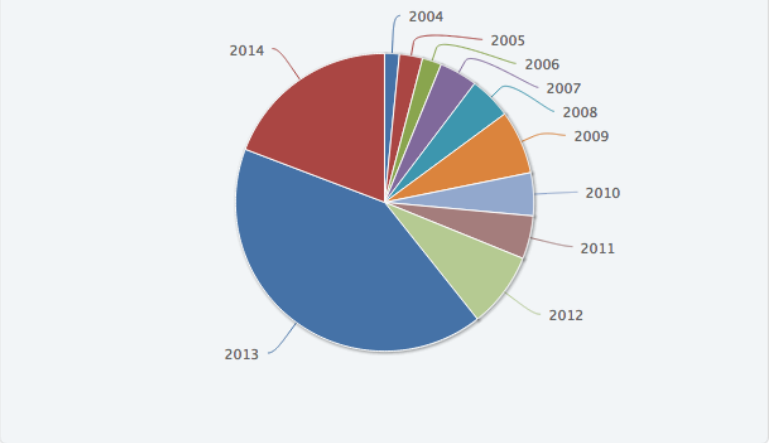
2. Decentralization, budget allocation, and local elections in Peru

In 2001, after the Fujimori regime ended, President Alejandro Toledo was elected and the Toledo administration advocated a different approach towards public investment: fiscal decentralization. The Toledo administration believed that in order to achieve a more democratic country, the regional and local governments should carry out public investment. Therefore, the process of decentralization started when power was removed from the central government and ceded to the regional and local governments. The title of regional president (similar to state governor in the U.S.) was created in 24 departments and 1 constitutional province in Peru. Their task was to coordinate with the Ministry of Economics andFinance (MEF) the amount of resources needed to develop economicallyeach of the 25 regions.

The Peruvian budget operates under the SIAF and SNIP systems. Local administrations send their projects to the M.E.F. where they enter a process of evaluation. There, consultants that evaluate the impact, benefit, viability of the

project at the OPI, which is the office that deems themviable or not.There is a high rejection rate of projects each year as indicated by Figure 1.

Figure 1. *All levels of Government – Public Investments declared viable*



Source: Banco de Proyectos SNIP

This process of depuration of projects allows for the proper incentives to take place to prevent mayors from using the budget at their complete disposal to further their political needs. Through this process, efforts are being made to allow projects that, in theory, benefit local populations in Peru to take place. As a result, the screening of projects is carried out under several controls.

Also, the Budget Commission at the unicameral Peruvian Congress works with representatives from regional and local governments, the MEF to negotiate the allocation of thebudget, which is later made legal when Congress is in session. Local governments such as district and provincial municipalities are to coordinate with the regional governments the amount of resources they need to allocate to each of their local governments in order to fulfill the needs of their populations (MEF).

3. Literature review

The decentralization process has been an issue of international debate in the last few years as Loayza et al (2014) point out when they stressthat "in the last three decades, emerging countries have gone through extensive decentralization reforms that devolved fiscal and administrative authority to regional and local governments".

Economists such as Oates (1999) maintain that it makes local authorities "more accountable". There is this notion that local governments should be able to manage their resources because mayors and local authorities are more aware of the necessities of the local population as opposed to the technocrats in Lima, the capital of Peru. Other economists maintain that the central government should determine the necessities of the country in order to develop it economically. Smoke (2001) argues that evidence of a positive impact of decentralization reforms in low and middle income countries remains mixed in aspects such as public finance, health reform, among others. Smoke & Lewis (2003) stress that the little capacity of local managers has been identified as a bottleneck for a successful decentralization.We will explore this issue in relation to public finance for the case of Peru since the context of this paper operates within the decentralization reform.

The decentralization debate has sprouted several doubts as to whether the budget is being used properly or not. Loayza et al. (2014) study the case of Peru in

"More Than You Can Handle". They maintain that there are several constraints to spend their budget: budget size and the allocation process, local capacity, local needs and political economy constraints. As a consequence, investments have lagged behind and regions have not experienced the expected growth. Moreover, capital investments carried out are not always what the local population needs and several have resulted in corruption scandals from several local authorities ranging from regional presidents to local mayors and minor government officials.

There is a debate about whether decentralization should be gradual. Those who argue in favor of gradual decentralization maintain that there are certain prerequisites such as having educated and politically aware voters, the prevalence of law and order, fair elections, effective political competition, capable local administration and the prevalence of an effective oversight mechanism (Loayza et al., 2014).

However, my focus deals with the possible purpose or intention of the capital expenditure. My contribution to this literature is to test whether political ambition, specifically the reelection process interacts with capital expenditure. Rodden et al. (2003) maintain that irresponsive spending due to soft budget constraints has a detrimental effect. Smoke & Lewis (1996) stress that "poor capacity of local administrators has been identified as an important bottleneck for successful decentralization" which is in the same line of thought as Loayza et al. (2014) when they stress that municipal workers have been incapable of spending their budget due to several human capital constraints. Furthermore, "the size and sophistication of projects may also affect spending" making human capital a valuable asset for the municipality and, possibly, for the reelection process.

Additionally, Smoke (2001) maintains that local administrators have been given "too much functional responsibility rapidly and without appropriate capacity building." This is important for my research since data from the MEF provides us with detailed capital expenditure divided into 25 different types of investments. Due to the decentralization reform, municipalities, regional governments must coordinate with the MEF and Congress (the Budget Commission) to secure funding for their current and capital expenditures a year ahead.

Our motivation comes from "budget related issues, in particular the adequacy of the transferred budget with respect to the local capacity are among the most important determinants of the spending ability" (Loayza et al., 2014). That is the reason why I use 25 different types of spending to capture the effect. Chattopadhyary & Dufflo (2004) and Caselli & Michaels (2009) maintain that gender, elite capture, revenues from natural resources affect the type of spending. However, Araujo et al. (2008) maintainthat elite capture may not play such a relevant role as opposed to studies that look at the governance of decentralization.

For the case of Peru, much has not been written. Castro & Torres (2014) in "Changes in the electoral rules and number of parties: Evidence from a natural experiment in Peru" study the impact of the 29470 law that modified the rules of the regional elections. The new law demanded a new round of elections if no party reached a total of 30% of valid votes at the regional elections. The intention of the law is to make parties more legitimate by giving them more votes. The research suggests that regional parties (or movements) increased, that the results are robust and a proliferation of regional movements throughout the country has taken place, which is consistent with the data from the ONPE and JNE.

There is also a self-selection problem. Not all elected officials run for reelection. Some of them might not think they could win again and they decide to stay out of the race. This paper aims to answer those questions with data from the ONPE and JNE. Our purpose is to study those mayors who seek reelection and the

possible causes of their reelection. A methodology to estimate the proclivity of running for reelection is also used.

Most of the literature that has to do with voting and economic conditions studies the impact on senators, congressmen and congresswoman, state governors and presidents, but not mayors. However, in Canada, Cameron et al (2011) from the University of Western Ontario, decided to study the "economic voting and incumbent mayoral elections in Canada from 1997 to 2010". They test the economic voting theory at the local level in Canada. The theory suggests that incumbent office holders are more (less) likely to be re-elected when the economy is doing well (poorly). They also mention the influence of the "Michigan School" which follows the fundamental premise of economic voting that when voters enter the ballot box a prime consideration influencing their voting decision is an evaluation of incumbent performance. An incumbent is rewarded (or punished) at the ballot for good (or poor) economic conditions. This goes in line with our hypothesis. We argue that voters will reward mayors and municipal administrations that they perceive as efficient localadministrators.

Also, Owens & Wade (1992) suggest that with respect to rational economic voting, voters who regard the government as having done well at economic management during its current term will reward it with their votes at the next election. If there are unfavorable economic conditions, voters will punish the incumbent candidates. They are working with data from 1970s onwards in Japanese House elections. This finding supports our hypothesis because we have argued that voters will reward mayors with their vote if they feel the impact of the local government upon their economic condition. This is consistent with the findings of the paper and similar empirical exercises from Brazil and Portugal. Capital expenditure carried out throughout the term as a mayor, before the electoral year seem to influence the probability of reelection in a positive manner. Particularly, the year previous to the electoral year seems to be the most important.

Anderson & Morgan (2011) also mention a difference between the "real" and the "subjective" economy. The "real" economy pertains to actual objective economic conditions like unemployment rates, inflation or GDP growth. The subjective economy is made up of perceptions of economic conditions. They exist in the mind of individual voters. If voters think or believe that the economy is doing well (poorly) then they are more (less) likely to vote for the incumbent candidate, party or executive. This is consistent with interviews carried out at the ONPE in Peru. Specialists in research maintain that some mayors might be prone to perform capital expenditures in visible areas that might inducea prospective electorate to believe that the local administrationis carrying out investment projects for the benefit of the local population.

The theoretical framework fits in the literature of fiscal decentralization and the efficiency of government discussed by Porcelli (2009). He maintains that there are two types of theories: the classical and the second-generation theory. The classical theory deals with the Tibout's model of local public good provision (Tiebout, 1956) where decentralization takes place with mobile households and public government compete in offering a mix of tax and public goods. The second-generation is proposed by Oates (1972) when he postulates the Decentralization Theorem that solves the trade-off between centralized and decentralized provision of public goods in favor of decentralized provision of public goods if preferences differ across regions and spill-over effects are absent. The assumption behind this theorem is that governments operate in order to maximize social welfare. The Decentralization Theorem fits our scenario where the country is geographically different and ethnically diverse and necessities differ from region to region.

Some principal agent models of electoral accountability are likely to explain this research. Votersare the principals, politicians are the agents and the presence of asymmetric information between them can be seen as the main reason why government performance is inefficient. Decentralization can reduce information asymmetry. In this way, the electorate can increase their control over politicians to stimulate more electoral accountability that would translate into more efficient government activity (Lockwood, 2007).

Working papers from Brazil, Portugal and a cross-section analysis provide evidence for capital expenditure and the probability of reelection as a mayor (Sakurai & Menezes 2008). They find that high levels of capital expenditure in the years previous to the electoral year increase the prospects of being reelected. Katsimi & Sarantides (2011) maintain that incumbents tend to prioritize current expenditure rather than capital expenditure, which is observed in the empirical exploration of this paper where current expenditure tends to be higher than capital expenditure. Moreover, in Portugal, between 1979-2011, Veiga and Veiga (2007) find that capital expenditure near the electoral years and during the electoral term increases the percentage of votes obtained by incumbents at the ballots. Similar studies have not been carried out for the case of Peru.

My contribution to the literature is to test whether capital expenditure increases the probability, the type of capital expenditure that does so, and, personal, local level and district characteristics that could impact as well. Thus, a more comprehensive approach that could serve as an explanatory model for the reelection process in Peru.This has not been done for the case of Peru and the papers that deal with similar questions do not address the different types of capital expenditure that could increase the prospects of a reelection.

4. Data aspects

This research draws information from several detailed databases containing information at the municipal level (local government). There are 1838 local governments (1643 districtand 195 provincial municipalities) in Peru. The focus of this paper is to study the district municipalities. I have information for all district municipalities on public finance, personal, district and municipal-level characteristics.

4.1. Electoral Information

The JuradoNacional de Elecciones (JNE) and the ONPE, the public entities responsible for the organization and execution of the electoral processes, provided information on a number of important variables to construct the dependent variables: reelected in 2010 and reelected in 2014. We take into consideration the incumbents who sought reelection and those who did not in this paper. Thus, the dependent variable is a 1 if reelected and 0 otherwise. The information provided includes full name, age, place of origin, political party affiliation, type of political party affiliation, number of votes each candidate obtained during the election process, number of invalid votes, number of absent voters, among others. We have information for the electoral processes that took place in: 1998, 2002, 2006, 2010, and 2014 for all the available municipalities. In this manner,the information allows us to identify if a mayor was an incumbent and ran for reelection in 2010 or 2014, and study the impact of public expenditure on the probability of being reelected by combining the databases bases from the MEF and the electoral processes. Thus, I can indicate if a candidate ran for reelection, did not run, run for another office, etc. For the period of 2002-2006, 347 mayors were reelected. For the term 2006-2010, 314 mayors were reelected in 2010 from the 1615 who were elected in 2006. For

the 2010-2014term, 293 of the 1605 mayors who initiated their terms in 2011 were reelected in 2014.

One of the most important variables to accurately replicate the results from the electoral organisms is the National Document of Identity (DocumentoNacional de Identidad, DNI) which is the Peruvian ID. It allows for a comprehensive follow-up of individuals throughout years, election processes and if one of them decides to run for something different than a mayor, they can be easily tracked down and eliminated from the database of interest. This single tool allows for the accurate identification throughout time and electoral processes of an individual in a clean manner.

It must be noted that the ubigeos (the unique code used to identify departments, provinces and local districts in Peru) reported by the JNE and ONPE are different from the ones used by the INEI and other entities in Peru. Therefore, to perform a perfect match once all the appropriate databases for this study have been created, the merging of databases must be carried out by the names of the departments, provinces and local districts. If the merging process is not done so in this manner, one could end up with the same ubigeos, but describing different districts.

4.2. Capital investment and current spending

The Ministry of Finance and Economics (MEF) procured information on capital and current expenditure for the 1838 municipalities in Peru. For 2007, we only have information on 739 local governments since the SIAF program was still being implemented for municipalities. But for the 2008-2015period, information for the 1838 local governments is available at a disaggregated level. Not all 1838 are present throughout time, since some of them have recently been created. However, there is information on every existing district at the time.Also, the observations used are annual aggregatesand it is granular to the point where 25 different types of capital expenditure (*funciones*) can be studied at the municipal level. In other words, if roads were being built by the Municipality of Bagua in 2008, the budget from that capital expenditure and the amount executed will be present in our database. The available variables are accrued amounts (*devengados*) and modified institutional budget (presupuestoinstitucionalmodificado, PIM).The fact that the information is fully available from 2008 onwards limits our research to the time scope of 2008-2014. For that same reason, even though there is information available for the electoral processes from 1998 through 2014, only the elections of mayors who were elected in 2006 and ran for reelection in 2010 and those who were elected in 2010 and ran for reelection 2014 can be explored.

In order to construct the percentage of the executed budget, the amount accrued in one year is divided by the budget. These two variables will result in total budget spent and total available budget as formula (1) points out:

$$\frac{Accrued\ \ amount}{Budget} = \%\ Executed\ Budget \qquad (1)$$

This is the standard measure used by the MEF and the SIAF system in order to keep track of the percentage of the budget being used, the percentage of capital and current expenditures carried out by local governments.We hypothesize that municipalities with high percentages of capital spending will increase the probability of reelection of their mayor. On the MEF website, the budget can be tracked on a daily, monthly and yearly basis. However, following Loayza et al (2014) approach the annual aggregates seem to be appropriate for the analysis since "most capital expenditure is concentrated towards the end of the year and is as a result comparing periods other than full years would be misleading." Hence, we construct several indicators of percentage of budget executed: percentage of capital

expenditure and percentage of current expenditure on a yearly basis from 2008 to 2014. These indicators will be the independent variables. Also, we perform the same exercise by type of expenditure.

Additionally, other indicators are constructed as alternative measures of robustness. The accrued amounts are divided by the local population to obtain an indicator of per capita budget expenditure. These variables are created for capital and current expenditures. They provide an insight into how much money is being invested by the government on education, transportation, health and other important public investments that could influence the probability of reelection.

$$\frac{Accrued\ \ amoun\ t}{Population} = \%\ Budget\ Expenditure\ Per\ Capita \tag{2}$$

Thirdly, another indicator is created: accrued amount per voter. This could also indicate the amount of budget executed by the local administration directed towards voters. In particular, the study of the capital expenditure per voter is of interest in order to provide consistency to equation (1).

$$\frac{Accrued\ \ amount}{Population} = \%\ Budget\ Expenditure\ Per\ Voter \tag{3}$$

The indicator of interest is the percentage of capital expenditure carried out on a yearly basis by the local administration. A more refined analysis studies the different percentages of capital expenditure carried out per type of investment such as transportation or education. In order to provide consistency and robustness, the same controls are used in conjunction with the budget expenditure per capita and budget expenditure per voter.

4.3. Municipal characteristics

The National Registry of Municipalities (RegistroNacional de Municipalidades, RENAMU) contains observations form 2002-2014 on several municipal characteristics such as website, main activities carried out by the mayor, number of sessions carried out by the council, among others. For the purpose of this research, the human capital statistics are used as control variables to increase the robustness of the results. In Loayza et al. (2014), the findings shed light on the impact of human capital on capital expenditure. For example, the higher the level of education of the workers at the municipality, the more complex investments they will be able to carry out.

The presumption is that they are more qualified to manage the budget. Extreme examples are given where people with high school degrees work at the municipality and they have to prepare the forms to build a hydroelectric dam. The human capital needed to perform high budget projects is not always available and local administrators might not be able to carry out public expenditures accordingly. The available variables are the number of males and females working at the municipality and also the differentiated levels. There is information on whether they are directors, professionals, technicians, auxiliary workers, janitors and workers contracted via a third contractor (*services*). The number of workers differs from municipality to municipality. As a result, percentages of workers were constructed by type.

$$\frac{Category\ \ of\ Worker}{Total\ \ Workers} = \%\ Workers\ by\ Category \tag{4}$$

Thus, the number of professionals is divided by the total number of workers to obtain the percentage of professionals present at any given municipality. The same

is done for each category of directors, technicians, among others in order to create a comparable variable among the studied municipalities.

4.4. District-level characteristics

The INEI has population data and estimates for the years 2000 to 2015. They are based on several national censuses, the last one took place in 2007. There is information of projected population at the district, provincial, departmental and national level. These data is valuable to control for district population and to construct capital expenditure per capita indicators at the district level. The population variable is used as a control variable in the probabilistic model.

The Cooperation Fund for Social Development (FONCODES) poverty map provides further characteristics of the district. The variables are at the municipal level only available for 2007. Poverty quintiles 1 through 5 are variables that indicate the level of poverty of the population, 1 being the poorest and 5 being the less poor. The percentage of the rural population is also found. These variables will also be used as controls in the probabilistic model.

The Ministry of Climate (MINAM) provides information of the altitude of each district in Peru. It is an important aspect to study since Peru is divided in three regions: coast, highlands and tropical rainforest. As a result, capital expenditures carried out in high altitudes might be slow or not carried out at all due to the many access problems. For example, a district located at high altitude might have poor roads and machinery for construction might have problems to reach the place of the project. This could be translated in delayed investment projects, which could impact the probability of reelection of a mayor in a negative way since public investments might take longer than expected to be completed.

4.5. Descriptive Statistics

Descriptive statistics for both the 2007-2010 and 2011-2014 terms are presented. These indicators have been constructed by merging all the discussed databases and the results are presented in the tables below:

Table 1. *Descriptive Statistics for the Electoral Term 2006-2010*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Ran for Reelection 2010 | Elected in 2006	1615	0.617	0.486	0	1
Reelected in 2010 | Elected in 2006	996	0.315	0.465	0	1
Age | Elected in 2006	996	46.968	8.522	25	79
Sex if male | Elected in 2006	996	0.964	0.187	0	1
Affiliated to a Regional Movement	996	0.459	0.499	0	1
Affiliated to a National Political Party	996	0.419	0.494	0	1
% Agg. Cap. Exp. 2008-2010 | Elected in 2006	996	0.741	0.135	0.215	0.996
% Agg. Curr. Exp. 2008-2010 | Elected in 2006	996	0.848	0.097	0.109	0.995

Source: Author's elaboration

Table 2. *Descriptive Statistics for the Electoral Term 2010-2014*

Variable	Obs	Mean	Std. Dev.	Min	Max
Ran for Reelection 2010 | Elected in 2010	1605	0.626	0.484	0	1
Reelected in 2014 | Elected in 2010	1005	0.292	0.455	0	1
Age | Elected in 2010	1005	47.905	8.753	27	75
Sex if male | Elected in 2010	1005	0.955	0.207	0	1
% Agg. Cap. Exp. 2011-2014 | Elected in 2010	1005	0.714	0.134	0.150	0.991
% Agg. Curr. Exp. 2011-2014 | Elected in 2010	1005	0.822	0.084	0.442	0.978

Source: Author's elaboration

5. Empirical exploration

5.1. Electoral statistics

Not all mayors run for reelection. The results of the 2006 local government elections according to the JNE resulted in the election of 1615 mayors. Hence, for the reelection analysis of 2006-2010, we study the reelection process of 1615 mayors. From this group, 996 decided to run for reelection in 2010 and 619 did not do so. Thus, almost 62% of mayors decide to run for office again. From the 996 incumbents, 314 are awarded with a second term in office, which is approximately 32% of the incumbents who decide to run and 19% of the mayors elected in 2006.

Also, in 2006, 347 out of the 1615 were already in their second term. From those incumbents, 185 sought a third term in office and 59 attained so. Therefore, around 22% of the mayors in 2006 were in their second term and from this group 53% decide to run for a third term with a rate of success of 32%. Hence, being reelected for a second term could influence the likelihood of running for a third office term. Moreover, having been in office for four or eight years could increase their probability of being reelected. Guided by these observations, a variable that indicates a second term is constructed and used in the model as a personal characteristic of the mayor.

In the 2010, the reelection process the results are comparatively similar. The JNE awarded credentials to 1605 mayors as elected. From the 1639 processes, 34 were declared invalid by the electoral organisms. From the 1605 mayors who got elected in 2010, 1005 strived to stay in office for another term in 2014. 293 were reelected to stay in office and 712 were not awarded with sufficient votes from the electorate. Hence, 29% of those who decided to run for office again were reelected and 18% of the mayors elected in 2010 continued in office in 2014. From these same 1605 mayors, 317 were reelected from 2006 to 2010. Then, approximately 20% of the mayors elected in 2010 had been reelected for a second term. From this group of 317 incumbents, 198 sought to stay in power, which would account for around 63% looking for a third term and 67 achieved it. Hence, 47% of those who had already been in office for both 2006-2010 and 2010-2014 stayed in office for a third term. From the same group, 62 had been elected from 2002-2006 and 2006-2010 and 17 stayed in office in 2014 for a fourth term.

The statistics of both reelection periods 2006-2010 and 2010-2014 are similar in various manners. First, in both reelection processes, the reelection rate to stay in office was 22% and 18%, in 2010 and 2014, respectively. Second, the mayors who had already been office for more than one term, 53% and 63% sought reelection for a third term, in 2010 and 2014 respectively. In the same manner, those who had already been in office for more than one term, were successful since 32% stayed in 2010 and 47% stayed in 2014. Thus, indicating that mayors who have been in office for a various terms are more likely to seek reelection and are also likely to be reelected. To what extent does the electorate consider that two terms are sufficient for an administration to benefit the public? This question will be discussed, as results are revealing after the logistic regression analysis.

5.2. The 2007-2010 Capital expenditure

Mayors who were elected in 2006 started their terms the first days of 2007 and finished in 2010. Since there is data available for 739 local administrations in 2007 and 1834 for the years 2008-2014, the years 2008, 2009 and 2010 are explored because the 1605 mayors cannot be followed in a comprehensive manner from 2007 onwards.

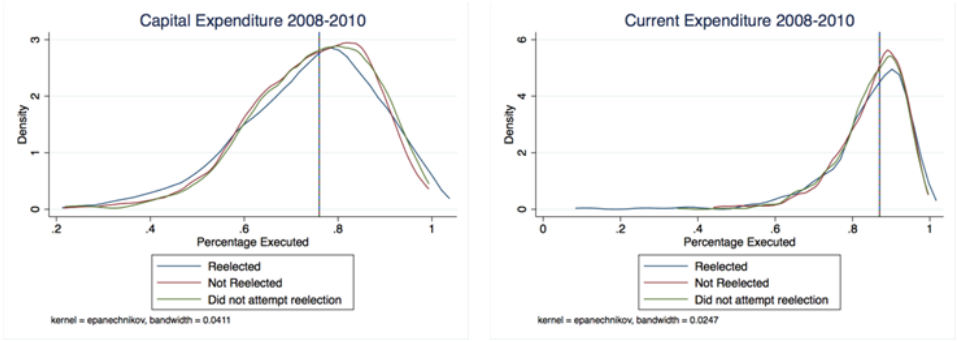


Figure 2. *Aggregate budget expenditure 2008-2010*
Source: Author's elaboration

The distributions indicate the percentages of capital and current expenditures. At the aggregate level, incumbents who were reelected as mayors did not get reelected and those who did not attempt a reelection seem to have similar capital expenditures and the same median of 76%. Therefore, mayors overall seem to execute the same amount of their budgets throughout their terms.

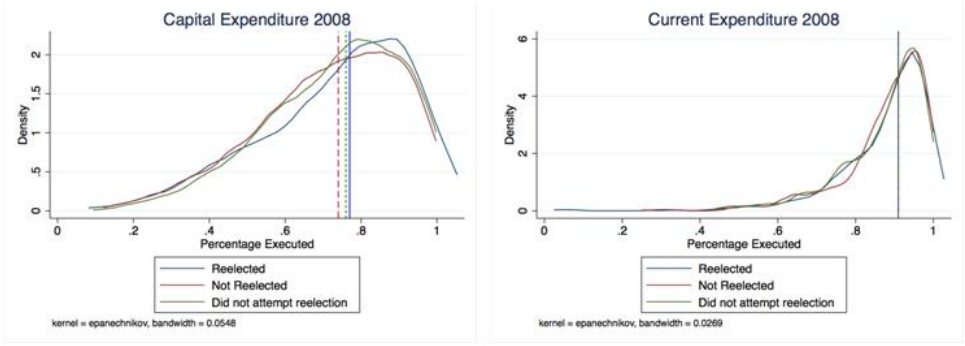


Figure 3. *Budget expenditure in 2008*
Source: Author's elaboration

The capital expenditure carried out in 2008 is different from the aggregate of the 2008-10 term. The capital expenditure for mayors who were reelected is higher than for those who were not and those who did not seek reelection. Mayors who got reelected had a median capital expenditure of 77%. Those who were not reelected had a median of 74% and those who did not seek reelection 76%. Thus, it can be observed that in 2008, mayors who were awarded with votes to continue in office in 2011 had a higher capital expenditure than their peers. In terms of current expenditure, there is no virtual difference since both distributions seem to be similar and the median is the same for the three groups: 91%.

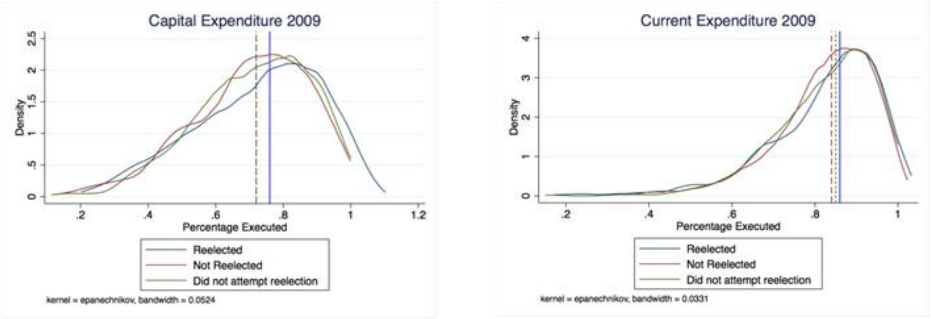


Figure 4. *Budget expenditure in2009*
Source: Author's elaboration

In 2009, the median capital expenditure for mayors who were reelected was 76%. For those who sought reelection but did not attainit was 72% and for those who did not seek reelection was 72%, as well. Hence, those mayors who achieved reelection had higher levels of capital expenditure in 2008 and 2009 with medians of 77% and 76%, respectively. Also, mayors who got reelected achieveda higher level of current expenditure with a median of 86%. Those who did not get reelected had a current expenditure median of 84% and those who did not seek reelection achieved a median current expenditure of 85% of their budget.

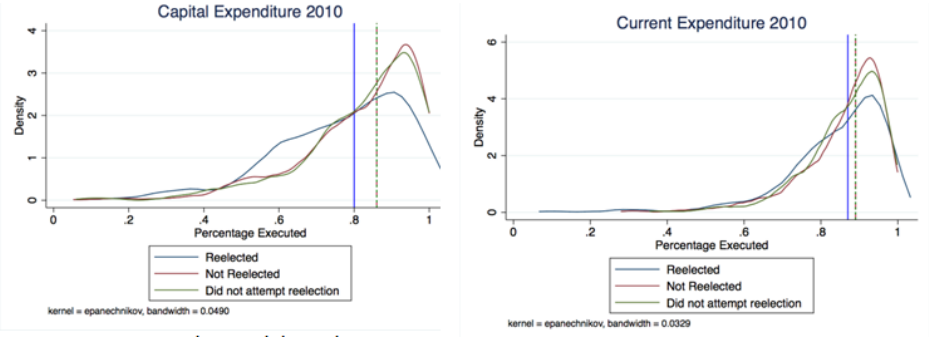


Figure 5. *Budget expenditure in 2010*
Source: Author's elaboration

In 2010 the pattern changes.Overall, the capital expenditures are higher for three groups, but mayors who got reelected had a lower level of capital expenditure with a median of 80%. Those who did not achieve reelection and those who did not seek reelection had a median of 86%. Even though mayors who achieved reelection had lower levels of capital expenditure in comparison to the other groups, the level of expenditure was higher than in previous years. The same pattern occurs in regards to current expenditure when mayors who got reelected had a lower level of capital expenditure with a median of 87% as opposed to their peers of the other groups who had a median of 89%.

During the years 2008 and 2009, mayors who got reelected are characterized by a higher level of capital expenditure in comparison to those who did not get reelected and those who did not seek reelection. However, incumbents who sought reelection and did not achieve it had a higher level of capital expenditure during the electoral year of 2010. Throughout this empirical exploration, a possible explanation could lead to the hypothesis that the electorate rewards mayors who had prolonged and high capital expenditures throughout their terms. In other words, those mayors who were constantly buildings roads, schools, electrifying towns and implementing sewages, thus providing for the basic needs of the local population, were likely to get reelected.

5.3. The 2011-2014 capital expenditure

A similar pattern is observed for the 2010-2014 electoral term. Mayors who are in office throughout these years seem to carry out capital expenditure in the same manner as in 2006-2010. It can be observed that throughout the term that mayors who are reelected had a high level of capital expenditure.

An aggregate analysis of budget expenditure throughout the 2011-2014 term, indicates that there is no actual difference in the medians of those who are reelected, those who lose the reelection process and those who do not seek to continue office with a median of 73% of capital expenditure throughout the four-year term and 84% of current expenditure for those who run for office and 83% for those who do not attempt a reelection process.

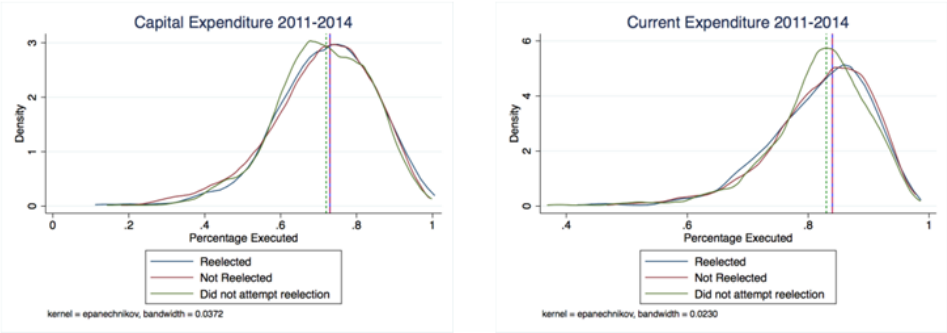


Figure 6. *Aggregate budget expenditure 2011-2014*
Source: Author's elaboration

In the same manner, the study of the timing of capital expenditure could shed light on certain aspects that increase the probability of reelection. Since there is available information for the four years mayors are in office in this 2011-2014 set, a more consistent pattern is observed by looking at the timing. In the first year of office, in 2011, their medians are the same for the three groups: 74% of capital expenditure and 83% of current spending. There seems to be no virtual difference between those who seek reelection, those who do not.

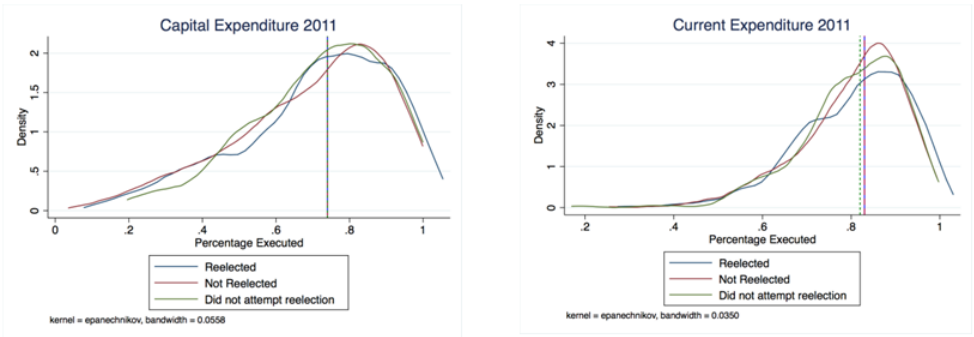


Figure 7. *Budget expenditure in 2011*
Source: Author's elaboration

The second year office indicates a difference in medians. Mayors who attain reelection in 2014 have a median capital expenditure of 75% of their capital budget in 2012 while those who do not attain it and those who do not seek reelection executed 74% of their budget for capital investments.Mayors who do not get reelected had a higher level of current expenditure in 2012 with 84% as opposed to the other two groups with 83%.

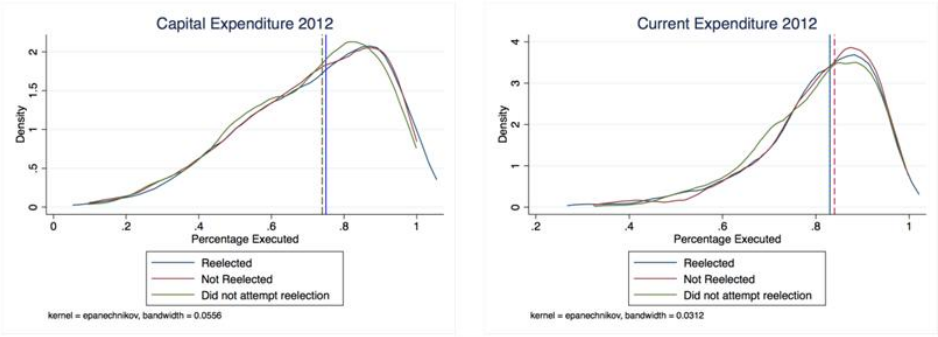


Figure 8. *Budget expenditure in 2012*
Source: Author's elaboration

In 2013, the third year in office, the year before the elections indicates marked differences.Mayors who are reelected for office in 2014, had a capital expenditure of 73%while those who do not attain it execute 71% of their capital expenditure. The third group, those who do not seek reelection, have the lowest level of the three with 68% of capital expenditure. This year is interesting and deserves a more rigorous discussion. First, in the year before the reelection process, mayors are more likely to carry out higher levels of capital expenditure because they are already in campaign and want to make their work more visible to the prospective electorate. Moreover, the dynamics of the budget could also be working in their favor. Public investment projects do not necessarily take a year to be completed. For example, a highway or a hospital could take a few years to be built. Hence, at the third year, if the mayor has been working consistently, the bigger projects with higher budgets could be finished or nearly finished. The completion of these major projects could be finally observed near the end of term and voters could be rewarding the timing of the capital expenditures and also the completion of them at the third or fourth year. This possible scenario could also help to account for the higher levels of capital expenditure since final payments and accruements are being done as projects are being completed.

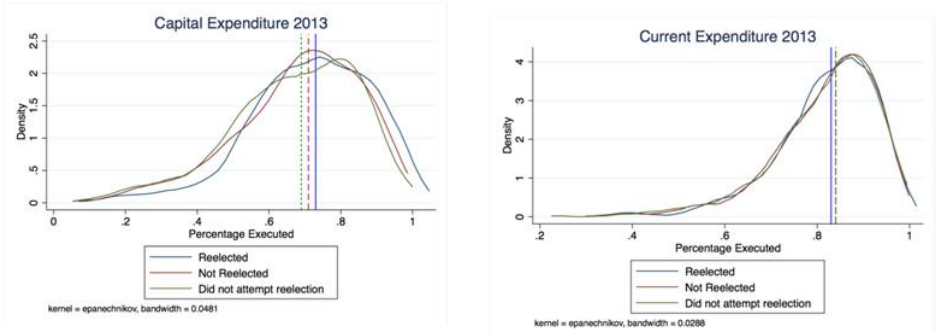


Figure 9. *Budget expenditure in 2013*
Source: Author's elaboration

As in the previous 2006-2010 electoral term, the electoral year of 2010 and, in this case, 2014 is characterized by unprecedented high levels of capital expenditures in comparison to the years throughout the term. While in previous years, capital expenditures oscillated between 73% and 75%, in this year it reaches its peak at 83% of capital expenditure for mayors who got reelected. As in 2010, mayors who do not get reelected have a higher level of capital expenditure than those who get reelected. In 2014, those who do not get reelected attain 85% and those who do not seek reelection, 84% of capital expenditure.

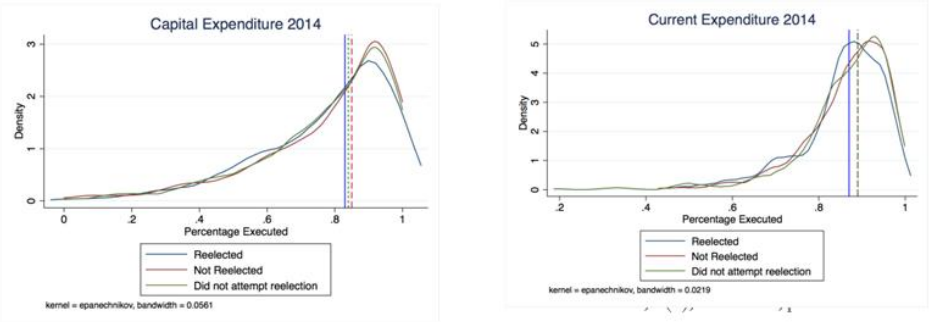


Figure 10. *Budget expenditure in 2014*
Source: Author's elaboration

In both 2007-2010 and 2011-2014, aggregate statistics indicate no virtual difference between levels of capital expenditure with 76% and 73%, respectively. The dynamics seem to reside in the timing these public investment projects are carried out. The exploration of the capital expenditures at the annual level point out that mayors who are awarded with votes to continue in office for another term, have higher levels of capital expenditure in comparison to those who do not get reelected or seek another term in office. Thus, a reasonable hypothesis is that the electorate values the timing in which capital expenditures are carried out.

The model and the empirical strategy advocated in this paper are derived from this empirical exploration. In other words, timing seems to matter and it will be explored since at the aggregative level there seems to be no virtual difference between those who get reelected and those who did not. Moreover, if evidence is found for this hypothesis it could indicate that mayors who benefit the electorate and the public while they are in office by making an efficient use of the resources they are assigned through the budget, are awarded with their votes. Hence, mayors who understand that by carrying out high levels of capital expenditures in a prolonged manner throughout their years in office, benefit themselves by fulfilling a possible ambition to stay in power and also the public. In other words, the previous system where a mayor could be immediately reelected could have provided the appropriate incentives for both politicians and the electorate to benefit from this decentralization process of delegating the ability to carry out public investments according to the need of local populations throughout time.

5.4. Types of Capital Expenditure

A more refined question would be to analyze the types or categories of capital expenditure carried out by local governments throughout Peru. According to the Ministry of Economics and Finance (M.E.F.), there are 25 categories (*funciones*). A disaggregated analysis would take into consideration these variables separately and explore which investments are likely to increase or decrease the probability of reelection. Moreover, timing seems to matter. Then, a secondary hypothesis would study the timing of how these different types of capital expenditure interact with the probability of a mayor getting reelected. Thus, a possible mechanism would indicate that if a mayor invests in education or transportation during the years in office, it could increase its probability of being in office for a second term. In the same manner, if a mayor carries out the reparation of roads or the implementation of water sewages (represented by the plumbing category during the electoral year), the electorate might be likely to punish that behavior for various reasons such as roads being block or a perception that a local authority is carrying out as many investments at the end of its term for the sole purpose of reelection instead of having done so consistently throughout the years in office.

Table 3. *Categories of Capital Expenditure*

Number	Category
1	Legislative
2	Foreign Relations
3	Planning, Management and Contingency Reserve
4	Defense and National Security
5	Public Order and Security
6	Justice
7	Labor
8	Trade
9	Tourism
10	Agriculture and Livestock
11	Fishing
12	Energy
13	Mining

14	Industry
15	Transportation
16	Communications
17	Climate
18	Plumbing
19	Housing and Urban Development
20	Health
21	Culture and Sports
22	Education
23	Social Protection
24	Social Prevision
25	Public Debt

Source: M.E.F.

Using so many variables in a logistic regression could be problematic. Thus, we separate them into five groups:

Table 4. *Categories of Capital Expenditure Divided by Groups*

Group	Categories
Social Protection and National Security	3. Planning, Management, and Contingency Reserve
	4. Defense and National Security
	5. Public Order and Security
	17. Climate
	23. Social Protection
	24. Social Provision
Productive Sectors	9. Trade
	10. Agriculture and Livestock
	11. Fishing
	13. Mining
	14. Industry
Infrastructure and Development	15. Transportation
	16. Communications
	18. Plumbing
	19. Housing and Urban Development
Basic Needs	12. Energy
	20. Health
	21. Culture and Sports
	22. Education
Others	1. Legislative
	2. Foreign Relations
	6. Justice
	7. Labor
	25. Public Debt

Source: Author's elaboration

The productive sector is where most jobs are located. The infrastructure and development groups have a common characteristic: they need to dig, destroy roads in order to carry out these investments. The basic needs group refers to projects such as the electrification of towns, construction of hospitals, schools and culture and sports is included due to anecdotal information that suggests that some electorates perceive as a necessity to have a soccer court and recreational areas. The group named as "others" are investment categories that might not seem as tangible as the rest since it includes investment in justice, labor, repayment of public debt, and foreign relations at the district level.

6. Empirical strategy

6.1. Aggregate capital expenditure

The aim of this research paper is to estimate the impact of capital expenditure on the probability of reelection of mayors at the local government level in Peru.

Therefore two equations are constructed for the 2006-2010 and 2010-2014, respectively:

$$\Pr(Reelected\ in\ 2010 = 1 \mid Elected\ in\ 2006) = F(\beta_0 + \beta_1 eje_{i_{2008}} + \beta_2 eje_{i_{2009}} + \beta_3 eje_{i_{2010}} + \beta_4 eje_{c_{2008}} + \beta_5 eje_{c_{2009}} + \beta_6 eje_{c_{2010}} + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (5)$$

$$\Pr(Reelected\ in\ 2014 = 1 \mid Elected\ in\ 2010) = F(\beta_0 + \beta_1 eje_{i_{2011}} + \beta_2 eje_{i_{2012}} + \beta_3 eje_{i_{2013}} + \beta_4 eje_{i_{2014}} + \beta_5 eje_{c_{2011}} + \beta_6 eje_{c_{2012}} + \beta_7 eje_{c_{2013}} + \beta_8 eje_{c_{2014}} + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (6)$$

where F(.) is a cumulative distribution of the logistic type, the dependent variable for (5) is whether he or she is reelected in 2010 or not given that he or she was elected as a mayor in 2006 for (5) and whether he or she is reelected in 2014, given that he or she was elected as mayor in 2010 for (6), the β indicates the percentage of capital expenditure executed on a yearly basis from 2008 to 2010 for (5) and from 2011 to 2014 for (6) for both capital and current expenditures, Γ is a vector that includes characteristic from the mayor such as age, sex, whether it was reelected in a previous electoral term, and type of political affiliation, Ψ is a vector that includes district-level characteristics such as percentage of the rural population, population size, poverty quintiles, Ω is a vector that includes characteristic of the municipalities themselves such as human capital and canon income, Θ represents the percentage of votes obtained in the 2006 municipal elections for (5) and 2010 municipal elections for (6), and μ_i is the error term.

These specifications represent the importance of timing and will help in the determination of which years could be more important than others. We hypothesized that the years before the reelection are important as suggested in Portugal (see Veiga and Veiga, 2007; Sakura and Menezes, 2008). A possible problem might be that when the percentage of capital expenditure is calculated, most of the dynamics could be reside in the denominator and this could alter the results. Therefore, for robustness, two methodologies are used: capital expenditure per capita and capital expenditure per voter.

Equations (5) and (6) are estimated with the same dependent variables and controls, but the indicators of capital expenditure change. In one set we use per capita expenditure and in another pair of equations we use expenditure per voter.

The main model is the one that uses percentage of capital expenditure, but for consistency and robustness, the per capita and per voter models might provide are explored, which would provide further evidence for the hypothesis that capital expenditure increases the probability of being reelected. Moreover, by using population and voters as deflators, the notion that the denominator plays an important role in the estimation of the percentage of capital expenditure in the main model could be solved and more accurate and robust results could be observed.

6.2. Disaggregated capital expenditure

What types of capital expenditure impact on the probability of being reelected? This is a question of greater interest because it looks at detailed statistics once a relationship between aggregate capital expenditure and reelection has been established. Therefore, these equations will indicate the impact of investments in transportation, education, health, culture and sports, and many others on the probability of being reelected for another term as a mayor.

The main equations are:

$$\Pr(Reelected\ in\ 2010 = 1 \mid Elected\ in\ 2006) = F(\beta_0 + \beta_1 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2008}} + \beta_2 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2009}} + \beta_3 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2010}} + \beta_4 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2008}} + \beta_5 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2009}} + \beta_6 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2010}} + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (7)$$

$$\Pr(Reelected\ in\ 2014 = 1 \mid Elected\ in\ 2010) = F(\beta_0 + \beta_1 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2011}} + \beta_2 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2012}} + \beta_3 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2013}} + \beta_4 \sum_{i=1}^{5} \Pi_i\ eje_{i_{2014}} + \beta_5 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2011}} + \beta_6 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2012}} + \beta_7 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2013}} + \beta_8 \sum_{i=1}^{5} \Pi_i\ eje_{c_{2014}} + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (8)$$

where F(.) is a cumulative distribution of the logistic type, the dependent variable for (7) is whether he or she is reelected in 2010 or not given that he or she was elected as a mayor in 2006 for (8) and whether he or she is reelected in 2014, given that he or she was elected as mayor in 2010 for (8), Π is a vector that indicates the 5categories that group the 25 types of capital expenditures (see table 4), the rest is equal to equations (5) and (6), respectively.

For robustness, I use the per capita and per voter equations for these models, as well. Thus, each group of types of expenditure is divided per capita and per voter.

6.3. Identification problem

The expenditure carried out by the mayors and his or her administration could be correlated with non-observable variables. Generally speaking, politicians with higher levels of education and experience and ability are more likely to execute their budget designated for capital expenditures and that might increase their chances of being reelected. This could generate a non-observable bias due to an omitted variable problem. Since we have the percentage of votes obtained in the previous elections, the first time they were elected, this variable captures several non-observable attributes. Thus, we can control for the percentage of votes obtained in the 2006 for the 2010 reelection attempt and the votes obtained in 2010 for the reelection process of 2014.

7. Results

7.1. Aggregate results

7.1.1. The 2010-2014 period

An increase in one standard deviation in percentage of capital expenditure in 2013 is associated with an increase of 3.19 percentage points on the probability of being reelected in 2014. In the same manner, being young is also significant and it increases the probability of being reelected by 19.9 percentage points. A t-test for difference in means for the percentage of capital expenditures carried out from 2011 to 2014 is done. There is evidence to support the hypothesis that the difference in means from those who are reelected and those who did not do so are not different from 0 with the exception of 2013. Thus, the year that matters the most is the one previous to the reelection. Having been elected for a third or forth term has a positive sign which could indicate that there is a positive relationship between having been in office and the probability of being reelected for another term.

However, gender is not statistically significant in this set. The results are robust to a series of controls at the personal, district and municipality level. When the per capita and per voter models are ran, the results are consistent, and an increase of one standard deviation in the percentage of capital expenditure in 2013 increase the probability of reelection by 6.31 percentage points. Being young increases the

probability by 20.4 percentage points.The non-observables reflected on the voted obtained in the 2010 elections indicate that a one standard deviation increase on this variable increases the prospects of getting reelected by 10.3 percentage points.

Table 5. *Timing of Capital Expenditure 2011-2014*

Variables	Marginal Effects	Marginal Effects	Marginal Effects	Marginal Effects
% Votes obtained in 2010			**1.122*** **	**1.112*** **
			(0.143)	(0.143)
% Curr. E. 2011				0.137
				(0.134)
% Curr. E. 2012				-0.207
				(0.134)
% Curr. E. 2013				0.163
				(0.155)
% Curr. E. 2014				-0.191
				(0.158)
% Capital E. 2011	0.0470	0.0323	0.0164	0.0148
	(0.0745)	(0.0767)	(0.0744)	(0.0756)
% Capital E. 2012	0.00900	-0.0174	-0.0298	-0.0247
	(0.0775)	(0.0774)	(0.0756)	(0.0765)
% Capital E. 2013	**0.216****	**0.203****	**0.181****	**0.185****
	(0.0882)	(0.0877)	(0.0860)	(0.0864)
% Capital E. 2014	-0.0519	-0.0311	-0.0258	-0.0234
	(0.0707)	(0.0701)	(0.0685)	(0.0689)
Is a male candidate		0.0127	-0.0110	-0.00120
		(0.0686)	(0.0683)	(0.0674)
Young (less than 40)		**0.206*****	**0.200*****	**0.199*****
		(0.0421)	(0.0412)	(0.0413)
Elected 2006-2010		**0.0784****	0.0265	0.0238
		(0.0380)	(0.0362)	(0.0361)
% of Rural Population		-0.0356	-0.0294	-0.0212
		(0.0648)	(0.0632)	(0.0632)
Ln Pop. 2011		-0.00505	0.0221	0.0229
		(0.0141)	(0.0141)	(0.0142)
District in Poverty Quintile1		-0.0496	0.00631	0.00642
		(0.0776)	(0.0771)	(0.0770)
District in Poverty Quintile 2		-0.0316	0.0201	0.0228
		(0.0693)	(0.0697)	(0.0698)
District in Poverty Quintile 3		-0.00364	0.0416	0.0434
		(0.0689)	(0.0720)	(0.0722)
Altitude		**-2.35e-05***	-9.21e-06	-1.02e-05
		(1.31e-05)	(1.30e-05)	(1.29e-05)
Observations	1,005	1,004	1,004	1,004
Adjusted R-squared	0.00654	0.0423	0.0869	0.0907

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Therefore, there is evidence to support the notion that capital investment carried out before the electoral year increases the probability of being reelected. Specifically, the capital expenditure in the year before the reelection process seems to be the most statistically significant. Factors such as being young and other personal characteristics seem to increase the probability of getting reelected, as well. Altitude seems to impact on the probability in a negative manner due to the sign. Thus, there is evidence to suggest that the timing of capital expenditure is likely to improve the probability of reelection.

7.1.2. The 2006-2010period

The results from equation (5) provide evidence to support that timing and capital expenditure before the electoral year increase the probability of getting

reelected for another term in 2010.A one standard deviation in the percentage of capital expenditure increases the probability of being reelected by 2.73 percentage points in 2008, 3.61 percentage points in 2009 and it decreases it by 8.2 percentage points in 2010. Thus, there is a positive relationship between capital expenditure and the probability of being reelected in the period before the electoral year. This relationship is negative in 2010. The results are robust to a series of controls that account for personal characteristics of the mayor, district, municipality and the votes obtained in 2006 election. In the 2010-14 the sign for capital expenditure in the electoral year is also negative which could indicate that high levels of capital expenditures in the electoral year could be detrimental to the reelection efforts.This question can be answered in a more refined way, once the disaggregated results are observed.

Also, by performing a t-test for difference in means, in 2009, a year before the 2010 elections, the hypothesis that the means for those who get reelected and those who do not are equal in terms of capital expenditure of that year can be rejected. As a result, there is more evidence to suggest that the most important year before a reelection process is the year before the election, 2009 in this case. Additionally, a one standard deviation on the percentage of votes obtained in 2006 (the instrument used to capture non-observable variables)increases the probability of reelection by 10.5percentage points. Being a male incumbent increases the probability by 20.4 percentage points, being less than 40 years of age increase the probability by 10.4 percentage points, being a mayor in the poorest poverty quintile reduces the probability by 17 percentage points and being in the second poorest by 12 percentage points. The type of political party does not seem to be significant.

Table 6. *Timing of Capital Expenditure 2008-2010*

Variables	(1) Marginal Effects	(2) Marginal Effects	(3) Marginal Effects	(4) Marginal Effects
% Votes obtained in 2006			**1.121*** **	**1.123*** **
			(0.150)	(0.150)
% Capital E. 2008	**0.151***	**0.200** **	**0.138**	**0.146***
	(0.0879)	(0.0886)	(0.0867)	(0.0885)
% Capital E. 2009	**0.276*** **	**0.231** **	**0.198** **	**0.205** **
	(0.0937)	(0.0925)	(0.0904)	(0.0925)
% Capital E. 2010	**-0.523*** **	**-0.548*** **	**-0.532*** **	**-0.505*** **
	(0.0874)	(0.0879)	(0.0851)	(0.0869)
% Curr. E. 2008				0.0955
				(0.157)
% Curr. E. 2009				-0.0607
				(0.141)
% Curr. E. 2010				-0.179
				(0.132)
Is a male candidate		**0.199*** **	**0.203*** **	**0.204*** **
		(0.0540)	(0.0514)	(0.0515)
Young (less than 40)		**0.120*** **	**0.104*** **	**0.104*** **
		(0.0383)	(0.0369)	(0.0369)
District in Poverty Quintile 1		**-0.213*** **	**-0.175** **	**-0.174** **
		(0.0674)	(0.0696)	(0.0703)
District in Poverty Quintile 2		**-0.158** **	**-0.117***	**-0.116***
		(0.0625)	(0.0649)	(0.0652)
District in Poverty Quintile 3		-0.0569	-0.0256	-0.0268
		(0.0621)	(0.0644)	(0.0646)
% of Rural Population		0.0221	0.0514	0.0482
		(0.0637)	(0.0621)	(0.0622)
Ln Pop. of 2008		-0.0171	0.00784	0.00905
		(0.0145)	(0.0146)	(0.0147)
Altitude		-1.97e-05	-8.94e-06	-8.28e-06

		(1.30e-05)	(1.28e-05)	(1.28e-05)
Elected in 2002-06		-0.0279	**-0.0909*** **	**-0.0932*** **
		(0.0360)	(0.0334)	(0.0333)
Affiliated to a Regional Movement		0.0155	0.0178	0.0195
		(0.0584)	(0.0570)	(0.0569)
Affiliated to a Local Organization		0.0182	-0.00211	0.000374
		(0.0858)	(0.0825)	(0.0826)
Affiliated to a National Political Party		0.0160	0.00911	0.00956
		(0.0588)	(0.0574)	(0.0573)
Observations	996	995	995	995
Adjusted R-squared	0.0320	0.0790	0.119	0.121

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7.2. Self-Selection and Random Choice

Not all mayors decide to run for reelection. Approximately, 40% of them decide not to do so in both periods 2006-2010 and 2010-2014. Hence, I use a logistic regression to identify possible factors that could contribute to the decision of whether to seek reelection or not. Equations (5) and (6) estimate the probability of an incumbent who decides to run for reelection in 2010 and 2014, respectively:

$$\Pr(Run\ for\ reelection\ in\ 2010 = 1 \mid Elected\ in\ 2006) = F(\beta_0 + \beta_1 eje_{i_{2008}} + \beta_2 eje_{i_{2009}} + + \beta_4 eje_{c_{2008}} + \beta_5 eje_{c_{2009}} + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (9)$$

$$\Pr(Run\ for\ reelection\ in\ 2014 = 1 \mid Elected\ in\ 2010) = F(\beta_0 + \beta_1 eje_{i_{2011}} + \beta_2 eje_{i_{2012}} + \beta_3 eje_{i_{2013}} + + \beta_5 eje_{c_{2011}} + \beta_6 eje_{c_{2012}} + \beta_7 eje_{c_{2013}} + + \Gamma\theta + \Psi\delta + \Omega\phi + \Theta\pi + \mu_i) \quad (10)$$

where the dependent variable is discrete indicating a 1 if the candidates runs for reelection and a 0 otherwise,β indicates capital and current expenditures from the years previous to the electoral year. Then, for (9) there is information from 2008 and 2009 and for equation (10) there is information from 2011 to 2013. The controls for (9) and (10) are the same as equations (5) and (6), respectively.

The results obtained from (9) indicate that gender, altitude, the poorest poverty quintile, the natural log of the 2008 population and having been elected as a mayor from 2002-2006 are variables associated to the probability of running for re-election. An increase in one standard deviation of altitude seems to reduce the probability of reelection by 6.1 percentage points, an increase in one standard deviation of the log of the 2008 population increases the probability by 3.2 percentage points, and being a mayor in the poorest poverty quintile decreases the probability by 19.2 percentage points.

The results from (10) to indicate that percentage of capital expenditure executed in 2011 and 2013 are statistically significant and that an increase in one standard deviation on the percentage of capital expenditure in 2011 and 2013 decreases the probability by decreasing 3.05 percentage points in 2011 and increases it by 3.28 percentage points in 2013.

Also, altitude of the district seems to matter since an increase in one standard deviation from altitudedecreases the probability of running for reelection by 14.3 percentage points. By looking at the signs, there seems to be a negative relationship of running for reelection with the information from 2011 because one has just started his or her term. However, the sign changes in 2013, when there is more information on what voters want and how one has performed throughout the therm. Then, it is intuitive to think that the performance of 2013, has a positive

relationship with the prospect of a reelection in 2014 because incumbents already have an idea of how voters perceive them and the way in which public expenditure has been carried out throughout these years.

There are several differences and similarities found in the results of these two identification equations. First, re-election is less common in districts located at higher altitudes. A possible mechanism might be associated with the fact that it is difficult to carry out capital expenditures due to the harshness of the high altitude environment. Secondly, in eq. (10) capital expenditure in 2013 has a positive sign which could be indicate of the importance of this year for making a decision. It is possible that incumbents wait until the year before elections to make a final decision, having taken into consideration how they did, the perceived opinion of the public and other factors such as contestants to make a final choice. The negative sign in altitude could be linked to the inability of being able to perform projects in both2011 and 2012. The fact that the sign is negative could be indicate that mayors who are located in high altitude districts might reconsider running for mayor due the inability of carrying out public investments and environmental hardships.

Even though having been in office does not seem to be significant, the signs for having been in office between 2006-2010, the previous term is negative as well as having been in office between 2002 and 2006. This could open the question of whether applying for a third term is desirable by most mayors. These results are not consistent with the fact that approximately more than 50% of those who have already been in office for more than one term, decide to run for a third reelection. Age also has a negative sign which could indicate that mayors who are older, are not likely to run for reelection. Nevertheless, being young or not is not significant, but has a negative sign for both (9) and (10).

Another possible way of correcting for the self-selection bias is the argument that those who do not seek reelection and the incumbents who do not succeed have virtually similar capital and current expenditures throughout their terms. By looking at the data exploration, mayors who decide not to run and incumbents who lose are similar when the timing of their capital expenditures is analyzed (see Figures 2-9). Therefore, randomization could be taking place and this statistical phenomenon could determine that the three groups are virtually similar and what makes them decide whether they seek reelection or not is a random element. Thus, providing consistency for the probabilistic model since the element of bias in the estimates would be present in a less significant manner.

Further evidence is provided when a hypothesis test performed as a t-test for difference in means is carried out for the capital expenditures throughout the 2008-2010 and 2011-2014 periods. Evidence is found to support the notion that the means are not dissimilar in the years 2008 and 2009. However, the means are not similar in 2010. In the same manner, evidence is found to support that the hypothesis that the difference in meansis equal to 0 is rejected in 2013, but that is not the case for previous years. Thus, indicating that the performance of the year before the reelection could be influential in the decision for the 2011-2014 period, since the years before do not seem to be statistically different and the evidence is found not to reject the hypothesis that the means are equal. This provides evidences to support the idea that randomization could be taking place and the results are likely to be unbiased.

This empirical exploration, combined with the results from the identification equations (9) and (10) where capital expenditures of the years before the reelection, 2009 and 2013, seem to be important in making a decision of seeking reelection. As a result, candidates who do not consider that they have performed a high capital expenditure term might decide not to seek reelection. Since those who seek

reelection and lose and those who do not decide to run are virtually, similar, again, randomization might be taking place in either fashion.

7.3. Disaggregate Results

Since there is evidence to support the hypothesis that capital expenditure increases the probability of a mayor being reelected for another term, a more refined question can be explored: what type of capital expenditure could help a mayor increase his or her probability of being reelected? This is the second layer of the hypothesis.

In order to answer this question, the 25 types of investments (*funciones*) have been group into five categories: social protection and security, productive sector, infrastructure and development, basic needs and others.

For the 2011-14 capital expenditure period, a one standard deviation on the percentage of votes obtained in 2010 (the instrument used to capture non-observable characteristics of the mayor and correct for possible bias) increases the probability of being reelected by 9.26 percentage points. Investments carried out on security tend to have a positive sign throughout the period indicating a possible increase in probability. However, in the electoral year, 2014, if capital expenditures are carried out on security, an increase of one standard deviation on security results in a decrease of 2.7 percentage points on the reelection prospects of 2014. These results are statistically meaningful.

Similarly, when the infrastructure and development group is studied, there are positive signs on the years before the reelection, indicating that projects that relate to communications, transportation and plumbing before the electoral year might increase the probability of being reelected in 2014. However, a negative sign is found in 2014 indicating that if these projects are carried out in the electoral year, it might have a negative impact on the probability of being reelected.

In 2013, an increase of one standard deviation on capital expenditure on basic needs increases the probability of being reelected by 3.5 percentage points. In other words, investments projects that relate to energy, health, education and sports and culture have a positive impact on the reelection prospects. This is statistically significant.

An interesting aspect to observe is that investments in the productive sector such as fishing, agriculture and livestock, tourism, mining, trade have a negative sign during 2011 and 2012, and a positive sign by 2013 and 2014. It could suggest that investments in these areas to create jobs might take longer to be perceived as tangible benefit by the electorate. Nevertheless, the information is explored there are interesting findings: mayors who spend less on these categories tend to be reelected. Consistently, mayors who spend more on these categories are less likely to get reelected. This is a counter-intuitive observation since one would expect that investments in productive sectors at a local level would be associated with a higher approval from the public. A possible explanation would reveal that the preferences of the public tend to favor basic needs such as electricity, health and schools to be provided by the public and not the creation of a productive sector. Therefore, the electorate would applaud investments that result in the provision of public goods and not in the creation of jobs. An alternative interpretation, and not far from the first interpretation would suggest that the electorate would value the provision of public goods and consider that enterprises and jobs should be generated by the free market, microenterprises, companies and not by the local government.

For the 2008-2010 capital expenditure period, a one standard deviation in percentage of votes obtained in 2006 (which is used as an instrument to capture non-observable characteristics of the mayor and reduce possible bias) increases the probability of being reelected in 2010 by 9.3 percentage points, a one standard deviation on the percentage of capital expenditure on security in 2008 increases the

probability by 2.72 percentage points, in 2009 by 4.2 percentage points and an increase in one standard deviation in 2010 causes the probability of being reelected to be reduced by 4.3 percentage points.

In the same manner, an increase of one standard deviation on the percentage of capital expenditure on infrastructure and development reduces the proclivity of being reelected as a mayor in 2010 by 11.3 percentage points which is consistent with the negative signs found in 2014. This finding is quite intuitive since this group considers communications, transportation and plumbing. In other words, these are public investments that are characterized by the digging, destruction and reconstruction of roads. Anecdotal information suggests that some mayors tend to destroy roads in order to reconstruct them in the electoral year. This might cause an increase in traffic and an unpleased electorate. Therefore, it is intuitive to observe a decrease in the probability of being reelected after performing these types of investments in the electoral year since a prospective electorate might perceive the execution and timing of these projects with mistrust. Possibly, they might question the timing of these projects since the mayor had three years to do this, and suddenly he or she decides to do so at the very last moment, possibly, to portray an image of someone who carries out projects for the benefit of the community.

Additionally, the group named basic needs that encompasses the categories of energy, health, education, and culture and sports seems to have a positive effect on the reelection prospects. An increase in one standard deviation on the percentage of capital expenditure for basic needs in 2008 increases the probability of being reelected in 2010 by 2.5 percentage points. Thus, electrifying rural areas, building schools, hospitals and football courts are likely to increase the probability of being reelected. However, an opposite result occurs in the electoral year. A one increase in the standard deviation of the same group in 2010 results in a 2.7 percentage point decrease on the prospective of being reelected.

7.4. Possible Mechanisms

Voters seem to reward the completion of projects and that might be reflected in the fact that 2009 and 2013, the years before the 2010 and 2014 elections seem to matter the most. The resultsfrom thelogisticregressions indicate positive coefficients for capital expendituresin both2009 and 2013, which is consistent with the notion that voters reward constant and prolonged capital expenditure. By the third year, the electorate can evaluate the administration of a mayor. It is also consistent that mostprojects characterized by large budgetsmight take a year or two to be completed, they might take three or four and by then, there is likely to be a higher capital expenditure in order to finish these projects and prospective voters observe the results of the local administration by then.

By analyzing disaggregated results, there is evidence to suggest that it is important how much budget is being executed, but also certain types of expenditures will make the electorate more prone to vote for the reelection of their mayor. It is interesting to observe that plumbing, transportation and communication investments in 2010 and 2014 seem to hinder the prospects by having negative signs. These investments can be characterized by the destruction of roads in order to build or repair roads and install pipes under the ground. They would result in roads being blocked and increments in traffic jams, which could result in an increase in disapproval of a prospective electorate. Some voters might maintain that the mayor is carrying out these projects in order to show the public that they are doing something for the local population, but other might perceive that the local administration could have done it before. Hence, punishing the bad timing and negative consequences of the project.Therefore, providing support for the hypothesis of this paper that timing matters when it comes to capital expenditure and voters reward (or punish) this behavior from local administrations.

Following the same line of thought, voters do reward certain investments of local administrations such as projects inenergy, security, culture and sports, communications, transportation in the years before the electoral process. These results shed light on a debate that has been taking place in Peru of whether local administrations cover the needs of the population or not and also what are the needs of the population. By observing these results, the electorate reveals their preferences and needs. The public seems to demand electrification projects, security, more roads. To put it simply, the public is expecting the local government toprovide them with public goods. Mayors who successfully understand the needs of the local population and improve their quality of life will get reelected. This seems self-evident, but when observing investments in other fields such as in the productive sector (that encompass tourism, trade, fishing, mining, and industry) that hinder the prospects of a reelection it raises a question of whether the electorate wants the provision of public goods from the local government or wants them to develop the district economically. The disaggregated results would suggest that they prefer the provision of public goods leaving the question of development to whom? A possible answer suggested by a climate of micro enterprises and free market in Peru would indicate that the electorate does not expect a local administration to intervene in this aspect. There is a possibility that the public perceives economic development in productive areas such as fishing, tourism, and trade as efforts from themselves, the market or the central government. Another possible answer is that since Peru is a country with high poverty levels, the electorate values projects that are regarded as beneficial to their direct needsrather than projects that do not impact on them as directly since they might have the human capital to be hired by industries that involve fishing, mining, trade, or tourism.

Moreover, according to ONPE officials, voters seem to reward public investments that are visible. Then, mayors would be more likely to invest in construction projects, building soccer courts, that might be faster than an economic policy to foster investments in tourism, agriculture and livestock, trade, mining, and industry. This would be consistent with the results from the group constructed as Others. This group takes into consideration investments on legislative, foreign relations, labor, and public debt, which are types of investments that might not result in immediate, tangible and observable results. Therefore, these investments involve policy making, planning and long-term results which are characterized by being not statistically significant and with low levels of capital expenditure.

Therefore, mayors might not be likely to carry out long-term policies that might not increase their probability of being reelected for a next term which is consistent with the data exploration where we find that mayors who do not get reelected have higher levels capital expenditure in the productive areas, suggesting economic policies which might not result in tangible benefits for the community in the four-yearterm. That might explain why mayors who are elected are characterized by low levels expenditures in areas such as mining, tourism, trade, industry and high levels of expenditure in short-term and more tangible capital investments in areas such as infrastructure, the provision of public goods (measured through the basic needs group and social protection and security). Hence, the electorate wants short-term tangible projects and the provision of public goods.

An alternative mechanism that could explain the aggregate dynamics of reelected mayors executing less capital in comparison to their peers who are not reelected, would be the fact that mayors who are better at campaigning are doing so during 2010 and 2014. Therefore, even though they have lower levels of capital expenditures that year, the electorate rewards them with votes. This would be consistent with the hypothesis that the electorate rewards high and prolonged

capital expenditure since mayors who are reelected tend to be characterized by that, but the electorate would be likely to reward campaigning, good politicians, kissing babies, popularity showers and what not. I do not have a way to control for this since I do not posses approval information per district for the studied districts throughout 2006-2014. Therefore, testing for approval and data on campaigning might not be accessible. Hence, the instruments of percentages of votes obtained in the 2006 and 2010 elections are also important in the reelection process because they capture non-observable variables such as charisma, campaign organization, physical attributes that determine an election and seem to positively influence the reelection process.

8. Conclusion

In conclusion, there is evidence to support the hypothesis that mayors who have highlevels ofbudget expenditure are rewarded with votes to be reelected. As a whole, the aggregate budget expenditure throughout the four years of tenure does seem to be different for those who are reelected and incumbents who are not. Nevertheless, timing seems to be important and the type of expenditure, as well. In other words, mayors who have high levels of capital expenditure, as in public investments, throughout their terms are awarded with votes. In particular, mayors who have higher levels of budget expenditures in the year before the electoral year. Therefore, 2009 and 2013 are important years because projects might be coming to an end and the electorate would have already evaluated the administration in terms of efficiency. As a result, the public might reward or punish incumbents who seek reelection at the ballots.

To recapitulate, if a mayor is elected in 2006 for office, he or she will start in 2007. Mayors who are likely to get reelected will be characterized throughout 2007, 2008 and 2009 with high degrees of capital expenditure translated into buildings roads, highways, providing security to the local populations throughout their terms. In 2010, the electoral year, after a four-year term, mayors who get reelected will be characterized by an increase in capital and current expenditures, but a decline in comparison to their peers who do not get reelected or do not attempt reelection. The possible reason could be a different allocation of time in comparison to other mayors. Mayors who seek reelection will certainly allocate the time of 2010, the year of the next election, to their campaigns. Their chances of being elected could be higher, but we do not have a way of testing this hypothesis. The same occurs for the 2010-2014 period. Mayorswho are elected in 2010, have a similar capital expenditure behavior throughout their terms and also during the electoral year.

A second layer of the analysis, one disaggregated into five groups: social protection and security, productive sector, infrastructure and development, basic needs and a category named as others, reveals that not only timing is important in the execution of public finance projects, but also the type of projects. Results suggest that the provision of public goods in the form of electrification projects, building of schools, hospital, and roads during the electoral term and before the year of a prospective reelection are likely to have a positive impact on the probability of being reelected. Moreover, projects related to infrastructure and development such as the construction, reparation of roads, implementation of sewages and other projects that are characterized by the destruction of roads in 2010 and 2014, the electoral years, have a negative and statistically significant impact on the reelection prospects.

As a result, they reward local administrators with their votes. The electorate evaluates the administration throughout the first three years and if a prolonged and

constant work has been observed, incumbents attain reelection. On the contrary, if the types of expenditure performed are not in line with the local preferences this might result in a decrease in the probability of being reelected as has been observed in the results when issues related to climate are carried out as projects instead of roads or electrification projects before the electoral year. A possible explanation could be that since some of these projects are to satiate local and urgent needs of the poorest populations in Peru, there are needs such as a road or light at home that are more valued than a social prevision plan and that is why voters reward certain types of capital expenditures and punish others.

Additionally, mayors who are likely to be reelected arecharacterized by being younger (less than forty years of age), and having high levels of capital expenditure are likely to be reelected. Also, the type of political party they are affiliated with, whether it is a regional movement, a national political party, a local organization or a political alliance does not seem to influence the probability of reelection. A possible explanation could be that voters do not identify themselves with a particular party or regional movement, but with a person for the case of Peru. Hence, personal characteristics such as age, gender, and human capital, abilities for being a good politician might be rewarded and the support increased when the politician is also a good administrator by performing several projects of certain types throughout their tenures.

In conclusion, there is evidence to support that high levels of capital expenditure carried out throughout 2007-2010 and 2011-2014 do have a positive impact on the probability of a mayor being reelected. Secondly, the types of expenditure carried out by local administration do matter and also have an impact on the probability of reelection of a mayor. Thirdly, a combination of appropriate timing and investing in the types of capital expenditure that reflect the immediate needs of the population seem to be the most important factors to attain reelection. Fourthly, personal, district-level, and municipal characteristics also contribute to a higher probability of being reelected.

Possible aspects to be studied in the future are the inclusion of a corruption variable. Ferrazand Finan (2009) implement a corruption variable for the case of Brazil, but that is a particular case where the auditory entity, the one in charge of identifying corruption within the Brazilian local administrations, publish a detailed report. In Peru, that information is not available yet. The Contraloría General de la República has published a similar report in 2013, but that is only one observation in time. Since our study starts in 2006 and ends in 2014, another instrument must be designed to measure the levels of corruption.

Note of Gratitude

I am very thankful to Alan Sánchez Jiménez for his guidance, patience and supervision throughout this research process, George Sánchez and José Carlos Aramburú from the Ministry of Economics and Finance for their constant support, the members of Centro de Investigación Social y Económica at Universidad de Piura – Campus Lima, Diego Winkelried and Ramiro Gil from Universidad del Pacífico for their comments to improve my paper, Congressman Juan Carlos Eguren and his team of legal advisors for support on electoral and budget legislation, and the many workers of the Peruvian electoral organisms, ONPE and JNE, who provided me with electoral information and a comprehensive understanding of the electoral processes in Peru. I am also thankful to Norman Loayza and Claudia Meza-Cuadra for guidance and support.Finally, to my family and Corinne Burda for their constant encouragement and patience.

References

Abrams, B.A., & Butkiewicz, J.L, (1995). The Influence of State Level Economic Conditions on the 1992 U.S. Presidential Election, *Public Choice*, 85(1-2), 1-10. doi. 10.1007/BF01047898

Alesina, A., Hausmann, R., Hommes, R., & Stein, E. (1999). Budget institutions and fiscal performance in Latin America. *Journal of Development Economics*, 59(2), 253-273. doi. 10.1016/S0304-3878(99)00012-7

Anderson, C.D., & Morgan, J. (2011). Economic Voting and Incumbent Mayoral Elections in Canada: 1997-2010. *Working Paper*. The University of Western Ontario.

Besley, T., Pande, R., Rahman, L., & Rao, V. (2004). The politics of public good provision: Evidence from Indian local governments. *Journal of the European Economic Association*, 2(2-3), 416-426. doi. 10.1162/154247604323068104

Caselli, F., & Michaels, G. (2009). Do oil windfalls improve living standards? Evidence from Brazil NBER, *Working Paper*, No. 15550. doi. 10.3386/w15550

Castro, J. F., & Torres, J. (2012). Cambios enlasreglaselectorales, número de partidos y dispersióndelvoto: unaprimeraaproximación. *Working Papers*. Universidad del Pacífico.

Eaton, K., Kaiser, K., & Smoke. P. (2010). *The Political Economy of Decentralization Reforms: Implications for Aid Effectiveness.*World Bank. Washington D.C.

Ferraz, C., & Finan, F. (2007). Exposing corrupt politicians: the effects of Brazil's publicly released audits on electoral outcomes. *Quarterly Journal of Economics*, 123(2), 703-745. doi. 10.1162/qjec.2008.123.2.703

Ferraz, C., & Finan, F. (2009). *Electoral accountability and corruption: Evidence from the audits of local governments*, NBER, *Working Paper*, No. 14937. doi. 10.3386/w14937

Leon, G. (2013). *Turnout, Political Preferences and Information Experimental Evidence from Peru*. Universidad Pompeu Fabra and Barcelona GSE.

Martinelli, C., & Duggan, J. (2014). The Political Economy of Dynamic Elections: A Survey and Some new Results. Working Paper Series.Centro de InvestigaciónEconómica – Instituto Tecnológico Autónomo de México.

Meltzer, A.H., & Scott F. R. (1983). Tests of a Rational Theory of the Size of Government, *Public Choice*, 41(3), 403-418. doi. 10.1007/BF00141072

Meltzer, A.H., & Scott F.R. (1981). *A Rational Theory of the Size ofGovernment*, Journal of Political Economy, 89(5), 914-927. doi. 10.1086/261013

Oates, W.E. (1972). *Fiscal Federalism*. Books.

Oates, W.E. (1985). *On the nature and measurement of fiscal illusion: A survey*. Department of Economics, University of Maryland.

Perotti, R. (1996). Growth, Income Distribution, and Democracy: What the Data Say, *Journal of Economic Growth*, 1(2), 149-187. doi. 10.1007/BF00138861

Porcelli, F. (2009). Fiscal Decentralisationand efficiency of government. A brief literature review. *Department of Economics*.University of Warwick (UK).

Rodden, J., Eskeland, G.S., & Litvack, J. (2003). *Fiscal Decentralization and theChallenge of Hard Budget Constraints*. The MIT Press. Cambridge, MA.

Sakurai, S. N., & Menezes-Filho, N. A. (2008). *Fiscal policy and relection in Brazilian municipalities.* Public Choice, 137(1-2), 301-314. doi. 10.1007/s11127-008-9329-3

Smoke, P., & Lewis, B. (1996). Fiscal decentralization in Indonesia: A new approach to an old idea.*World Development*. 24(8), 1281-1299. doi. 10.1016/0305-750X(96)00042-3

Steiner, S. (2010). How Important is the Capacity of Local Governments for Improvements in Welfare? Evidence from Decentralised Uganda. *Journal of Development Studies*. 46(4), 644-661. doi. 10.1080/00220380903318046

Tiebout, C. M. (1956). A pure theory of local expenditures. *The Journal of Political Economy*, 64(5), 416-424. doi. 10.1086/257839

Veiga, L.G., & Veiga, F.J. (2007). Political business cycles at the municipal level. *Public Choice*, 131(1-2), 45-64. doi. 10.1007/s11127-006-9104-2

Wade, L.L., & Owens, J.R. (1992). Economic conditions and voting in Japanese house elections. *Journal of Northeast Asian Studies*. 11(3), 3-24. doi. 10.1007/BF03023325